



# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

CAT. No. E1001F

| INDEX                  |                                                                 |   |
|------------------------|-----------------------------------------------------------------|---|
| PRODUCT SEARCH         | SERIES TABLE                                                    | ➡ |
|                        | GROUP CHART                                                     | ➡ |
| PRODUCTION GUIDE       | PRECAUTIONS AND GUIDELINES<br>(Aluminum Electrolytic Capacitor) | ➡ |
|                        | PART NUMBERING SYSTEM                                           | ➡ |
|                        | ENVIRONMENTAL CONSIDERATION                                     | ➡ |
|                        | PACKAGING                                                       | ➡ |
|                        | TAPING SPECIFICATIONS                                           | ➡ |
|                        | STANDARDIZATION                                                 | ➡ |
|                        | WORLD-WIDE MANUFACTURING LOCATIONS                              | ➡ |
| PRODUCT SPECIFICATIONS | RADIAL LEAD TYPE                                                | ➡ |
| RELIABILITY DATA       |                                                                 | ➡ |
| APPENDIX (GLOBAL CODE) |                                                                 | ➡ |

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## CAPACITOR SERIES TABLE, CONTENTS

[Next page](#)

| Series                              |                    | Features                                             | Endurance<br>(+R=With ripple)                                                             | Standard type                  | Low impedance | Solvent-proof | Terminal type | Rated voltage range<br>(V <sub>dc</sub> ) | Capacitance range<br>(μF) |
|-------------------------------------|--------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------|---------------|---------------|---------------|-------------------------------------------|---------------------------|
| Conductive Polymer Electrolyte Type | PXE (NEW)          | Vertical type, super low ESR, high ripple current    | 105°C 2,000 hours                                                                         |                                | ●             | ●             | SMD           | 2.5 to 16                                 | 33 to 1,200               |
|                                     | PXC                | Vertical type, super low ESR                         | 105°C 1,000 hours                                                                         |                                | ●             | ●             | SMD           | 2.5 to 16                                 | 27 to 470                 |
|                                     | PXA (Upgrade)      | Vertical type, super low ESR                         | 105°C 2,000 hours                                                                         |                                | ●             | ●             | SMD           | 2.5 to 25                                 | 3.3 to 1,500              |
|                                     | PXH                | 125°C Vertical type                                  | 125°C 1,000 hours                                                                         |                                | ●             | ●             | SMD           | 2.5 to 20                                 | 22 to 1,000               |
|                                     | PSC (NEW)          | Radial lead type, super low ESR, high ripple current | 105°C 2,000 hours                                                                         |                                | ●             | ●             | Radial        | 2.5 to 16                                 | 330 to 2,700              |
|                                     | PSA                | Super low ESR, high ripple current                   | 105°C 2,000 hours                                                                         |                                | ●             | ●             | Radial        | 2.5 to 16                                 | 100 to 1,000              |
|                                     | PS                 | Super low ESR, high ripple current                   | 105°C 2,000 hours                                                                         |                                | ●             | ●             | Radial        | 2.5 to 25                                 | 68 to 1,500               |
| Surface Mount                       | Vertical Type      | MVS                                                  | 4.5mm height                                                                              | 85°C 2,000 hours               | ●             | ●             | SMD           | 4 to 50                                   | 0.1 to 220                |
|                                     |                    | MVA                                                  | 5.5 to 22.0mm max. height, downsized                                                      | 85°C 2,000 hours               |               | ▲             | SMD           | 4 to 450                                  | 0.1 to 10,000             |
|                                     |                    | MV                                                   | 5.5 to 10.5mm max. height                                                                 | 85°C 1,000 to 2,000 hours      | ●             | ●             | SMD           | 4 to 63                                   | 0.1 to 1,000              |
|                                     |                    | MVE                                                  | 5.5 to 22.0mm max. height, downsized                                                      | 105°C 1,000 to 2,000 hours     |               | ▲             | SMD           | 6.3 to 450                                | 0.47 to 6,800             |
|                                     |                    | MVK                                                  | 5.5 to 10.5mm max. height                                                                 | 105°C 1,000 to 2,000 hours     | ●             | ●             | SMD           | 6.3 to 50                                 | 0.1 to 1,000              |
|                                     |                    | MKA                                                  | 5.5 to 10.5mm max. height                                                                 | 105°C 1,000 to 2,000 hours     |               | ●             | SMD           | 6.3 to 50                                 | 0.1 to 1,000              |
|                                     |                    | MZA (Upgrade)                                        | 6.1 to 10.5mm max. height, very low impedance                                             | 105°C 2,000 hours              |               | ●             | SMD           | 6.3 to 80                                 | 3.3 to 1,500              |
|                                     |                    | MVY                                                  | 5.5 to 22.0mm max. height                                                                 | 105°C 1,000 to 5,000 hours     |               | ●             | SMD           | 6.3 to 100                                | 1.0 to 8,200              |
|                                     |                    | MZD (NEW)                                            | 105°C 5,000 hours, low impedance, long life<br>(Ask Engineering Bulletin No758 in detail) | 105°C 5,000 hours              |               | ●             | SMD           | 6.3 to 50                                 | 10 to 470                 |
|                                     |                    | MLA (NEW)                                            | Low impedance, long life                                                                  | 105°C 3,000 hours              |               | ●             | SMD           | 6.3 to 50                                 | 10 to 1,000               |
|                                     |                    | MVJ                                                  | 6.0mm max. height<br>(Ask Engineering Bulletin No653 in detail)                           | 105°C 2,000 hours              |               | ●             | SMD           | 6.3 to 50                                 | 0.1 to 100                |
|                                     |                    | MLD (NEW)                                            | 105°C 5,000 hours, long life<br>(Ask Engineering Bulletin No759 in detail)                | 105°C 5,000 hours              |               | ●             | SMD           | 6.3 to 50                                 | 0.1 to 1,000              |
|                                     |                    | MVL                                                  | 6.0 to 10.5mm max. height                                                                 | 105°C 3,000 to 5,000 hours     |               | ●             | SMD           | 6.3 to 50                                 | 0.1 to 1,000              |
|                                     |                    | MVH (Upgrade)                                        | 6.0 to 22.0mm max. height                                                                 | 125°C 1,000 to 5,000 hours     |               | ▲             | SMD           | 10 to 450                                 | 3.3 to 4,700              |
|                                     |                    | MV-BP                                                | 5.5mm max. height, bi-polar                                                               | 85°C 2,000 hours               |               | ●             | SMD           | 4 to 50                                   | 0.1 to 47                 |
|                                     |                    | MVK-BP                                               | 6.0mm max. height, bi-polar                                                               | 105°C 1,000 hours              |               | ●             | SMD           | 6.3 to 50                                 | 0.1 to 47                 |
| Miniature                           | Low Profile        | SRM                                                  | 5mm height, downsized                                                                     | 85°C 1,000 hours               |               | ●             | Radial        | 4 to 50                                   | 0.1 to 330                |
|                                     |                    | SRE                                                  | 5mm height                                                                                | 85°C 1,000 hours               | ●             |               | Radial        | 4 to 50                                   | 0.1 to 100                |
|                                     |                    | KRE                                                  | 5mm height                                                                                | 105°C 1,000 hours              | ●             | ●             | Radial        | 6.3 to 50                                 | 0.1 to 100                |
|                                     |                    | SRA                                                  | 7mm height                                                                                | 85°C 1,000 hours               | ●             |               | Radial        | 4 to 63                                   | 0.1 to 470                |
|                                     |                    | KMA                                                  | 7mm height                                                                                | 105°C 1,000 hours              | ●             | ●             | Radial        | 4 to 63                                   | 0.1 to 220                |
|                                     |                    | SRG                                                  | φ4×7 to φ18×25mm, low profile                                                             | 85°C 1,000 to 2,000 hours      |               | ●             | Radial        | 4 to 50                                   | 0.1 to 10,000             |
|                                     |                    | KRG                                                  | φ4×7 to φ18×25mm, low profile                                                             | 105°C 1,000 hours              |               | ●             | Radial        | 6.3 to 50                                 | 0.1 to 10,000             |
|                                     | General Purpose    | SMQ                                                  | Downsized                                                                                 | 85°C 2,000 hours               | ●             |               | Radial        | 6.3 to 450                                | 0.1 to 47,000             |
|                                     |                    | KMQ                                                  | Downsized                                                                                 | 105°C 1,000 to 2,000 hours +R  | ●             | ▲             | Radial        | 6.3 to 450                                | 0.1 to 47,000             |
|                                     |                    | SMG                                                  | General, downsized                                                                        | 85°C 2,000 hours               | ●             | ▲             | Radial        | 6.3 to 450                                | 0.1 to 39,000             |
|                                     |                    | KMG                                                  | General, downsized                                                                        | 105°C 1,000 to 2,000 hours +R  | ●             | ▲             | Radial        | 6.3 to 450                                | 0.1 to 22,000             |
|                                     |                    | SME                                                  | General (Ask Engineering Bulletin No511 in detail)                                        | 85°C 2,000 hours               |               | ▲             | Radial        | 6.3 to 450                                | 0.1 to 15,000             |
|                                     |                    | KME                                                  | General (Ask Engineering Bulletin No512 in detail)                                        | 105°C 1,000 hours +R           |               | ▲             | Radial        | 6.3 to 400                                | 0.1 to 15,000             |
|                                     |                    | SME-BP                                               | Bi-polar, general                                                                         | 85°C 2,000 hours               | ●             | ●             | Radial        | 6.3 to 100                                | 0.47 to 6,800             |
|                                     |                    | KME-BP                                               | Bi-polar, general                                                                         | 105°C 1,000 hours              | ●             | ●             | Radial        | 6.3 to 100                                | 0.47 to 6,800             |
|                                     | High Frequency Use | KZM (NEW)                                            | Lowest impedance, long life                                                               | 105°C 6,000 to 10,000 hours +R | ●             |               | Radial        | 6.3 to 35                                 | 27 to 10,000              |
|                                     |                    | KZH                                                  | Lowest impedance, long life                                                               | 105°C 5,000 to 6,000 hours +R  | ●             |               | Radial        | 6.3 to 35                                 | 47 to 8,200               |
|                                     |                    | KZE                                                  | Lowest impedance, long life                                                               | 105°C 1,000 to 5,000 hours +R  | ●             |               | Radial        | 6.3 to 100                                | 6.8 to 6,800              |
|                                     |                    | KY (Upgrade)                                         | Low impedance, long life                                                                  | 105°C 4,000 to 10,000 hours +R | ●             |               | Radial        | 6.3 to 100                                | 0.47 to 18,000            |
|                                     |                    | LXZ                                                  | Low impedance, downsized                                                                  | 105°C 2,000 to 8,000 hours +R  | ●             | ●             | Radial        | 6.3 to 63                                 | 12 to 18,000              |
|                                     |                    | LXY                                                  | Low impedance, high reliability                                                           | 105°C 2,000 to 8,000 hours +R  | ●             | ●             | Radial        | 10 to 63                                  | 10 to 8,200               |
|                                     |                    | LXV                                                  | Low impedance                                                                             | 105°C 2,000 to 5,000 hours +R  |               | ●             | Radial        | 6.3 to 100                                | 5.6 to 15,000             |
|                                     |                    | KMF                                                  | Low impedance, high CV, general<br>(Ask Engineering Bulletin No630 in detail)             | 105°C 2,000 hours +R           |               | ●             | Radial        | 160 to 450                                | 2.2 to 220                |

: Promotional products

▲ : Some of range are solvent-proof.

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## CAPACITOR SERIES TABLE, CONTENTS

[Previous page](#)

| Series                    |                     |                | Features                                                                        | Endurance<br>(+R=With ripple)   | Standard type | Low impedance | Solvent-proof | Terminal type | Rated voltage range<br>(V <sub>dc</sub> ) | Capacitance range<br>(μF) |
|---------------------------|---------------------|----------------|---------------------------------------------------------------------------------|---------------------------------|---------------|---------------|---------------|---------------|-------------------------------------------|---------------------------|
| Miniature                 | High Reliability    | KXJ (NEW)      | Downsized, long life, for input filtering                                       | 105°C 10,000 to 12,000 hours +R |               | ●             |               | Radial        | 160 to 400                                | 10 to 680                 |
|                           |                     | KXG            | Downsized, long life, for input filtering                                       | 105°C 8,000 to 10,000 hours +R  |               | ●             |               | Radial        | 160 to 450                                | 6.8 to 330                |
|                           |                     | KMX            | Long life, for input filtering<br>(Ask Engineering Bulletin No 646 in detail)   | 105°C 8,000 to 10,000 hours +R  |               | ●             |               | Radial        | 160 to 450                                | 3.3 to 680                |
|                           |                     | SMH            | φ20×20 to φ22×50mm                                                              | 85°C 2,000 hours +R             | ●             |               |               | Radial        | 160 to 450                                | 33 to 470                 |
|                           |                     | KMH            | φ20×20 to φ22×50mm                                                              | 105°C 2,000 hours +R            | ●             |               |               | Radial        | 160 to 450                                | 33 to 470                 |
|                           |                     | PAG            | Low profile, for input filtering                                                | 105°C 2,000 hours +R            |               |               |               | Radial        | 200 to 450                                | 18 to 560                 |
|                           |                     | KLJ (NEW)      | Downsized, no sparks with DC overvoltage                                        | 105°C 2,000 hours +R            |               |               |               | Radial        | 200 & 400                                 | 4.7 to 330                |
|                           |                     | KLG            | No sparks with DC overvoltage                                                   | 105°C 2,000 hours +R            |               |               |               | Radial        | 200 & 400                                 | 22 to 330                 |
|                           |                     | FL             | Long life                                                                       | 105°C 3,000 hours +R            |               |               | ●             | Radial        | 6.3 to 50                                 | 0.47 to 270               |
|                           |                     | GPA (NEW)      | 125°C, downsized, low impedance                                                 | 125°C 3,000 to 5,000 hours +R   |               | ●             | ●             | Radial        | 25 to 63                                  | 330 to 6,800              |
|                           |                     | GXE            | 125°C, downsize, low impedance                                                  | 125°C 2,000 to 5,000 hours +R   |               | ●             | ▲             | Radial        | 10 to 450                                 | 4.7 to 4,700              |
|                           |                     | GXL            | 125°C Long life                                                                 | 125°C 5,000/10,000 hours +R     |               |               | ●             | Radial        | 10 to 50                                  | 100 to 4,700              |
|                           |                     | GHA (NEW)      | 150°C (Ask Engineering Bulletin No715 in detail)                                | 150°C 1,000 hours               |               |               | ●             | Radial        | 10 to 100                                 | 10 to 10,000              |
|                           | Special Application | LBG (Upgrade!) | For airbag                                                                      | 105°C 5,000 hours +R            |               | ●             | ●             | Radial        | 25 to 35                                  | 1,000 to 11,000           |
|                           |                     | KZV (NEW)      | For PC motherboard<br>(Ask Engineering Bulletin No756 in detail)                | 105°C 2,000 hours +R            |               | ●             |               | Radial        | 4                                         | 820 to 2,700              |
|                           |                     | KZJ (NEW)      | For PC motherboard                                                              | 105°C 2,000 hours +R            |               | ●             |               | Radial        | 6.3 to 16                                 | 470 to 3,300              |
|                           |                     | KZG            | For PC motherboard                                                              | 105°C 2,000 hours +R            |               | ●             |               | Radial        | 6.3 to 16                                 | 470 to 3,300              |
|                           |                     | LLA            | Low DC leakage, general                                                         | 85°C 1,000 hours                |               |               | ●             | Radial        | 6.3 to 50                                 | 0.1 to 15,000             |
|                           |                     | PH             | For photo flash                                                                 | 55°C 5,000 times charging       |               |               |               | Radial        | 300 & 330                                 | —                         |
| Large Sized               | General Purpose     | KMR (NEW)      | 105°C, Snap-in terminal, super downsized                                        | 105°C 2,000 hours +R            | ●             |               |               | Pin           | 160 to 450                                | 100 to 3,900              |
|                           |                     | SMQ            | Snap-in terminal, more downsized                                                | 85°C 2,000 hours +R             | ●             |               |               | Pin           | 160 to 450                                | 82 to 3,900               |
|                           |                     | KMQ (Upgrade!) | Snap-in terminal, more downsized                                                | 105°C 2,000 hours +R            | ●             |               |               | Pin           | 160 to 450                                | 68 to 3,300               |
|                           |                     | SMM            | Snap-in terminal, downsized                                                     | 85°C 3,000 hours +R             | ●             |               |               | Pin           | 35, 50, 160 to 450                        | 47 to 33,000              |
|                           |                     | KMM            | Snap-in terminal, downsized                                                     | 105°C 2,000 to 3,000 hours +R   | ●             |               |               | Pin           | 160 to 450                                | 39 to 3,300               |
|                           |                     | SMH            | Snap-in terminal, general<br>(Refer Engineering Bulletin No585 for 160 to 450V) | 85°C 2,000 hours +R             | ●             |               |               | Pin           | 6.3 to 100                                | 820 to 100,000            |
|                           |                     | KMH            | Snap-in terminal, general<br>(Refer Engineering Bulletin No584 for 160 to 450V) | 105°C 2,000 hours +R            | ●             |               |               | Pin           | 6.3 to 100                                | 560 to 82,000             |
|                           | Low Profile         | SLM            | 15mm height                                                                     | 85°C 2,000 hours +R             |               |               |               | Pin           | 160 to 400                                | 47 to 560                 |
|                           |                     | KLM            | 15mm height                                                                     | 105°C 2,000 hours +R            |               |               |               | Pin           | 160 to 400                                | 39 to 390                 |
|                           | High Reliability    | LXM            | Long life                                                                       | 105°C 7,000 hours +R            |               |               |               | Pin           | 160 to 450                                | 47 to 2,200               |
|                           |                     | LXQ            | Long life, downsized                                                            | 105°C 5,000 hours +R            |               |               |               | Pin           | 160 to 450                                | 82 to 2,700               |
|                           |                     | LXG            | Long life                                                                       | 105°C 5,000 hours +R            |               |               |               | Pin           | 10 to 100                                 | 390 to 47,000             |
|                           |                     | CHA            | No sparks with DC overvoltage, downsized                                        | 105°C 2,000 hours +R            |               |               |               | Pin           | 200 & 400                                 | 56 to 1,200               |
|                           |                     | LXH            | No sparks with DC overvoltage                                                   | 105°C 3,000/5,000 hours +R      |               |               |               | Pin           | 200 & 400                                 | 68 to 1,500               |
|                           |                     | RWE-LR         | For air-conditioning<br>(Ask Engineering Bulletin No768 in detail)              | 85°C 3,000 hours +R             |               |               |               | Lug           | 250 to 450                                | 330 to 2,200              |
| Screw-mount Terminal Type | General Purpose     | SME            | Screw terminal, general                                                         | 85°C 2,000 hours +R             | ●             |               |               | Screw         | 10 to 250                                 | 560 to 680,000            |
|                           |                     | KMH            | Screw terminal, general                                                         | 105°C 2,000 hours +R            | ●             |               |               | Screw         | 10 to 400                                 | 180 to 680,000            |
|                           | For Inverter        | RWG (NEW)      | 85°C, high ripple, downsized, long life                                         | 85°C 5,000 hours +R             |               |               |               | Screw         | 350 to 450                                | 1,500 to 18,000           |
|                           |                     | RWF            | High ripple, long life                                                          | 85°C 5,000 hours +R             |               |               |               | Screw         | 350 to 450                                | 820 to 22,000             |
|                           |                     | RWE            | High ripple                                                                     | 85°C 2,000 hours +R             | ●             |               |               | Screw         | 350 to 550                                | 100 to 12,000             |
|                           |                     | RWY            | High ripple, long life, low cost                                                | 85°C 5,000 hours +R             |               |               |               | Screw         | 350 to 450                                | 500 to 14,000             |
|                           |                     | RWL            | High ripple, long life                                                          | 85°C 20,000 hours +R            |               |               |               | Screw         | 350 to 450                                | 2,200 to 12,000           |
|                           |                     | FTP            | Ellips can shape, high ripple                                                   | 85°C 5,000 hours +R             |               |               |               | Screw         | 63 to 450                                 | 270 to 21,000             |
|                           |                     | LXA            | Long life                                                                       | 105°C 2,000/5,000 hours +R      |               |               |               | Screw         | 10 to 525                                 | 330 to 390,000            |
|                           |                     | LXR            | High ripple, long life                                                          | 105°C 5,000 hours +R            |               |               |               | Screw         | 350 to 450                                | 2,200 to 15,000           |
|                           |                     | LWY            | Low cost (Ask Engineering Bulletin No714 in detail)                             | 105°C 5,000 hours +R            |               |               |               | Screw         | 350 to 450                                | 460 to 13,000             |
|                           |                     | KW             | Low impedance (Ask Engineering Bulletin in detail)                              | 105°C 2,000 hours               |               | ●             |               | Screw         | 10 to 100                                 | 1,000 to 100,000          |

: Promotional products

: Some of range are solvent-proof.



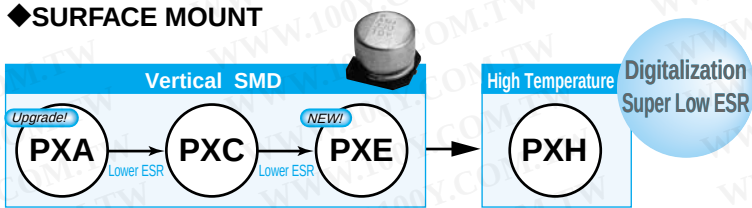
## GROUP CHART

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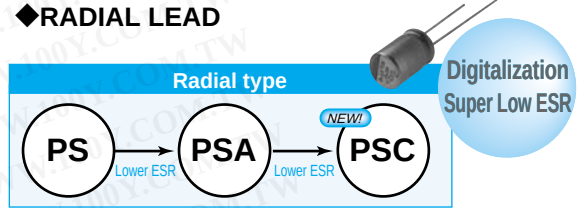
[Next page](#)

## CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

## ◆SURFACE MOUNT

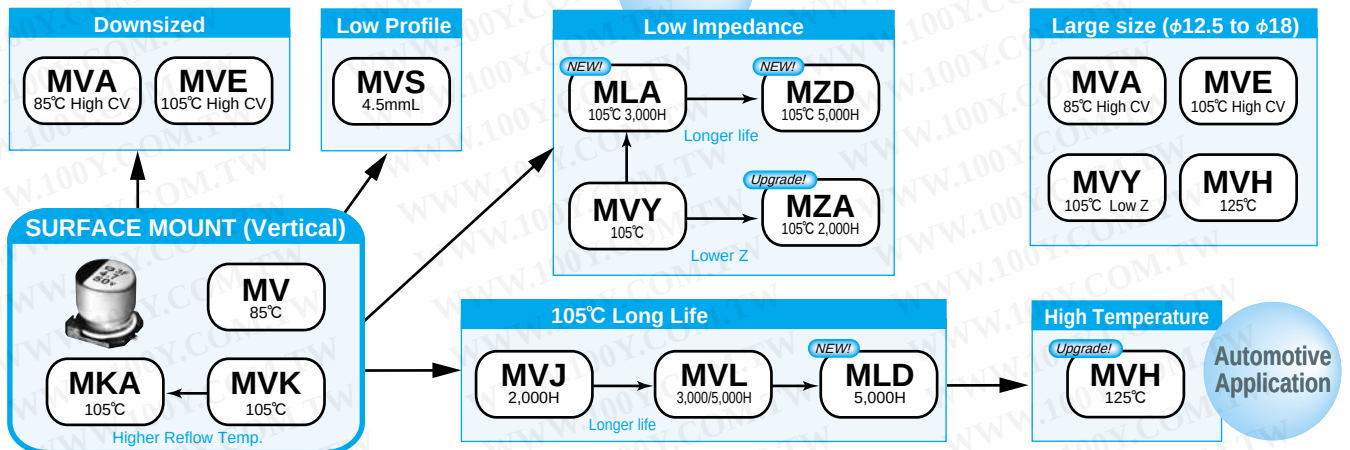


## ◆RADIAL LEAD

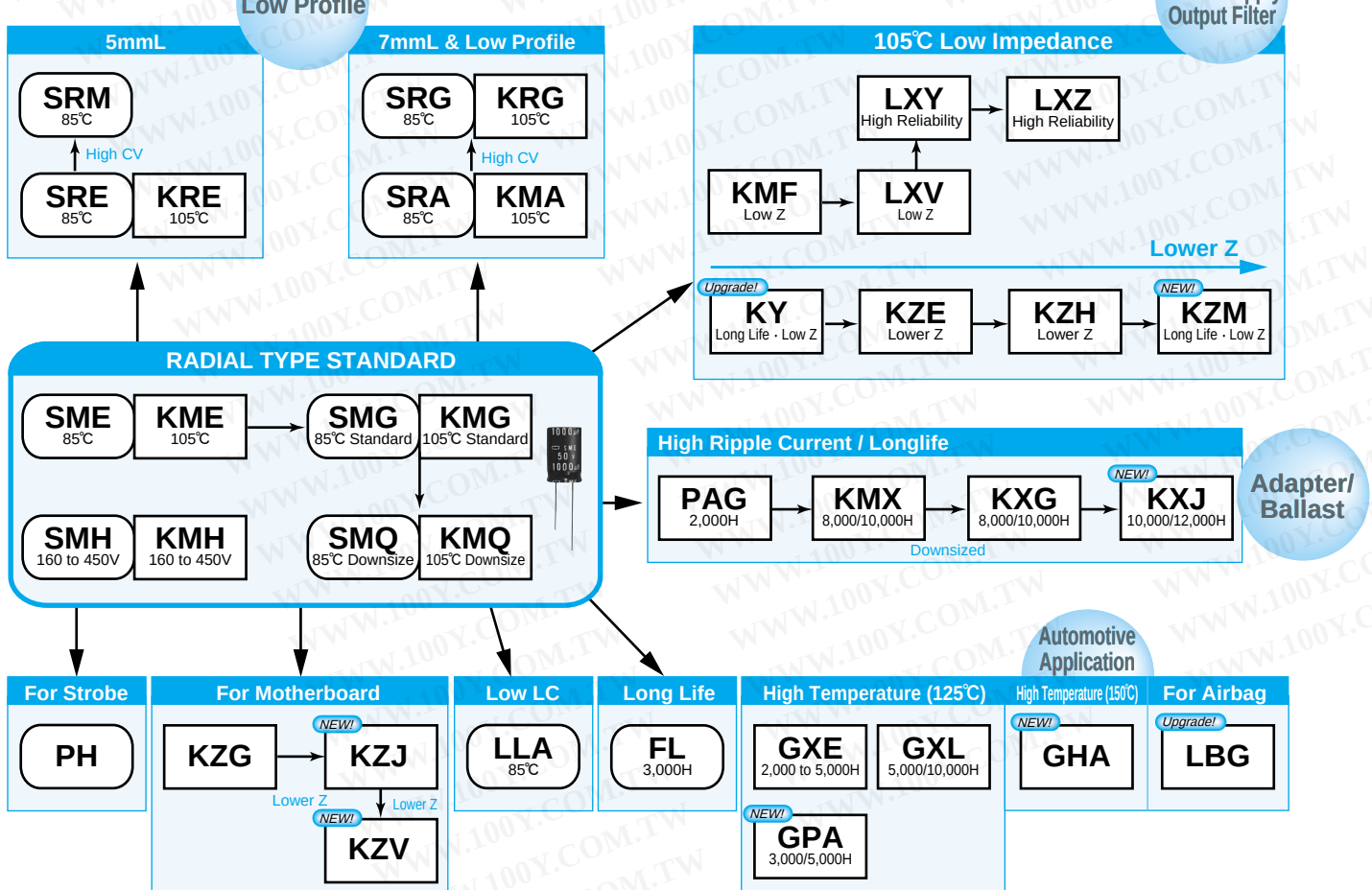


## ALUMINUM ELECTROLYTIC CAPACITORS

## ◆SURFACE MOUNT



## ◆RADIAL LEAD



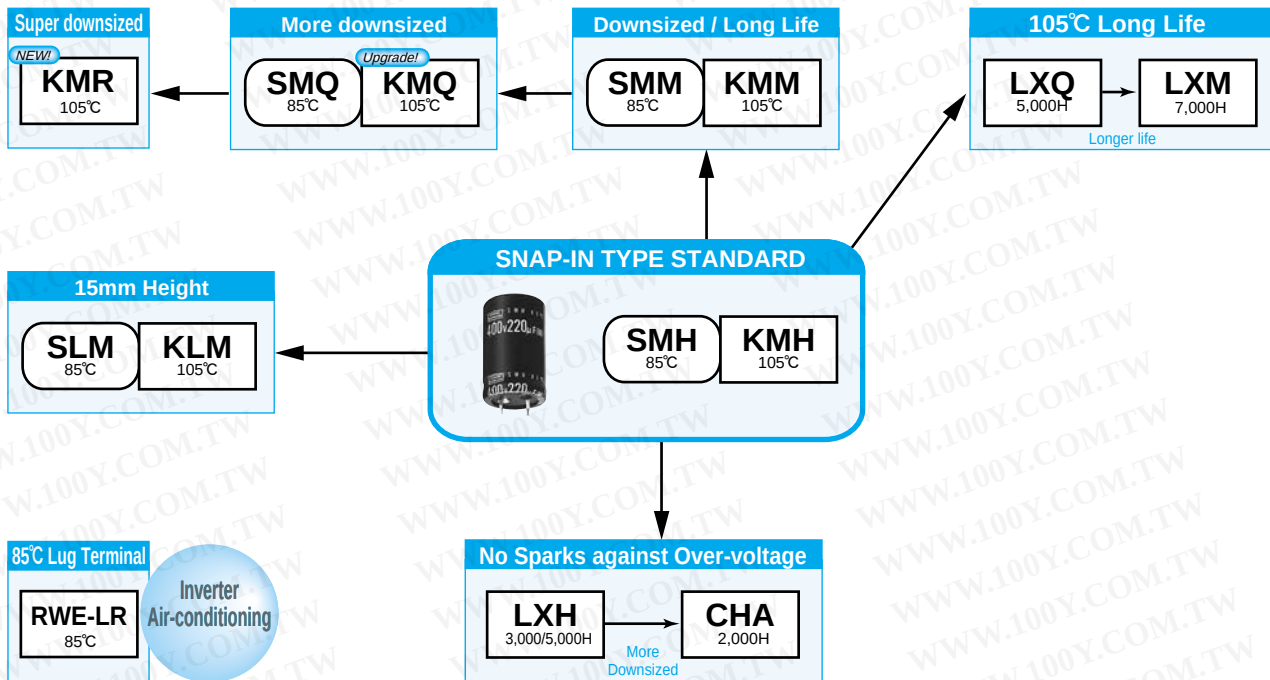


## GROUP CHART

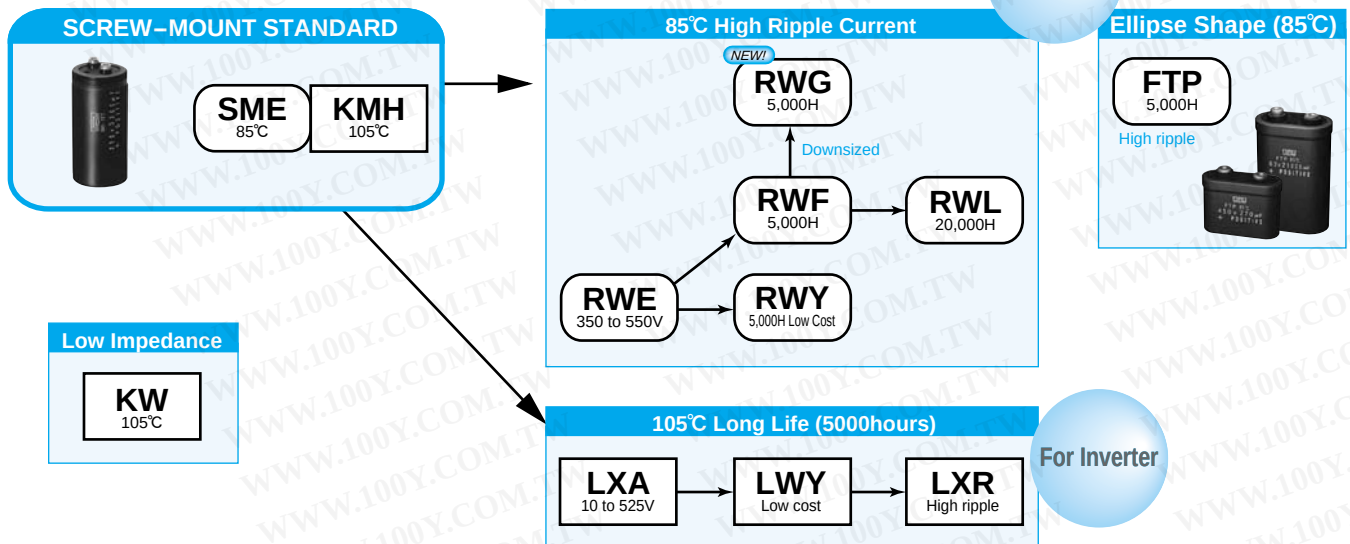
[Previous page](#)

## ALUMINUM ELECTROLYTIC CAPACITORS

## ◆SNAP-IN



## ◆SCREW-MOUNT TERMINAL



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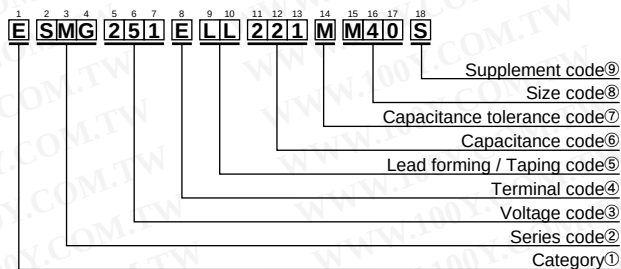


## PART NUMBERING SYSTEM

## A guide to global code (Radial lead type)

(Example : SMG series, 250V-220 $\mu$ F,  $\phi$ 18 $\times$ 40L, Straight lead with bulk)

Refer to the following table about radial lead type



## ①Category

| Type     | Code |
|----------|------|
| Polar    | E    |
| Bi-polar | B    |

## ②Series code

| Series name    | Code |     |     |
|----------------|------|-----|-----|
|                | 2th  | 3th | 4th |
| SMG            | S    | M   | G   |
| FL             | F    | L   | —   |
| No series name | C    | S   | T   |

## ③Voltage code

| Voltage (V) | Code |     |     |
|-------------|------|-----|-----|
|             | 5th  | 6th | 7th |
| 4           | 4    | R   | 0   |
| 6.3         | 6    | R   | 3   |
| 10          | 1    | 0   | 0   |
| 16          | 1    | 6   | 0   |
| 25          | 2    | 5   | 0   |
| 35          | 3    | 5   | 0   |
| 50          | 5    | 0   | 0   |
| 63          | 6    | 3   | 0   |
| 80          | 8    | 0   | 0   |
| 100         | 1    | 0   | 1   |
| 160         | 1    | 6   | 1   |
| 200         | 2    | 0   | 1   |
| 250         | 2    | 5   | 1   |
| 315         | 3    | B   | 1   |
| 350         | 3    | 5   | 1   |
| 400         | 4    | 0   | 1   |
| 420         | 4    | 2   | 1   |
| 450         | 4    | 5   | 1   |
| 500         | 5    | 0   | 1   |

## ④Terminal code

| Type        | Code |
|-------------|------|
| Radial lead | E    |

## ⑤Lead forming / Taping code

| Type                              | Contents               | Code |      |
|-----------------------------------|------------------------|------|------|
|                                   |                        | 9th  | 10th |
| Lead forming (Radial lead / Bulk) | Straight               | L    | L    |
|                                   | CC(3.5mm)              | C    | 3    |
|                                   | CC(5.0mm)              | C    | 5    |
|                                   | FC                     | F    | C    |
|                                   | FM                     | F    | M    |
|                                   | MC                     | M    | C    |
|                                   | BC                     | B    | C    |
|                                   | RC                     | R    | C    |
| Taping (Radial lead)              | Straight               | T    | D    |
|                                   | Sloping clinch         | T    | E    |
|                                   | Straight (Skip a hole) | T    | A    |
|                                   | Clinch (F=2.5mm)       | T    | B    |
|                                   | Clinch (F=3.5mm)       | T    | C    |

Refer product guide for lead forming and taping specifications.

## ⑥Capacitance code

| Cap. ( $\mu$ F) | Code |      |      |
|-----------------|------|------|------|
|                 | 11th | 12th | 13th |
| 0.10            | R    | 1    | 0    |
| 0.22            | R    | 2    | 2    |
| 0.33            | R    | 3    | 3    |
| 0.47            | R    | 4    | 7    |
| 0.68            | R    | 6    | 8    |
| 1.0             | 1    | R    | 0    |
| 2.2             | 2    | R    | 2    |
| 3.3             | 3    | R    | 3    |
| 4.7             | 4    | R    | 7    |
| 6.8             | 6    | R    | 8    |
| 10              | 1    | 0    | 0    |
| 22              | 2    | 2    | 0    |
| 33              | 3    | 3    | 0    |
| 47              | 4    | 7    | 0    |
| 68              | 6    | 8    | 0    |
| 100             | 1    | 0    | 1    |
| 220             | 2    | 2    | 1    |
| 330             | 3    | 3    | 1    |
| 470             | 4    | 7    | 1    |
| 680             | 6    | 8    | 1    |
| 1,000           | 1    | 0    | 2    |
| 2,200           | 2    | 2    | 2    |
| 3,300           | 3    | 3    | 2    |
| 4,700           | 4    | 7    | 2    |
| 6,800           | 6    | 8    | 2    |
| 10,000          | 1    | 0    | 3    |
| 22,000          | 2    | 2    | 3    |
| 33,000          | 3    | 3    | 3    |
| 47,000          | 4    | 7    | 3    |
| 68,000          | 6    | 8    | 3    |

## ⑦Capacitance tolerance

| Tol. (%)   | Code |
|------------|------|
| $\pm 20$   | M    |
| $\pm 10$   | K    |
| -10 to +30 | Q    |
| -10 to +50 | T    |

## ⑧Size code

| $\phi$ D | Code |
|----------|------|
|          | 15th |
| 4        | D    |
| 5        | E    |
| 6.3      | F    |
| 8        | H    |
| 10       | J    |
| 12.5     | K    |
| 14.5     | U    |
| 16       | L    |
| 18       | M    |
| 20       | N    |
| 22       | P    |
| 25.4     | Q    |

| L    | Code |      |
|------|------|------|
|      | 16th | 17th |
| 5    | 0    | 5    |
| 7    | 0    | 7    |
| 9    | 0    | 9    |
| 11   | 1    | 1    |
| 11.5 | B    | 5    |
| 12.0 | 1    | 2    |
| 12.5 | C    | 5    |
| 13   | 1    | 3    |
| 15   | 1    | 5    |
| 16   | 1    | 6    |
| 20   | 2    | 0    |
| 25   | 2    | 5    |
| 30   | 3    | 0    |
| 31.5 | N    | 3    |
| 35   | 3    | 5    |
| 35.5 | P    | 1    |
| 40   | 4    | 0    |
| 45   | 4    | 5    |
| 50   | 5    | 0    |
| 55   | 5    | 5    |
| 60   | 6    | 0    |

## ⑨Supplement code

| Sleeve material           | Terminal plating material | Code |
|---------------------------|---------------------------|------|
|                           |                           | 18th |
| PET                       | Sn100%                    | S    |
|                           | Sn-Bi                     | D    |
|                           | Sn-Pb                     | C    |
| Sleeveless (Coating case) | Sn-Bi                     | G    |
|                           | Sn-Pb                     | F    |
| PVC                       | Sn100%                    | B    |
|                           | Sn-Bi                     | A    |
|                           | Sn-Pb                     | N    |

\* Refer to the appendix (Global code) for codes does not listed.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 5mm height, 85°C

## SRM Series

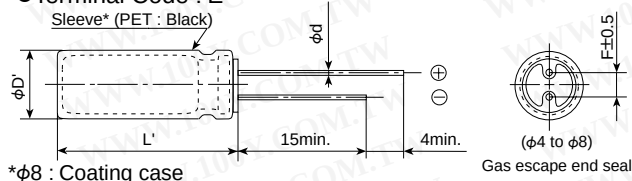
- Downsized from current standard SRE series
- 5mm height
- Endurance : 1,000 hours at 85°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                               |                                      |      |      |      |      |      |      |                  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|------|------------------|
| Category Temperature Range                             | -40 to +85°C                                                                                                                                                  |                                      |      |      |      |      |      |      |                  |
| Rated Voltage Range                                    | 4 to 50V <sub>dc</sub>                                                                                                                                        |                                      |      |      |      |      |      |      |                  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                     |                                      |      |      |      |      |      |      |                  |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes) |                                      |      |      |      |      |      |      |                  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V  | (at 20°C, 120Hz) |
|                                                        | tanδ (Max.)                                                                                                                                                   | 0.40                                 | 0.38 | 0.30 | 0.23 | 0.17 | 0.15 | 0.13 |                  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V  | (at 120Hz)       |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                             | 7                                    | 4    | 3    | 2    | 2    | 2    | 2    |                  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                             | 15                                   | 8    | 8    | 6    | 4    | 3    | 3    |                  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 85°C.          |                                      |      |      |      |      |      |      |                  |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |      |      |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |      |      |                  |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |      |      |                  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied. |                                      |      |      |      |      |      |      |                  |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |      |      |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |      |      |                  |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |      |      |                  |

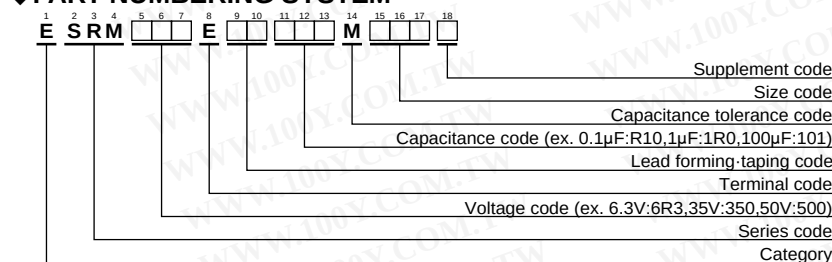
## ◆ DIMENSIONS [mm]

## ● Terminal Code : E



| φD  | 4          | 5    | 6.3  | 8    |
|-----|------------|------|------|------|
| φd  | 0.45       | 0.45 | 0.45 | 0.45 |
| F   | 1.5        | 2.0  | 2.5  | 2.5  |
| φD' | φD+0.5max. |      |      |      |
| L'  | L+1.0max.  |      |      |      |

## ◆ PART NUMBERING SYSTEM



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Please refer to "A guide to global code (radial lead type)"

## ◆ STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           |
|-----------------------|----------|--------------------|------|------------------------------------------------------|--------------------|
| 4                     | 100      | 5X5                | 0.40 | 55                                                   | ESRM4R0E□□101ME05D |
|                       | 220      | 6.3X5              | 0.40 | 88                                                   | ESRM4R0E□□221MF05D |
| 6.3                   | 22       | 4X5                | 0.38 | 22                                                   | ESRM6R3E□□220MD05D |
|                       | 47       | 4X5                | 0.38 | 40                                                   | ESRM6R3E□□470MD05D |
|                       | 330      | 8X5                | 0.38 | 141                                                  | ESRM6R3E□□331MH05G |
| 10                    | 33       | 4X5                | 0.30 | 36                                                   | ESRM100E□□330MD05D |
|                       | 100      | 6.3X5              | 0.30 | 78                                                   | ESRM100E□□101MF05D |
|                       | 220      | 8X5                | 0.30 | 148                                                  | ESRM100E□□221MH05G |
| 16                    | 10       | 4X5                | 0.23 | 18                                                   | ESRM160E□□100MD05D |
|                       | 22       | 4X5                | 0.23 | 33                                                   | ESRM160E□□220MD05D |
|                       | 33       | 5X5                | 0.23 | 47                                                   | ESRM160E□□330ME05D |
|                       | 47       | 5X5                | 0.23 | 55                                                   | ESRM160E□□470ME05D |
| 25                    | 4.7      | 4X5                | 0.17 | 13                                                   | ESRM250E□□4R7MD05D |
|                       | 10       | 4X5                | 0.17 | 25                                                   | ESRM250E□□100MD05D |
|                       | 22       | 5X5                | 0.17 | 41                                                   | ESRM250E□□220ME05D |
|                       | 47       | 6.3X5              | 0.17 | 63                                                   | ESRM250E□□470MF05D |

□□ : Lead forming code and taping code

Note : □□ had been unified to φ4X5.

- 5mm height
- Endurance : 1,000 hours at 85°C
- Non solvent-proof type
- RoHS Compliant



| Items                                                  | Characteristics                                                                                                                                               |                                      |      |      |      |      |      |      |                  |  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|------|------------------|--|
| Category                                               | Temperature Range                                                                                                                                             |                                      |      |      |      |      |      |      |                  |  |
| Temperature Range                                      | -40 to +85°C                                                                                                                                                  |                                      |      |      |      |      |      |      |                  |  |
| Rated Voltage Range                                    | 4 to 50V <sub>dc</sub>                                                                                                                                        |                                      |      |      |      |      |      |      |                  |  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                     |                                      |      |      |      |      |      |      |                  |  |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes) |                                      |      |      |      |      |      |      |                  |  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V  | (at 20°C, 120Hz) |  |
|                                                        | tanδ (Max.)                                                                                                                                                   | 0.35                                 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |                  |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V  | (at 120Hz)       |  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                             | 7                                    | 4    | 3    | 2    | 2    | 2    | 2    |                  |  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                             | 15                                   | 10   | 8    | 6    | 4    | 3    | 3    |                  |  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 85°C.          |                                      |      |      |      |      |      |      |                  |  |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |      |      |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |      |      |                  |  |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |      |      |                  |  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied. |                                      |      |      |      |      |      |      |                  |  |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |      |      |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |      |      |                  |  |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |      |      |                  |  |

Technical drawing of a gas escape end seal. The drawing shows a side view and a cross-section. The side view shows a sleeve (PET, Black) with an outer diameter  $\phi D'$  and a length  $L'$ . The sleeve is attached to a pipe with an outer diameter  $\phi d$ . The sleeve has a length of 15min. and a 4min. section. The cross-section shows a gas escape end seal with a diameter  $\phi 4$  to  $\phi 6.3$  and a thickness  $F \pm 0.5$ .

|           |                      |      |      |
|-----------|----------------------|------|------|
| $\phi D$  | 4                    | 5    | 6.3  |
| $\phi d$  | 0.45                 | 0.45 | 0.45 |
| F         | 1.5                  | 2.0  | 2.5  |
| $\phi D'$ | $\phi D + 0.5 \max.$ |      |      |
| L'        | $L + 1.0 \max.$      |      |      |

Diagram illustrating the code structure for a capacitor, showing the sequence of digits and their corresponding meanings:

- Supplement code (Digit 18)
- Size code (Digit 17)
- Capacitance tolerance code (Digit 16)
- Capacitance code (ex. 0.1µF:R10, 1µF:1R0, 100µF:101) (Digit 15)
- Lead forming-taping code (Digit 14)
- Terminal code (Digit 13)
- Voltage code (ex. 6.3V:6R3, 35V:350, 50V:500) (Digit 12)
- Series code (Digit 11)
- Category (Digit 10)

Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

5mm height, 85°C

SRE Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA rms/ 85°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA rms/ 85°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|--------------------------------------------|--------------------|----------|----------|--------------------|------|--------------------------------------------|--------------------|
| 4        | 33       | 4X5                | 0.35 | 23                                         | ESRE4R0E□□330MD05D | 35       | 2.2      | 4X5                | 0.12 | 8.3                                        | ESRE350E□□2R2MD05D |
|          | 10       | 4X5                | 0.24 | 12                                         | ESRE6R3E□□100MD05D |          | 3.3      | 4X5                | 0.12 | 11                                         | ESRE350E□□3R3MD05D |
|          | 15       | 4X5                | 0.24 | 17                                         | ESRE6R3E□□150MD05D |          | 4.7      | 4X5                | 0.12 | 15                                         | ESRE350E□□4R7MD05D |
|          | 22       | 4X5                | 0.24 | 23                                         | ESRE6R3E□□220MD05D |          | 6.8      | 5X5                | 0.12 | 20                                         | ESRE350E□□6R8ME05D |
|          | 47       | 5X5                | 0.24 | 38                                         | ESRE6R3E□□470ME05D |          | 10       | 5X5                | 0.12 | 25                                         | ESRE350E□□100ME05D |
| 6.3      | 100      | 6.3X5              | 0.24 | 60                                         | ESRE6R3E□□101MF05D |          | 15       | 6.3X5              | 0.12 | 33                                         | ESRE350E□□150MF05D |
|          | 6.8      | 4X5                | 0.20 | 11                                         | ESRE100E□□6R8MD05D |          | 22       | 6.3X5              | 0.12 | 40                                         | ESRE350E□□220MF05D |
|          | 15       | 4X5                | 0.20 | 20                                         | ESRE100E□□150MD05D | 50       | 0.10     | 4X5                | 0.10 | 1.3                                        | ESRE500E□□R10MD05D |
|          | 33       | 5X5                | 0.20 | 35                                         | ESRE100E□□330ME05D |          | 0.15     | 4X5                | 0.10 | 2.0                                        | ESRE500E□□R15MD05D |
|          | 68       | 6.3X5              | 0.20 | 54                                         | ESRE100E□□680MF05D |          | 0.22     | 4X5                | 0.10 | 2.9                                        | ESRE500E□□R22MD05D |
| 10       | 4.7      | 4X5                | 0.16 | 10                                         | ESRE160E□□4R7MD05D |          | 0.33     | 4X5                | 0.10 | 3.5                                        | ESRE500E□□R33MD05D |
|          | 6.8      | 4X5                | 0.16 | 14                                         | ESRE160E□□6R8MD05D |          | 0.47     | 4X5                | 0.10 | 4.2                                        | ESRE500E□□R47MD05D |
|          | 10       | 4X5                | 0.16 | 17                                         | ESRE160E□□100MD05D |          | 0.68     | 4X5                | 0.10 | 5.1                                        | ESRE500E□□R68MD05D |
|          | 15       | 5X5                | 0.16 | 26                                         | ESRE160E□□150ME05D |          | 1.0      | 4X5                | 0.10 | 6.2                                        | ESRE500E□□R0MD05D  |
|          | 22       | 5X5                | 0.16 | 32                                         | ESRE160E□□220ME05D |          | 1.5      | 4X5                | 0.10 | 7.5                                        | ESRE500E□□R15MD05D |
| 16       | 47       | 6.3X5              | 0.16 | 50                                         | ESRE160E□□470MF05D |          | 2.2      | 4X5                | 0.10 | 10                                         | ESRE500E□□R22MD05D |
|          | 3.3      | 4X5                | 0.14 | 9.3                                        | ESRE250E□□3R3MD05D |          | 3.3      | 4X5                | 0.10 | 14                                         | ESRE500E□□3R3MD05D |
|          | 4.7      | 4X5                | 0.14 | 12                                         | ESRE250E□□4R7MD05D |          | 4.7      | 5X5                | 0.10 | 19                                         | ESRE500E□□4R7ME05D |
|          | 6.8      | 4X5                | 0.14 | 16                                         | ESRE250E□□6R8MD05D |          | 6.8      | 6.3X5              | 0.10 | 24                                         | ESRE500E□□6R8MF05D |
|          | 33       | 6.3X5              | 0.14 | 45                                         | ESRE250E□□330MF05D |          | 10       | 6.3X5              | 0.10 | 29                                         | ESRE500E□□100MF05D |

□□ : Lead forming / Taping code

Note : □ had been unified to φ4X5.

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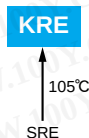


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

5mm height, 105°C

## KRE Series

- 5mm height
- Endurance : 1,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

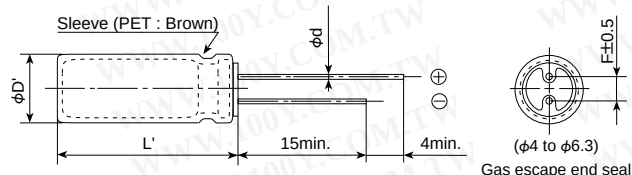


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                               |                                      |      |      |      |      |                       |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|-----------------------|
| Category                                               | Temperature Range                                                                                                                                             |                                      |      |      |      |      |                       |
| Temperature Range                                      | -55 to +105°C                                                                                                                                                 |                                      |      |      |      |      |                       |
| Rated Voltage Range                                    | 6.3 to 50V <sub>dc</sub>                                                                                                                                      |                                      |      |      |      |      |                       |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                     |                                      |      |      |      |      |                       |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes) |                                      |      |      |      |      |                       |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V                   |
|                                                        | tanδ (Max.)                                                                                                                                                   | 0.27                                 | 0.23 | 0.19 | 0.15 | 0.13 | 0.11 (at 20°C, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V                   |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                             | 3                                    | 3    | 2    | 2    | 2    | 2                     |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                             | 9                                    | 7    | 5    | 3    | 3    | 3 (at 120Hz)          |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 105°C.         |                                      |      |      |      |      |                       |
|                                                        | φD (mm)                                                                                                                                                       | φ4 to φ6.3                           |      |      |      |      |                       |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |                       |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |                       |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |                       |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.  |                                      |      |      |      |      |                       |
|                                                        | φD                                                                                                                                                            | φ4 to φ6.3                           |      |      |      |      |                       |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |                       |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |                       |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |                       |

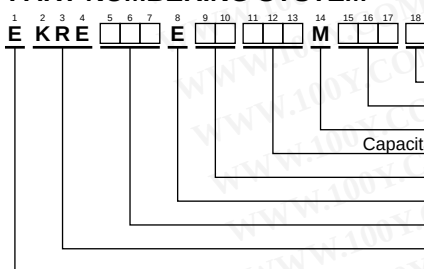
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| φD  | 4          | 5    | 6.3  |
|-----|------------|------|------|
| φd  | 0.45       | 0.45 | 0.45 |
| F   | 1.5        | 2.0  | 2.5  |
| φD' | φD+0.5max. |      |      |
| L'  | L+1.0max.  |      |      |

## ◆ PART NUMBERING SYSTEM



Supplement code  
Size code  
Capacitance tolerance code  
Capacitance code (ex. 0.1μF:R10, 10μF:100, 100μF:101)  
Lead forming-taping code  
Terminal code  
Voltage code (ex. 6.3V:6R3, 35V:350, 50V:500)  
Series code  
Category

Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

5mm height, 105°C

KRE Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|--------------------------------------------|--------------------|----------|----------|--------------------|------|--------------------------------------------|--------------------|
| 6.3      | 10       | 4×5                | 0.27 | 12                                         | EKRE6R3E□□100MD05D | 35       | 2.2      | 4×5                | 0.13 | 7.7                                        | EKRE350E□□2R2MD05D |
|          | 15       | 4×5                | 0.27 | 16                                         | EKRE6R3E□□150MD05D |          | 3.3      | 4×5                | 0.13 | 11                                         | EKRE350E□□3R3MD05D |
|          | 22       | 4×5                | 0.27 | 21                                         | EKRE6R3E□□220MD05D |          | 4.7      | 4×5                | 0.13 | 15                                         | EKRE350E□□4R7MD05D |
|          | 47       | 5×5                | 0.27 | 36                                         | EKRE6R3E□□470ME05D |          | 6.8      | 5×5                | 0.13 | 20                                         | EKRE350E□□6R8ME05D |
|          | 100      | 6.3×5              | 0.27 | 56                                         | EKRE6R3E□□101MF05D |          | 10       | 5×5                | 0.13 | 25                                         | EKRE350E□□100ME05D |
| 10       | 6.8      | 4×5                | 0.23 | 11                                         | EKRE100E□□6R8MD05D | 50       | 15       | 6.3×5              | 0.13 | 33                                         | EKRE350E□□150MF05D |
|          | 15       | 4×5                | 0.23 | 20                                         | EKRE100E□□150MD05D |          | 22       | 6.3×5              | 0.13 | 40                                         | EKRE350E□□220MF05D |
|          | 33       | 5×5                | 0.23 | 34                                         | EKRE100E□□330ME05D |          | 0.10     | 4×5                | 0.11 | 1.3                                        | EKRE500E□□R10MD05D |
|          | 68       | 6.3×5              | 0.23 | 52                                         | EKRE100E□□680MF05D |          | 0.15     | 4×5                | 0.11 | 2.0                                        | EKRE500E□□R15MD05D |
| 16       | 4.7      | 4×5                | 0.19 | 9.4                                        | EKRE160E□□4R7MD05D |          | 0.22     | 4×5                | 0.11 | 2.6                                        | EKRE500E□□R22MD05D |
|          | 6.8      | 4×5                | 0.19 | 13                                         | EKRE160E□□6R8MD05D |          | 0.33     | 4×5                | 0.11 | 3.2                                        | EKRE500E□□R33MD05D |
|          | 10       | 4×5                | 0.19 | 16                                         | EKRE160E□□100MD05D |          | 0.47     | 4×5                | 0.11 | 3.8                                        | EKRE500E□□R47MD05D |
|          | 15       | 5×5                | 0.19 | 25                                         | EKRE160E□□150ME05D |          | 0.68     | 4×5                | 0.11 | 4.6                                        | EKRE500E□□R68MD05D |
|          | 22       | 5×5                | 0.19 | 30                                         | EKRE160E□□220ME05D |          | 1.0      | 4×5                | 0.11 | 5.6                                        | EKRE500E□□1R0MD05D |
|          | 47       | 6.3×5              | 0.19 | 48                                         | EKRE160E□□470MF05D |          | 1.5      | 4×5                | 0.11 | 6.9                                        | EKRE500E□□1R5MD05D |
| 25       | 3.3      | 4×5                | 0.15 | 8.8                                        | EKRE250E□□3R3MD05D |          | 2.2      | 4×5                | 0.11 | 10                                         | EKRE500E□□2R2MD05D |
|          | 4.7      | 4×5                | 0.15 | 12                                         | EKRE250E□□4R7MD05D |          | 3.3      | 4×5                | 0.11 | 14                                         | EKRE500E□□3R3MD05D |
|          | 6.8      | 4×5                | 0.15 | 16                                         | EKRE250E□□6R8MD05D |          | 4.7      | 5×5                | 0.11 | 19                                         | EKRE500E□□4R7ME05D |
|          | 33       | 6.3×5              | 0.15 | 45                                         | EKRE250E□□330MF05D |          | 6.8      | 6.3×5              | 0.11 | 24                                         | EKRE500E□□6R8MF05D |
|          |          |                    |      |                                            |                    |          | 10       | 6.3×5              | 0.11 | 29                                         | EKRE500E□□100MF05D |

□□ : Lead forming / Taping code

Note : □ had been unified to φ4×5.

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

7mm height, 85°C

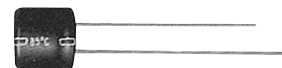
## SRA Series

- 7mm height
- Endurance : 1,000 hours at 85°C
- Non solvent-proof type
- RoHS Compliant

SRG

Downsized

SRA

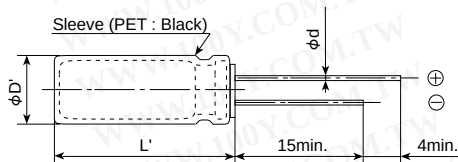
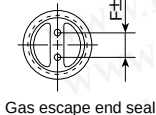


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                               |                                      |      |      |      |      |      |      |      |                  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|------|------|------------------|
| Category                                               | -40 to +85°C                                                                                                                                                  |                                      |      |      |      |      |      |      |      |                  |
| Temperature Range                                      |                                                                                                                                                               |                                      |      |      |      |      |      |      |      |                  |
| Rated Voltage Range                                    | 4 to 63V <sub>dc</sub>                                                                                                                                        |                                      |      |      |      |      |      |      |      |                  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                     |                                      |      |      |      |      |      |      |      |                  |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes) |                                      |      |      |      |      |      |      |      |                  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V  | 63V  | (at 20°C, 120Hz) |
|                                                        | tanδ (Max.)                                                                                                                                                   | 0.35                                 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 |                  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V  | 63V  | (at 120Hz)       |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                             | 4                                    | 4    | 3    | 2    | 2    | 2    | 2    | 2    |                  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                             | 10                                   | 10   | 8    | 6    | 4    | 3    | 3    | 3    |                  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 85°C.          |                                      |      |      |      |      |      |      |      |                  |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |      |      |      |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |      |      |      |                  |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |      |      |      |                  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 85°C without voltage applied.   |                                      |      |      |      |      |      |      |      |                  |
|                                                        | Capacitance change                                                                                                                                            | ≤±20% of the initial value           |      |      |      |      |      |      |      |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      |      |      |      |      |                  |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      |      |      |      |      |                  |

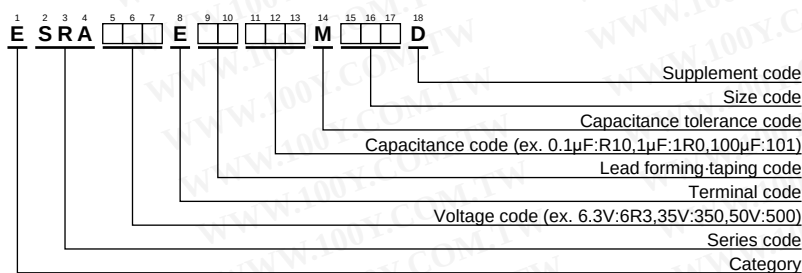
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| φD  | 4          | 5    | 6.3  | 8    |
|-----|------------|------|------|------|
| φd  | 0.45       | 0.45 | 0.45 | 0.45 |
| F   | 1.5        | 2.0  | 2.5  | 3.5  |
| φD' | φD+0.5max. |      |      |      |
| L'  | L+1.0max.  |      |      |      |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

7mm height, 85°C

SRA Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|------------------------------------------------------|--------------------|----------|----------|--------------------|------|------------------------------------------------------|--------------------|
| 4        | 33       | 4×7                | 0.35 | 26                                                   | ESRA4R0E□□330MD07D | 50       | 0.10     | 4×7                | 0.10 | 1.3                                                  | ESRA500E□□R10MD07D |
|          | 47       | 4×7                | 0.35 | 34                                                   | ESRA4R0E□□470MD07D |          | 0.22     | 4×7                | 0.10 | 2.9                                                  | ESRA500E□□R22MD07D |
|          | 100      | 5×7                | 0.35 | 61                                                   | ESRA4R0E□□101ME07D |          | 0.33     | 4×7                | 0.10 | 3.5                                                  | ESRA500E□□R33MD07D |
|          | 220      | 6.3×7              | 0.35 | 95                                                   | ESRA4R0E□□221MF07D |          | 0.47     | 4×7                | 0.10 | 5.0                                                  | ESRA500E□□R47MD07D |
|          | 470      | 8×7                | 0.35 | 154                                                  | ESRA4R0E□□471MH07D |          | 1.0      | 4×7                | 0.10 | 10                                                   | ESRA500E□□R10MD07D |
| 6.3      | 22       | 4×7                | 0.24 | 31                                                   | ESRA6R3E□□220MD07D |          | 2.2      | 4×7                | 0.10 | 15                                                   | ESRA500E□□R22MD07D |
|          | 47       | 5×7                | 0.24 | 47                                                   | ESRA6R3E□□470ME07D |          | 3.3      | 4×7                | 0.10 | 18                                                   | ESRA500E□□R33MD07D |
|          | 330      | 8×7                | 0.24 | 156                                                  | ESRA6R3E□□331MH07D |          | 4.7      | 5×7                | 0.10 | 23                                                   | ESRA500E□□R47ME07D |
| 10       | 33       | 5×7                | 0.20 | 43                                                   | ESRA100E□□330ME07D |          | 10       | 6.3×7              | 0.10 | 34                                                   | ESRA500E□□100MF07D |
|          | 100      | 6.3×7              | 0.20 | 80                                                   | ESRA100E□□101MF07D |          | 22       | 6.3×7              | 0.10 | 57                                                   | ESRA500E□□220MF07D |
|          | 220      | 8×7                | 0.20 | 140                                                  | ESRA100E□□221MH07D |          | 33       | 8×7                | 0.10 | 76                                                   | ESRA500E□□330MH07D |
| 16       | 10       | 4×7                | 0.16 | 25                                                   | ESRA160E□□100MD07D | 63       | 0.10     | 4×7                | 0.08 | 1.3                                                  | ESRA630E□□R10MD07D |
|          | 22       | 5×7                | 0.16 | 39                                                   | ESRA160E□□220ME07D |          | 0.22     | 4×7                | 0.08 | 2.9                                                  | ESRA630E□□R22MD07D |
|          | 47       | 6.3×7              | 0.16 | 59                                                   | ESRA160E□□470MF07D |          | 0.33     | 4×7                | 0.08 | 4.4                                                  | ESRA630E□□R33MD07D |
|          | 100      | 6.3×7              | 0.16 | 97                                                   | ESRA160E□□101MF07D |          | 0.47     | 4×7                | 0.08 | 7.9                                                  | ESRA630E□□R47MD07D |
| 25       | 33       | 6.3×7              | 0.14 | 53                                                   | ESRA250E□□330MF07D |          | 1.0      | 4×7                | 0.08 | 11                                                   | ESRA630E□□R10MD07D |
|          | 47       | 6.3×7              | 0.14 | 71                                                   | ESRA250E□□470MF07D |          | 2.2      | 4×7                | 0.08 | 17                                                   | ESRA630E□□R22MD07D |
| 35       | 4.7      | 4×7                | 0.12 | 20                                                   | ESRA350E□□4R7MD07D |          | 3.3      | 5×7                | 0.08 | 21                                                   | ESRA630E□□R33ME07D |
|          | 10       | 5×7                | 0.12 | 30                                                   | ESRA350E□□100ME07D |          | 4.7      | 6.3×7              | 0.08 | 26                                                   | ESRA630E□□R47MF07D |
|          | 22       | 6.3×7              | 0.12 | 47                                                   | ESRA350E□□220MF07D |          | 10       | 6.3×7              | 0.08 | 47                                                   | ESRA630E□□100MF07D |
|          | 33       | 6.3×7              | 0.12 | 64                                                   | ESRA350E□□330MF07D |          |          |                    |      |                                                      |                    |
|          | 47       | 8×7                | 0.12 | 83                                                   | ESRA350E□□470MH07D |          |          |                    |      |                                                      |                    |

□□ : Lead forming / Taping code

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

7mm height, 105°C

# KMA Series

- 7mm height
- Endurance : 1,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

KMA

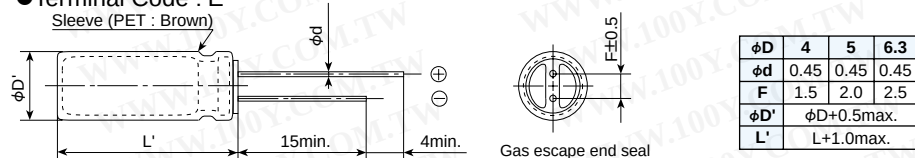
105°C  
SRA

## ◆ SPECIFICATIONS

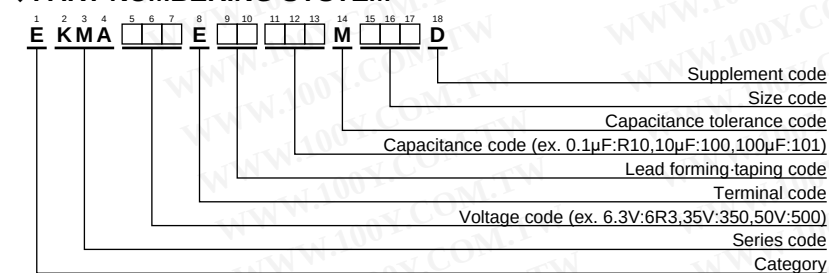
| Items                                                  | Characteristics                                                                                                                                                |                                      |      |      |      |      |                            |      |      |                  |  |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|----------------------------|------|------|------------------|--|
| Category                                               | -55 to +105°C                                                                                                                                                  |                                      |      |      |      |      |                            |      |      |                  |  |
| Temperature Range                                      |                                                                                                                                                                |                                      |      |      |      |      |                            |      |      |                  |  |
| Rated Voltage Range                                    | 4 to 63V <sub>dc</sub>                                                                                                                                         |                                      |      |      |      |      |                            |      |      |                  |  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                      |                                      |      |      |      |      |                            |      |      |                  |  |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)  |                                      |      |      |      |      |                            |      |      |                  |  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                               | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V                        | 50V  | 63V  | (at 20°C, 120Hz) |  |
|                                                        | tanδ (Max.)                                                                                                                                                    | 0.35                                 | 0.22 | 0.19 | 0.16 | 0.14 | 0.12                       | 0.10 | 0.08 |                  |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                               | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V                        | 50V  | 63V  | (at 120Hz)       |  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                              | 4                                    | 3    | 2    | 2    | 2    | 2                          | 2    | 2    |                  |  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                              | 10                                   | 6    | 5    | 3    | 3    | 3                          | 3    | 3    |                  |  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 105°C.          |                                      |      |      |      |      |                            |      |      |                  |  |
|                                                        | Rated voltage                                                                                                                                                  | 4 to 16V <sub>dc</sub>               |      |      |      |      | 25 to 63V <sub>dc</sub>    |      |      |                  |  |
|                                                        | Capacitance change                                                                                                                                             | ≤±25% of the initial value           |      |      |      |      | ≤±20% of the initial value |      |      |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                    | ≤200% of the initial specified value |      |      |      |      |                            |      |      |                  |  |
|                                                        | Leakage current                                                                                                                                                | ≤The initial specified value         |      |      |      |      |                            |      |      |                  |  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. |                                      |      |      |      |      |                            |      |      |                  |  |
|                                                        | Rated voltage                                                                                                                                                  | 4 to 16V <sub>dc</sub>               |      |      |      |      | 25 to 63V <sub>dc</sub>    |      |      |                  |  |
|                                                        | Capacitance change                                                                                                                                             | ≤±25% of the initial value           |      |      |      |      | ≤±20% of the initial value |      |      |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                    | ≤200% of the initial specified value |      |      |      |      |                            |      |      |                  |  |
|                                                        | Leakage current                                                                                                                                                | ≤The initial specified value         |      |      |      |      |                            |      |      |                  |  |

## ◆ DIMENSIONS [mm]

- Terminal Code : E



## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

7mm height, 105°C

KMA Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mAmps/ 105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mAmps/ 105°C,120Hz) | Part No.            |
|----------|----------|--------------------|------|-------------------------------------------|--------------------|----------|----------|--------------------|------|-------------------------------------------|---------------------|
| 4        | 33       | 4X7                | 0.35 | 26                                        | EKMA4R0E□□330MD07D | 50       | 0.10     | 4X7                | 0.10 | 1.3                                       | EKMA500E□□R10MD07D  |
|          | 47       | 4X7                | 0.35 | 34                                        | EKMA4R0E□□470MD07D |          | 0.15     | 4X7                | 0.10 | 2.0                                       | EKMA500E□□R15MD07D  |
|          | 100      | 5X7                | 0.35 | 61                                        | EKMA4R0E□□101ME07D |          | 0.22     | 4X7                | 0.10 | 2.9                                       | EKMA500E□□R22MD07D  |
|          | 220      | 6.3X7              | 0.35 | 95                                        | EKMA4R0E□□221MF07D |          | 0.33     | 4X7                | 0.10 | 3.5                                       | EKMA500E□□R33MD07D  |
| 6.3      | 22       | 4X7                | 0.22 | 31                                        | EKMA6R3E□□220MD07D |          | 0.47     | 4X7                | 0.10 | 5.0                                       | EKMA500E□□R47MD07D  |
|          | 47       | 5X7                | 0.22 | 47                                        | EKMA6R3E□□470ME07D |          | 0.68     | 4X7                | 0.10 | 7.1                                       | EKMA500E□□R68MD07D  |
| 10       | 15       | 4X7                | 0.19 | 28                                        | EKMA100E□□150MD07D |          | 1.0      | 4X7                | 0.10 | 10                                        | EKMA500E□□R10MD07D  |
|          | 33       | 5X7                | 0.19 | 43                                        | EKMA100E□□330ME07D |          | 1.5      | 4X7                | 0.10 | 12                                        | EKMA500E□□R15MD07D  |
|          | 68       | 6.3X7              | 0.19 | 63                                        | EKMA100E□□680MF07D |          | 2.2      | 4X7                | 0.10 | 15                                        | EKMA500E□□R22MD07D  |
|          | 100      | 6.3X7              | 0.19 | 80                                        | EKMA100E□□101MF07D |          | 3.3      | 4X7                | 0.10 | 18                                        | EKMA500E□□R33MD07D  |
| 16       | 6.8      | 4X7                | 0.16 | 20                                        | EKMA160E□□6R8MD07D |          | 4.7      | 5X7                | 0.10 | 23                                        | EKMA500E□□R47ME07D  |
|          | 10       | 4X7                | 0.16 | 25                                        | EKMA160E□□100MD07D |          | 6.8      | 6.3X7              | 0.10 | 28                                        | EKMA500E□□R68MF07D  |
|          | 15       | 5X7                | 0.16 | 31                                        | EKMA160E□□150ME07D |          | 10       | 6.3X7              | 0.10 | 34                                        | EKMA500E□□R100MF07D |
|          | 22       | 5X7                | 0.16 | 39                                        | EKMA160E□□220ME07D |          | 22       | 6.3X7              | 0.10 | 57                                        | EKMA500E□□R220MF07D |
|          | 47       | 6.3X7              | 0.16 | 59                                        | EKMA160E□□470MF07D | 63       | 0.10     | 4X7                | 0.08 | 1.3                                       | EKMA630E□□R10MD07D  |
| 25       | 100      | 6.3X7              | 0.16 | 97                                        | EKMA160E□□101MF07D |          | 0.15     | 4X7                | 0.08 | 1.9                                       | EKMA630E□□R15MD07D  |
|          | 33       | 6.3X7              | 0.14 | 53                                        | EKMA250E□□330MF07D |          | 0.22     | 4X7                | 0.08 | 2.9                                       | EKMA630E□□R22MD07D  |
| 35       | 47       | 6.3X7              | 0.14 | 71                                        | EKMA250E□□470MF07D |          | 0.33     | 4X7                | 0.08 | 4.4                                       | EKMA630E□□R33MD07D  |
|          | 4.7      | 4X7                | 0.12 | 20                                        | EKMA350E□□4R7MD07D |          | 0.47     | 4X7                | 0.08 | 7.9                                       | EKMA630E□□R47MD07D  |
|          | 6.8      | 5X7                | 0.12 | 24                                        | EKMA350E□□6R8ME07D |          | 0.68     | 4X7                | 0.08 | 9.2                                       | EKMA630E□□R68MD07D  |
|          | 10       | 5X7                | 0.12 | 30                                        | EKMA350E□□100ME07D |          | 1.0      | 4X7                | 0.08 | 11                                        | EKMA630E□□R10MD07D  |
| 35       | 15       | 6.3X7              | 0.12 | 37                                        | EKMA350E□□150MF07D |          | 1.5      | 4X7                | 0.08 | 13                                        | EKMA630E□□R15MD07D  |
|          | 22       | 6.3X7              | 0.12 | 47                                        | EKMA350E□□220MF07D |          | 2.2      | 4X7                | 0.08 | 17                                        | EKMA630E□□R22MD07D  |
|          | 33       | 6.3X7              | 0.12 | 64                                        | EKMA350E□□330MF07D |          | 3.3      | 5X7                | 0.08 | 21                                        | EKMA630E□□R33ME07D  |
|          |          |                    |      |                                           |                    |          | 4.7      | 6.3X7              | 0.08 | 26                                        | EKMA630E□□R47MF07D  |
|          |          |                    |      |                                           |                    |          | 10       | 6.3X7              | 0.08 | 43                                        | EKMA630E□□R100MF07D |

□□ : Lead forming / Taping code

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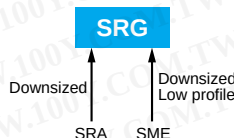


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low profile, 85°C

## SRG Series

- Low profile :  $\phi 4 \times 7\text{mm}$  to  $\phi 18 \times 25\text{mm}$
- Endurance : 1,000 to 2,000 hours at 85°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

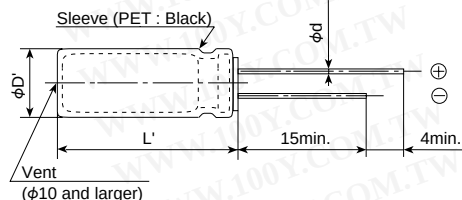


## ◆ SPECIFICATIONS

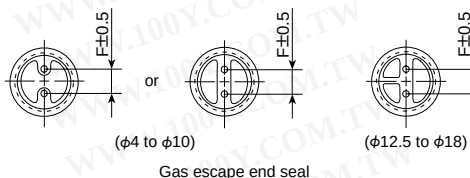
| Items                                                  | Characteristics                                                                                                                                                                       |                                      |      |      |      |      |      |              |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|--------------|
| Category                                               | Temperature Range                                                                                                                                                                     |                                      |      |      |      |      |      |              |
| Rated Voltage Range                                    | 4 to 50V <sub>dc</sub>                                                                                                                                                                |                                      |      |      |      |      |      |              |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                             |                                      |      |      |      |      |      |              |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                         |                                      |      |      |      |      |      |              |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                      | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V          |
|                                                        | tanδ (Max.)                                                                                                                                                                           | 0.38                                 | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12         |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.03 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                     |                                      |      |      |      |      |      |              |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                      | 4V                                   | 6.3V | 10V  | 16V  | 25V  | 35V  | 50V          |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                     | 6                                    | 5    | 4    | 3    | 2    | 2    | 2            |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                                                     | 12                                   | 12   | 10   | 8    | 5    | 4    | 3 (at 120Hz) |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours (1,000 hours for φ8 and smaller) at 85°C. |                                      |      |      |      |      |      |              |
|                                                        | Capacitance change                                                                                                                                                                    | ≤±20% of the initial value           |      |      |      |      |      |              |
|                                                        | D.F. (tanδ)                                                                                                                                                                           | ≤200% of the initial specified value |      |      |      |      |      |              |
|                                                        | Leakage current                                                                                                                                                                       | ≤The initial specified value         |      |      |      |      |      |              |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied.                         |                                      |      |      |      |      |      |              |
|                                                        | Capacitance change                                                                                                                                                                    | ≤±20% of the initial value           |      |      |      |      |      |              |
|                                                        | D.F. (tanδ)                                                                                                                                                                           | ≤200% of the initial specified value |      |      |      |      |      |              |
|                                                        | Leakage current                                                                                                                                                                       | ≤The initial specified value         |      |      |      |      |      |              |

## ◆ DIMENSIONS [mm]

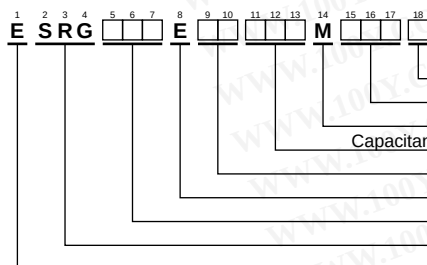
- Terminal Code : E



| φD  | 4                          | 5    | 6.3  | 8    | 10 & 12.5 | 16 & 18 |
|-----|----------------------------|------|------|------|-----------|---------|
| 7L  | 0.45                       | 0.45 | 0.45 | 0.45 | —         | —       |
| φd  | ≥ 9L                       | —    | 0.5  | 0.5  | 0.6       | 0.8     |
| F   | 1.5                        | 2.0  | 2.5  | 3.5  | 5.0       | 7.5     |
| φD' | φD+0.5max.                 |      |      |      |           |         |
| L'  | L+1.5max. (7L : L+1.0max.) |      |      |      |           |         |



## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low profile, 85°C

SRG Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case code<br>φD×L(mm) | tanδ | Rated ripple<br>current<br>(mA rms/<br>85°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case code<br>φD×L(mm) | tanδ | Rated ripple<br>current<br>(mA rms/<br>85°C, 120Hz) | Part No.           |
|----------|----------|-----------------------|------|-----------------------------------------------------|--------------------|----------|----------|-----------------------|------|-----------------------------------------------------|--------------------|
| 4        | 470      | 8×7                   | 0.38 | 154                                                 | ESRG4R0E□□471MH07D | 25       | 2,200    | 18×15                 | 0.19 | 1,360                                               | ESRG250E□□222MM15S |
| 6.3      | 47       | 4×7                   | 0.28 | 50                                                  | ESRG6R3E□□470MD07D | 25       | 3,300    | 18×20                 | 0.22 | 1,720                                               | ESRG250E□□332MM20S |
|          | 100      | 5×7                   | 0.28 | 87                                                  | ESRG6R3E□□101ME07D |          | 4,700    | 18×25                 | 0.25 | 2,070                                               | ESRG250E□□472MM25S |
|          | 220      | 6.3×7                 | 0.28 | 133                                                 | ESRG6R3E□□221MF07D |          | 10       | 4×7                   | 0.14 | 32                                                  | ESRG350E□□100MD07D |
|          | 330      | 6.3×9                 | 0.28 | 247                                                 | ESRG6R3E□□331MF09D | 35       | 22       | 5×7                   | 0.14 | 57                                                  | ESRG350E□□220ME07D |
|          | 330      | 8×7                   | 0.28 | 191                                                 | ESRG6R3E□□331MH07D |          | 33       | 5×9                   | 0.14 | 94                                                  | ESRG350E□□330ME09D |
|          | 1,000    | 10×9                  | 0.28 | 505                                                 | ESRG6R3E□□102MJ09S |          | 33       | 6.3×7                 | 0.14 | 73                                                  | ESRG350E□□330MF07D |
|          | 4,700    | 16×15                 | 0.37 | 1,410                                               | ESRG6R3E□□472ML15S |          | 47       | 8×7                   | 0.14 | 101                                                 | ESRG350E□□470MH07D |
|          | 6,800    | 18×15                 | 0.43 | 1,660                                               | ESRG6R3E□□682MM15S |          | 100      | 8×9                   | 0.14 | 220                                                 | ESRG350E□□101MH09D |
|          | 10,000   | 18×20                 | 0.55 | 2,020                                               | ESRG6R3E□□103MM20S |          | 220      | 10×9                  | 0.14 | 335                                                 | ESRG350E□□221MJ09S |
|          |          |                       |      |                                                     |                    |          | 330      | 10×12.5               | 0.14 | 475                                                 | ESRG350E□□330MF07D |
|          |          |                       |      |                                                     |                    |          | 470      | 12.5×13               | 0.14 | 585                                                 | ESRG350E□□471MK13S |
| 10       | 33       | 4×7                   | 0.24 | 46                                                  | ESRG100E□□330MD07D |          | 1,000    | 16×15                 | 0.14 | 1,010                                               | ESRG350E□□102ML15S |
|          | 100      | 5×9                   | 0.24 | 132                                                 | ESRG100E□□101ME09D |          | 2,200    | 18×20                 | 0.17 | 1,560                                               | ESRG350E□□222MM20S |
|          | 220      | 6.3×9                 | 0.24 | 218                                                 | ESRG100E□□221MF09D | 50       | 0.10     | 4×7                   | 0.12 | 1.3                                                 | ESRG500E□□R10MD07D |
|          | 220      | 8×7                   | 0.24 | 171                                                 | ESRG100E□□221MH07D |          | 0.22     | 4×7                   | 0.12 | 2.9                                                 | ESRG500E□□R22MD07D |
|          | 470      | 8×9                   | 0.24 | 385                                                 | ESRG100E□□471MH09D |          | 0.33     | 4×7                   | 0.12 | 3.5                                                 | ESRG500E□□R33MD07D |
|          | 1,000    | 10×12.5               | 0.24 | 625                                                 | ESRG100E□□102MJC5S |          | 0.47     | 4×7                   | 0.12 | 5.0                                                 | ESRG500E□□R47MD07D |
|          | 2,200    | 12.5×15               | 0.27 | 970                                                 | ESRG100E□□222MK15S |          | 1.0      | 4×7                   | 0.12 | 10                                                  | ESRG500E□□1R0MD07D |
|          | 3,300    | 16×15                 | 0.30 | 1,310                                               | ESRG100E□□332ML15S |          | 1.0      | 5×9                   | 0.12 | 13                                                  | ESRG500E□□1R0ME09D |
|          | 4,700    | 18×15                 | 0.33 | 1,560                                               | ESRG100E□□472MM15S |          | 2.2      | 4×7                   | 0.12 | 15                                                  | ESRG500E□□2R2MD07D |
|          | 6,800    | 18×20                 | 0.39 | 1,870                                               | ESRG100E□□682MM20S |          | 2.2      | 5×9                   | 0.12 | 26                                                  | ESRG500E□□2R2ME09D |
|          | 10,000   | 18×25                 | 0.51 | 2,370                                               | ESRG100E□□103MM25S |          | 3.3      | 4×7                   | 0.12 | 19                                                  | ESRG500E□□3R3MD07D |
|          |          |                       |      |                                                     |                    |          | 3.3      | 5×9                   | 0.12 | 32                                                  | ESRG500E□□3R3ME09D |
| 16       | 22       | 4×7                   | 0.20 | 42                                                  | ESRG160E□□220MD07D |          | 4.7      | 4×7                   | 0.12 | 24                                                  | ESRG500E□□4R7MD07D |
|          | 47       | 5×7                   | 0.20 | 73                                                  | ESRG160E□□470ME07D |          | 4.7      | 5×9                   | 0.12 | 38                                                  | ESRG500E□□4R7ME09D |
|          | 100      | 6.3×7                 | 0.20 | 110                                                 | ESRG160E□□101MF07D |          | 10       | 5×7                   | 0.12 | 42                                                  | ESRG500E□□100ME07D |
|          | 220      | 8×9                   | 0.20 | 290                                                 | ESRG160E□□221MH09D |          | 10       | 5×9                   | 0.12 | 64                                                  | ESRG500E□□100ME09D |
|          | 330      | 8×9                   | 0.20 | 355                                                 | ESRG160E□□331MH09D |          | 22       | 5×9                   | 0.12 | 86                                                  | ESRG500E□□220ME09D |
|          | 470      | 10×9                  | 0.20 | 410                                                 | ESRG160E□□471MJ09S |          | 22       | 6.3×7                 | 0.12 | 64                                                  | ESRG500E□□220MF07D |
|          | 1,000    | 12.5×13               | 0.20 | 715                                                 | ESRG160E□□102MK13S |          | 33       | 6.3×9                 | 0.12 | 113                                                 | ESRG500E□□330MF09D |
|          | 2,200    | 16×15                 | 0.23 | 1,160                                               | ESRG160E□□222ML15S |          | 33       | 8×7                   | 0.12 | 93                                                  | ESRG500E□□330MH07D |
|          | 3,300    | 18×15                 | 0.26 | 1,460                                               | ESRG160E□□332MM15S |          | 47       | 6.3×9                 | 0.12 | 135                                                 | ESRG500E□□470MF09D |
|          | 4,700    | 18×20                 | 0.29 | 1,770                                               | ESRG160E□□472MM20S |          | 100      | 10×9                  | 0.12 | 240                                                 | ESRG500E□□101MJ09S |
| 25       | 6,800    | 18×25                 | 0.35 | 2,170                                               | ESRG160E□□682MM25S |          | 220      | 10×12.5               | 0.12 | 415                                                 | ESRG500E□□221MJC5S |
|          | 33       | 5×7                   | 0.16 | 66                                                  | ESRG250E□□330ME07D |          | 330      | 12.5×13               | 0.12 | 525                                                 | ESRG500E□□331MK13S |
|          | 47       | 5×9                   | 0.16 | 105                                                 | ESRG250E□□470ME09D |          | 470      | 16×15                 | 0.12 | 745                                                 | ESRG500E□□471ML15S |
|          | 100      | 6.3×7                 | 0.16 | 80                                                  | ESRG250E□□470MF07D |          | 1,000    | 18×20                 | 0.12 | 1,160                                               | ESRG500E□□102MM20S |
|          | 100      | 6.3×9                 | 0.16 | 172                                                 | ESRG250E□□101MF09D |          |          |                       |      |                                                     |                    |
|          | 330      | 10×9                  | 0.16 | 380                                                 | ESRG250E□□331MJ09S |          |          |                       |      |                                                     |                    |
|          | 470      | 10×12.5               | 0.16 | 525                                                 | ESRG250E□□471MJC5S |          |          |                       |      |                                                     |                    |
|          | 1,000    | 12.5×15               | 0.16 | 830                                                 | ESRG250E□□102MK15S |          |          |                       |      |                                                     |                    |

□□ : Lead forming / Taping code

## ◆RATED RIPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|------|------|------|------|------|------|
| to 4.7           | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 47         | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000     | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to         | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

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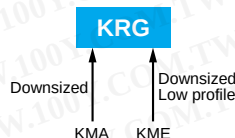


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low profile, 105°C

# KRG Series

- Low profile :  $\phi 4 \times 7 \text{ mm}$  to  $\phi 18 \times 25 \text{ mm}$
- Endurance : 1,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

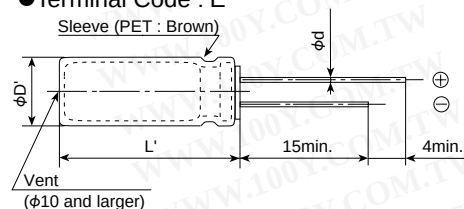
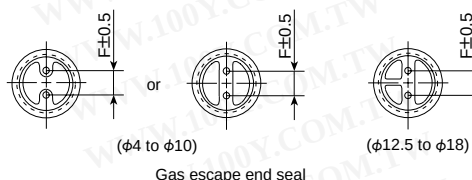


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                               |                                      |      |      |      |                                      |      |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|--------------------------------------|------|
| Category Temperature Range                             | -55 to +105°C                                                                                                                                                 |                                      |      |      |      |                                      |      |
| Rated Voltage Range                                    | 6.3 to 50V <sub>dc</sub>                                                                                                                                      |                                      |      |      |      |                                      |      |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                     |                                      |      |      |      |                                      |      |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes) |                                      |      |      |      |                                      |      |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 6.3V                                 | 10V  | 16V  | 25V  | 35V                                  | 50V  |
|                                                        | tanδ (Max.)                                                                                                                                                   | 0.28                                 | 0.24 | 0.20 | 0.16 | 0.14                                 | 0.12 |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.03 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                             |                                      |      |      |      |                                      |      |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 6.3V                                 | 10V  | 16V  | 25V  | 35V                                  | 50V  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                             | 5                                    | 4    | 3    | 2    | 2                                    | 2    |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                             | 10                                   | 8    | 6    | 4    | 3                                    | 3    |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 105°C.         |                                      |      |      |      |                                      |      |
|                                                        | Rated voltage                                                                                                                                                 | 6.3 to 16V <sub>dc</sub>             |      |      |      | 25 to 50V <sub>dc</sub>              |      |
|                                                        | Capacitance change                                                                                                                                            | ≤±25% of the initial value           |      |      |      | ≤±20% of the initial value           |      |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      | ≤200% of the initial specified value |      |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      | ≤The initial specified value         |      |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.  |                                      |      |      |      |                                      |      |
|                                                        | Rated voltage                                                                                                                                                 | 6.3 to 16V <sub>dc</sub>             |      |      |      | 25 to 50V <sub>dc</sub>              |      |
|                                                        | Capacitance change                                                                                                                                            | ≤±25% of the initial value           |      |      |      | ≤±20% of the initial value           |      |
|                                                        | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value |      |      |      | ≤200% of the initial specified value |      |
|                                                        | Leakage current                                                                                                                                               | ≤The initial specified value         |      |      |      | ≤The initial specified value         |      |

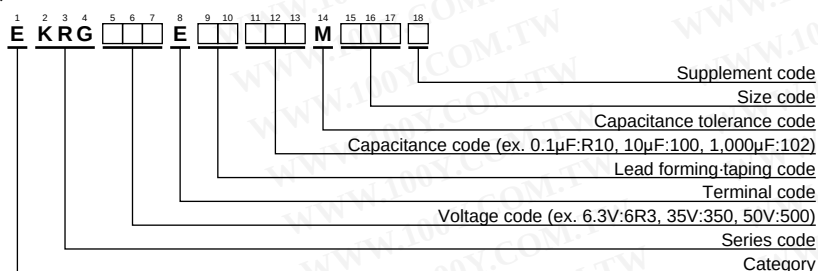
### ◆ DIMENSIONS [mm]

- Terminal Code : E



|           |           |                                      |      |      |     |           |         |
|-----------|-----------|--------------------------------------|------|------|-----|-----------|---------|
| $\phi D$  |           | 4                                    | 5    | 6.3  | 8   | 10 & 12.5 | 16 & 18 |
| $\phi d$  | 7L        | 0.45                                 | 0.45 | 0.45 | —   | —         | —       |
|           | $\geq 9L$ | —                                    | 0.5  | 0.5  | 0.6 | 0.6       | 0.8     |
| F         |           | 1.5                                  | 2.0  | 2.5  | 3.5 | 5.0       | 7.5     |
| $\phi D'$ |           | $\phi D + 0.5 \max.$                 |      |      |     |           |         |
| L'        |           | $L + 1.5 \max. (7L : L + 1.0 \max.)$ |      |      |     |           |         |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low profile, 105°C

KRG Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|--------------------------------------------|--------------------|----------|----------|--------------------|------|--------------------------------------------|--------------------|
| 6.3      | 47       | 5×7                | 0.28 | 50                                         | EKRG6R3E□□470ME07D | 25       | 2,200    | 18×15              | 0.19 | 970                                        | EKRG250E□□222MM15S |
|          | 330      | 6.3×9              | 0.28 | 175                                        | EKRG6R3E□□331MF09D |          | 3,300    | 18×20              | 0.22 | 1,220                                      | EKRG250E□□332MM20S |
|          | 1,000    | 10×9               | 0.28 | 365                                        | EKRG6R3E□□102MJ09S |          | 4,700    | 18×25              | 0.25 | 1,470                                      | EKRG250E□□472MM25S |
|          | 4,700    | 16×15              | 0.37 | 1,010                                      | EKRG6R3E□□472ML15S | 35       | 10       | 5×7                | 0.14 | 36                                         | EKRG350E□□100ME07D |
|          | 6,800    | 18×15              | 0.43 | 1,190                                      | EKRG6R3E□□682MM15S |          | 22       | 6.3×7              | 0.14 | 57                                         | EKRG350E□□220MF07D |
|          | 10,000   | 18×20              | 0.55 | 1,440                                      | EKRG6R3E□□103MM20S |          | 33       | 5×9                | 0.14 | 67                                         | EKRG350E□□330ME09D |
| 10       | 22       | 4×7                | 0.24 | 35                                         | EKRG100E□□220MD07D |          | 33       | 6.3×7              | 0.14 | 64                                         | EKRG350E□□330MF07D |
|          | 100      | 5×9                | 0.24 | 93                                         | EKRG100E□□101ME09D |          | 100      | 8×9                | 0.14 | 155                                        | EKRG350E□□101MH09D |
|          | 100      | 6.3×7              | 0.24 | 80                                         | EKRG100E□□101MF07D |          | 220      | 10×9               | 0.14 | 235                                        | EKRG350E□□221MJ09S |
|          | 220      | 6.3×9              | 0.24 | 154                                        | EKRG100E□□221MF09D |          | 330      | 10×12.5            | 0.14 | 340                                        | EKRG350E□□331MJC5S |
|          | 470      | 8×9                | 0.24 | 272                                        | EKRG100E□□471MH09D |          | 470      | 12.5×13            | 0.14 | 415                                        | EKRG350E□□471MK13S |
|          | 1,000    | 10×12.5            | 0.24 | 445                                        | EKRG100E□□102MJC5S |          | 1,000    | 16×15              | 0.14 | 720                                        | EKRG350E□□102ML15S |
|          | 2,200    | 12.5×15            | 0.27 | 690                                        | EKRG100E□□222MK15S |          | 2,200    | 18×20              | 0.17 | 1,110                                      | EKRG350E□□222MM20S |
|          | 3,300    | 16×15              | 0.30 | 940                                        | EKRG100E□□332ML15S | 50       | 0.10     | 4×7                | 0.12 | 1.3                                        | EKRG500E□□R10MD07D |
|          | 4,700    | 18×15              | 0.33 | 1,120                                      | EKRG100E□□472MM15S |          | 0.22     | 4×7                | 0.12 | 2.9                                        | EKRG500E□□R22MD07D |
|          | 6,800    | 18×20              | 0.39 | 1,330                                      | EKRG100E□□682MM20S |          | 0.33     | 4×7                | 0.12 | 3.5                                        | EKRG500E□□R33MD07D |
|          | 10,000   | 18×25              | 0.51 | 1,700                                      | EKRG100E□□103MM25S |          | 0.47     | 4×7                | 0.12 | 5.0                                        | EKRG500E□□R47MD07D |
| 16       | 33       | 5×7                | 0.20 | 53                                         | EKRG160E□□330ME07D |          | 1.0      | 4×7                | 0.12 | 10                                         | EKRG500E□□R10MD07D |
|          | 47       | 6.3×7              | 0.20 | 68                                         | EKRG160E□□470MF07D |          | 1.0      | 5×9                | 0.12 | 12                                         | EKRG500E□□R10ME09D |
|          | 100      | 6.3×7              | 0.20 | 97                                         | EKRG160E□□101MF07D |          | 2.2      | 4×7                | 0.12 | 15                                         | EKRG500E□□R22MD07D |
|          | 220      | 8×9                | 0.20 | 205                                        | EKRG160E□□221MH09D |          | 2.2      | 5×9                | 0.12 | 18                                         | EKRG500E□□R22ME09D |
|          | 330      | 8×9                | 0.20 | 251                                        | EKRG160E□□331MH09D |          | 3.3      | 4×7                | 0.12 | 18                                         | EKRG500E□□R33MD07D |
|          | 470      | 10×9               | 0.20 | 290                                        | EKRG160E□□471MJ09S |          | 3.3      | 5×9                | 0.12 | 22                                         | EKRG500E□□R33ME09D |
|          | 1,000    | 12.5×13            | 0.20 | 515                                        | EKRG160E□□102MK13S |          | 4.7      | 4×7                | 0.12 | 25                                         | EKRG500E□□R47MD07D |
|          | 2,200    | 16×15              | 0.23 | 830                                        | EKRG160E□□222ML15S |          | 4.7      | 5×9                | 0.12 | 27                                         | EKRG500E□□R47ME09D |
|          | 3,300    | 18×15              | 0.26 | 1,050                                      | EKRG160E□□332MM15S |          | 10       | 5×9                | 0.12 | 46                                         | EKRG500E□□100ME09D |
|          | 4,700    | 18×20              | 0.29 | 1,260                                      | EKRG160E□□472MM20S |          | 10       | 6.3×7              | 0.12 | 44                                         | EKRG500E□□100MF07D |
| 25       | 6,800    | 18×25              | 0.35 | 1,560                                      | EKRG160E□□682MM25S |          | 22       | 5×9                | 0.12 | 61                                         | EKRG500E□□220ME09D |
|          | 10       | 4×7                | 0.16 | 30                                         | EKRG250E□□100MD07D |          | 22       | 6.3×7              | 0.12 | 57                                         | EKRG500E□□220MF07D |
|          | 22       | 5×7                | 0.16 | 46                                         | EKRG250E□□220ME07D |          | 33       | 6.3×9              | 0.12 | 80                                         | EKRG500E□□330MF09D |
|          | 33       | 6.3×7              | 0.16 | 63                                         | EKRG250E□□330MF07D |          | 47       | 6.3×9              | 0.12 | 95                                         | EKRG500E□□470MF09D |
|          | 47       | 5×9                | 0.16 | 75                                         | EKRG250E□□470ME09D |          | 100      | 10×9               | 0.12 | 170                                        | EKRG500E□□101MJ09S |
|          | 47       | 6.3×7              | 0.16 | 71                                         | EKRG250E□□470MF07D |          | 220      | 10×12.5            | 0.12 | 290                                        | EKRG500E□□221MJC5S |
|          | 100      | 6.3×9              | 0.16 | 121                                        | EKRG250E□□101MF09D |          | 330      | 12.5×13            | 0.12 | 370                                        | EKRG500E□□331MK13S |
|          | 330      | 10×9               | 0.16 | 270                                        | EKRG250E□□331MJ09S |          | 470      | 16×15              | 0.12 | 535                                        | EKRG500E□□471ML15S |
|          | 470      | 10×12.5            | 0.16 | 370                                        | EKRG250E□□471MJC5S |          | 1,000    | 18×20              | 0.12 | 830                                        | EKRG500E□□102MM20S |
|          | 1,000    | 12.5×15            | 0.16 | 590                                        | EKRG250E□□102MK15S |          |          |                    |      |                                            |                    |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|------|------|------|------|------|------|
| 0.1 to 4.7       | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 47         | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000     | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to         | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

## SMQ Series

- Downsized from current standard SMG series
- Endurance : 2,000 hours at 85°C
- Non Solvent-proof type
- RoHS Compliant

SMQ

↑ Downsized  
SMG

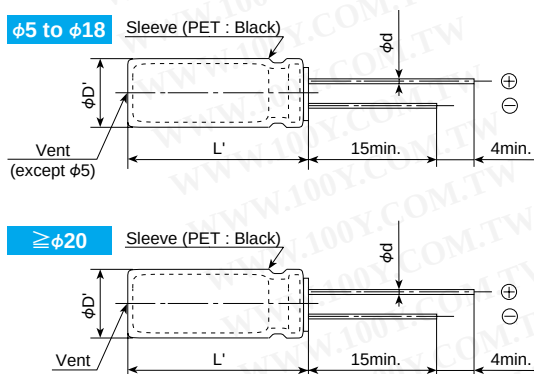
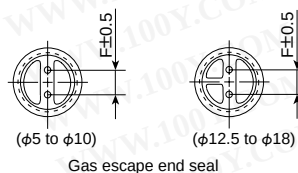


## ◆ SPECIFICATIONS

| Items                                                                                     | Characteristics                                                                                                                                               |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------|------|------|------|------|------|--------------------------------------|-------------|-------------|-------------------|------|------|--------------|
| Category                                                                                  |                                                                                                                                                               |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Temperature Range                                                                         | -40 to +85°C(6.3 to 400V <sub>dc</sub> )    -25 to +85°C(450V <sub>dc</sub> )                                                                                 |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Rated Voltage Range                                                                       | 6.3 to 450V <sub>dc</sub>                                                                                                                                     |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Capacitance Tolerance                                                                     | ±20% (M) (at 20°C, 120Hz)                                                                                                                                     |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Leakage Current                                                                           |                                                                                                                                                               | 6.3 to 100V <sub>dc</sub>              |      |      |      |      |      |      | 160 to 450V <sub>dc</sub>            |             |             |                   |      |      |              |
|                                                                                           | ≤φ18                                                                                                                                                          | I=0.03CV or 4μA, whichever is greater. |      |      |      |      |      |      | CV \ Time                            |             |             | After 1minute     |      |      |              |
|                                                                                           |                                                                                                                                                               |                                        |      |      |      |      |      |      | CV≤1,000                             |             |             | I=0.1CV+40 max.   |      |      |              |
|                                                                                           |                                                                                                                                                               |                                        |      |      |      |      |      |      | CV>1,000                             |             |             | I=0.04CV+100 max. |      |      |              |
|                                                                                           |                                                                                                                                                               | (at 20C after 1 minute)                |      |      |      |      |      |      | (at 20°C)                            |             |             |                   |      |      |              |
|                                                                                           | ≥φ20                                                                                                                                                          | I=0.03CV                               |      |      |      |      |      |      | (at 20°C after 3 minutes)            |             |             |                   |      |      |              |
| Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) |                                                                                                                                                               |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Dissipation Factor (tanδ)                                                                 | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 6.3V                                   | 10V  | 16V  | 25V  | 35V  | 50V  | 63V  | 100V                                 | 160 to 250V | 315 to 400V | 450V              |      |      |              |
|                                                                                           | tanδ (Max.)                                                                                                                                                   | 0.28                                   | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.09 | 0.08                                 | 0.20        | 0.24        | 0.24              |      |      |              |
|                                                                                           | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                             |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Low Temperature Characteristics (Max. Impedance Ratio)                                    | Rated voltage (V <sub>dc</sub> )                                                                                                                              | 6.3V                                   | 10V  | 16V  | 25V  | 35V  | 50V  | 63V  | 100V                                 | 160 to 200V | 250V        | 350V              | 400V | 450V |              |
|                                                                                           | Z(-25°C)/Z(+20°C)                                                                                                                                             | ≤φ8                                    | 5    | 4    | 3    | 2    | 2    | 2    | 2                                    | 2           | 3           | 3                 | 4    | 4    | 6            |
|                                                                                           |                                                                                                                                                               | ≥φ10                                   | 5    | 4    | 3    | 2    | 2    | 2    | 2                                    | 2           | 3           | 3                 | 4    | 4    | 6            |
|                                                                                           | Z(-40°C)/Z(+20°C)                                                                                                                                             | ≤φ8                                    | 12   | 10   | 8    | 5    | 4    | 3    | 3                                    | 3           | 8           | 10                | 8    | 8    | —            |
|                                                                                           |                                                                                                                                                               | ≥φ10                                   | 12   | 10   | 8    | 5    | 4    | 3    | 3                                    | 3           | 4           | 4                 | 6    | 6    | — (at 120Hz) |
| Endurance                                                                                 | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 85°C.          |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
|                                                                                           | Capacitance change                                                                                                                                            | ≤±20% of the initial value             |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
|                                                                                           | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value   |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
|                                                                                           | Leakage current                                                                                                                                               | ≤The initial specified value           |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
| Shelf Life                                                                                | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied. |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |
|                                                                                           | Rated voltage                                                                                                                                                 | 6.3 to 100V <sub>dc</sub>              |      |      |      |      |      |      | 160 to 450V <sub>dc</sub>            |             |             |                   |      |      |              |
|                                                                                           | Capacitance change                                                                                                                                            | ≤±20% of the initial value             |      |      |      |      |      |      | ≤±20% of the initial value           |             |             |                   |      |      |              |
|                                                                                           | D.F. (tanδ)                                                                                                                                                   | ≤200% of the initial specified value   |      |      |      |      |      |      | ≤200% of the initial specified value |             |             |                   |      |      |              |
|                                                                                           | Leakage current                                                                                                                                               | ≤The initial specified value           |      |      |      |      |      |      | ≤500% of the initial specified value |             |             |                   |      |      |              |
|                                                                                           |                                                                                                                                                               |                                        |      |      |      |      |      |      |                                      |             |             |                   |      |      |              |

## ◆ DIMENSIONS [mm]

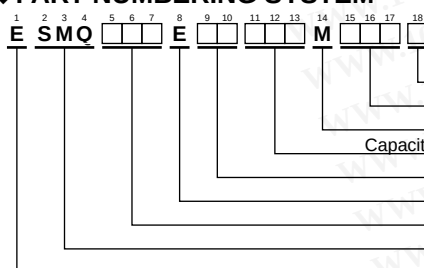
- Terminal Code : E



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| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  | 20         | 22   |
|-----|------------|-----|-----|-----|------|-----|-----|------------|------|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 | 1.0        | 1.0  |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 | 10.0       | 10.0 |
| φD' | φD+0.5max. |     |     |     |      |     |     | φD+0.5max. |      |
| L'  | L+1.5max.  |     |     |     |      |     |     | L+2.0max.  |      |

## ◆ PART NUMBERING SYSTEM



Supplement code  
 Size code  
 Capacitance tolerance code  
 Capacitance code (ex. 0.1μF:R10, 10μF:100, 100μF:101)  
 Lead forming-taping code  
 Terminal code  
 Voltage code (ex. 6.3V:6R3, 50V:500, 100V:101)  
 Series code  
 Category

Please refer to "A guide to global code (radial lead type)"



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

SMQ Series

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## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/85°C, 120Hz) | Part No.            | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/85°C, 120Hz) | Part No.             |
|----------|----------|--------------------|------|-------------------------------------------|---------------------|----------|----------|--------------------|------|-------------------------------------------|----------------------|
| 6.3      | 1,000    | 8×11.5             | 0.28 | 540                                       | ESMQ6R3E□□102MHB5D  | 50       | 47       | 6.3×11             | 0.12 | 155                                       | ESMQ500E□□470MF11D   |
|          | 2,200    | 10×16              | 0.30 | 890                                       | ESMQ6R3E□□222MJ16S  |          | 68       | 6.3×11             | 0.12 | 210                                       | ESMQ500E□□680MF11D   |
|          | 3,300    | 10×20              | 0.32 | 1,190                                     | ESMQ6R3E□□332MJ20S  |          | 100      | 8×11.5             | 0.12 | 260                                       | ESMQ500E□□101MHB5D   |
|          | 4,700    | 12.5×20            | 0.34 | 1,550                                     | ESMQ6R3E□□472MK20S  |          | 220      | 10×12.5            | 0.12 | 430                                       | ESMQ500E□□221MJCS    |
|          | 6,800    | 12.5×25            | 0.38 | 1,920                                     | ESMQ6R3E□□682MK25S  |          | 330      | 10×16              | 0.12 | 590                                       | ESMQ500E□□331MJ16S   |
|          | 10,000   | 16×25              | 0.46 | 2,350                                     | ESMQ6R3E□□103ML25S  |          | 470      | 10×20              | 0.12 | 760                                       | ESMQ500E□□471MJ20S   |
|          | 15,000   | 16×31.5            | 0.56 | 2,550                                     | ESMQ6R3E□□153MLN3S  |          | 1,000    | 12.5×25            | 0.12 | 1,350                                     | ESMQ500E□□102MK25S   |
|          | 22,000   | 18×35.5            | 0.70 | 3,200                                     | ESMQ6R3E□□223MMP1S  |          | 2,200    | 16×31.5            | 0.14 | 1,980                                     | ESMQ500E□□222MLN3S   |
|          | 33,000   | 20×40              | 0.92 | 3,500                                     | ESMQ6R3E□□333MNA40S |          | 3,300    | 18×35.5            | 0.16 | 2,500                                     | ESMQ500E□□332MMP1S   |
|          | 47,000   | 22×50              | 1.20 | 3,900                                     | ESMQ6R3E□□473MP50S  |          | 4,700    | 20×40              | 0.18 | 2,900                                     | ESMQ500E□□472MNA40S  |
| 10       | 220      | 5×11               | 0.24 | 240                                       | ESMQ100E□□221MF11D  | 63       | 6,800    | 22×50              | 0.22 | 3,500                                     | ESMQ500E□□682MP50S   |
|          | 330      | 6.3×11             | 0.24 | 290                                       | ESMQ100E□□331MF11D  |          | 22       | 5×11               | 0.09 | 100                                       | ESMQ630E□□220ME11D   |
|          | 470      | 6.3×11             | 0.24 | 350                                       | ESMQ100E□□471MF11D  |          | 33       | 6.3×11             | 0.09 | 140                                       | ESMQ630E□□330MF11D   |
|          | 1,000    | 10×12.5            | 0.24 | 650                                       | ESMQ100E□□102MJC5S  |          | 47       | 6.3×11             | 0.09 | 170                                       | ESMQ630E□□470MF11D   |
|          | 2,200    | 10×16              | 0.26 | 990                                       | ESMQ100E□□222MJ16S  |          | 68       | 8×11.5             | 0.09 | 220                                       | ESMQ630E□□680MHB5D   |
|          | 3,300    | 12.5×20            | 0.28 | 1,450                                     | ESMQ100E□□332MK20S  |          | 100      | 8×11.5             | 0.09 | 280                                       | ESMQ630E□□101MHB5D   |
|          | 4,700    | 12.5×25            | 0.30 | 1,800                                     | ESMQ100E□□472MK25S  |          | 220      | 10×16              | 0.09 | 490                                       | ESMQ630E□□221MJ16S   |
|          | 6,800    | 16×25              | 0.34 | 2,250                                     | ESMQ100E□□682ML25S  |          | 330      | 10×20              | 0.09 | 710                                       | ESMQ630E□□331MJ20S   |
|          | 10,000   | 16×31.5            | 0.42 | 2,550                                     | ESMQ100E□□103MLN3S  |          | 470      | 12.5×20            | 0.09 | 900                                       | ESMQ630E□□471MK20S   |
|          | 15,000   | 16×35.5            | 0.52 | 2,880                                     | ESMQ100E□□153MLP1S  | 100      | 1,000    | 16×25              | 0.09 | 1,300                                     | ESMQ630E□□102ML25S   |
| 16       | 22,000   | 18×40              | 0.66 | 3,400                                     | ESMQ100E□□223MMA40S |          | 2,200    | 18×35.5            | 0.11 | 2,300                                     | ESMQ630E□□222MMP1S   |
|          | 33,000   | 22×50              | 0.88 | 4,500                                     | ESMQ100E□□333MP50S  |          | 3,300    | 20×40              | 0.13 | 2,700                                     | ESMQ630E□□332MNA40S  |
|          | 220      | 6.3×11             | 0.20 | 260                                       | ESMQ160E□□221MF11D  |          | 4,700    | 22×50              | 0.15 | 3,400                                     | ESMQ630E□□472MP50S   |
|          | 330      | 6.3×11             | 0.20 | 320                                       | ESMQ160E□□331MF11D  |          | 0.10     | 5×11               | 0.08 | 2.1                                       | ESMQ101E□□R10ME11D   |
|          | 470      | 8×11.5             | 0.20 | 440                                       | ESMQ160E□□471MHB5D  |          | 0.22     | 5×11               | 0.08 | 4.7                                       | ESMQ101E□□R22ME11D   |
|          | 1,000    | 10×12.5            | 0.20 | 700                                       | ESMQ160E□□102MJC5S  |          | 0.33     | 5×11               | 0.08 | 7.0                                       | ESMQ101E□□R33ME11D   |
|          | 2,200    | 10×20              | 0.22 | 1,000                                     | ESMQ160E□□222MJ20S  |          | 0.47     | 5×11               | 0.08 | 10                                        | ESMQ101E□□R47ME11D   |
|          | 3,300    | 12.5×25            | 0.24 | 1,700                                     | ESMQ160E□□332MK25S  |          | 1.0      | 5×11               | 0.08 | 21                                        | ESMQ101E□□R10ME11D   |
|          | 4,700    | 16×25              | 0.26 | 2,100                                     | ESMQ160E□□472ML25S  |          | 2.2      | 5×11               | 0.08 | 30                                        | ESMQ101E□□R22ME11D   |
|          | 6,800    | 16×25              | 0.30 | 2,250                                     | ESMQ160E□□682ML25S  | 160      | 3.3      | 5×11               | 0.08 | 40                                        | ESMQ101E□□R33ME11D   |
|          | 10,000   | 16×35.5            | 0.38 | 2,710                                     | ESMQ160E□□103MLP1S  |          | 4.7      | 5×11               | 0.08 | 45                                        | ESMQ101E□□R47ME11D   |
| 25       | 15,000   | 18×40              | 0.48 | 3,100                                     | ESMQ160E□□153MMA40S |          | 10       | 5×11               | 0.08 | 70                                        | ESMQ101E□□R100ME11D  |
|          | 22,000   | 22×40              | 0.62 | 3,800                                     | ESMQ160E□□223MP40S  |          | 22       | 6.3×11             | 0.08 | 130                                       | ESMQ101E□□R220MF11D  |
|          | 100      | 5×11               | 0.16 | 180                                       | ESMQ250E□□101ME11D  |          | 33       | 8×11.5             | 0.08 | 180                                       | ESMQ101E□□R330MHB5D  |
|          | 220      | 6.3×11             | 0.16 | 280                                       | ESMQ250E□□221MF11D  |          | 47       | 8×11.5             | 0.08 | 200                                       | ESMQ101E□□R470MHB5D  |
|          | 330      | 8×11.5             | 0.16 | 440                                       | ESMQ250E□□331MHB5D  |          | 68       | 10×12.5            | 0.08 | 270                                       | ESMQ101E□□R680MJC5S  |
|          | 470      | 10×12.5            | 0.16 | 550                                       | ESMQ250E□□471MJC5S  |          | 100      | 10×16              | 0.08 | 340                                       | ESMQ101E□□R101MJ16S  |
|          | 1,000    | 10×16              | 0.16 | 860                                       | ESMQ250E□□102MJ16S  |          | 220      | 12.5×20            | 0.08 | 550                                       | ESMQ101E□□R221MK20S  |
|          | 2,200    | 12.5×25            | 0.18 | 1,550                                     | ESMQ250E□□222MK25S  |          | 330      | 12.5×25            | 0.08 | 760                                       | ESMQ101E□□R331MK25S  |
|          | 3,300    | 16×25              | 0.20 | 1,980                                     | ESMQ250E□□332ML25S  |          | 470      | 16×25              | 0.08 | 1,000                                     | ESMQ101E□□R471ML25S  |
|          | 4,700    | 16×25              | 0.22 | 2,200                                     | ESMQ250E□□472ML25S  | 200      | 1,000    | 18×35.5            | 0.08 | 1,350                                     | ESMQ101E□□R102MMP1S  |
| 35       | 6,800    | 16×35.5            | 0.26 | 2,600                                     | ESMQ250E□□682MLP1S  |          | 2,200    | 22×50              | 0.08 | 2,400                                     | ESMQ101E□□R222MP50S  |
|          | 10,000   | 18×40              | 0.34 | 2,800                                     | ESMQ250E□□103MMA40S |          | 10       | 8×11.5             | 0.20 | 80                                        | ESMQ161E□□R100MHB5D  |
|          | 15,000   | 22×50              | 0.44 | 3,800                                     | ESMQ250E□□153MP50S  |          | 22       | 10×12.5            | 0.20 | 130                                       | ESMQ161E□□R220MJC5S  |
|          | 47       | 5×11               | 0.14 | 130                                       | ESMQ350E□□470ME11D  |          | 33       | 10×16              | 0.20 | 180                                       | ESMQ161E□□R330MJ16S  |
|          | 68       | 6.3×11             | 0.14 | 160                                       | ESMQ350E□□680MF11D  |          | 47       | 10×20              | 0.20 | 210                                       | ESMQ161E□□R470MJ20S  |
|          | 100      | 6.3×11             | 0.14 | 210                                       | ESMQ350E□□101MF11D  |          | 68       | 12.5×20            | 0.20 | 350                                       | ESMQ161E□□R680MK20S  |
|          | 220      | 8×11.5             | 0.14 | 385                                       | ESMQ350E□□221MHB5D  |          | 100      | 12.5×25            | 0.20 | 430                                       | ESMQ161E□□R101MK25S  |
|          | 330      | 10×12.5            | 0.14 | 490                                       | ESMQ350E□□331MJC5S  |          | 220      | 16×31.5            | 0.20 | 760                                       | ESMQ161E□□R221MLN3S  |
|          | 470      | 10×16              | 0.14 | 650                                       | ESMQ350E□□471MJ16S  |          | 330      | 18×35.5            | 0.20 | 995                                       | ESMQ161E□□R331MMP1S  |
|          | 1,000    | 12.5×20            | 0.14 | 1,150                                     | ESMQ350E□□102MK20S  | 250      | 470      | 18×40              | 0.20 | 1,200                                     | ESMQ161E□□R471MMA40S |
|          | 2,200    | 16×25              | 0.16 | 1,800                                     | ESMQ350E□□222ML25S  |          | 1.0      | 6.3×11             | 0.20 | 22                                        | ESMQ201E□□R10MF11D   |
| 50       | 3,300    | 16×31.5            | 0.18 | 2,100                                     | ESMQ350E□□332MLN3S  |          | 2.2      | 6.3×11             | 0.20 | 33                                        | ESMQ201E□□R22MF11D   |
|          | 4,700    | 16×35.5            | 0.20 | 2,500                                     | ESMQ350E□□472MLP1S  |          | 3.3      | 6.3×11             | 0.20 | 40                                        | ESMQ201E□□R33MF11D   |
|          | 6,800    | 18×40              | 0.24 | 2,800                                     | ESMQ350E□□682MMA40S |          | 4.7      | 6.3×11             | 0.20 | 50                                        | ESMQ201E□□R47MF11D   |
|          | 10,000   | 22×50              | 0.32 | 3,700                                     | ESMQ350E□□103MP50S  |          | 10       | 8×11.5             | 0.20 | 80                                        | ESMQ201E□□R100MHB5D  |
|          | 0.10     | 5×11               | 0.12 | 1.3                                       | ESMQ500E□□R10ME11D  |          | 22       | 10×16              | 0.20 | 150                                       | ESMQ201E□□R220MJ16S  |
|          | 0.22     | 5×11               | 0.12 | 2.9                                       | ESMQ500E□□R22ME11D  |          | 33       | 10×20              | 0.20 | 205                                       | ESMQ201E□□R330MJ20S  |
|          | 0.33     | 5×11               | 0.12 | 4.3                                       | ESMQ500E□□R33ME11D  |          | 47       | 12.5×20            | 0.20 | 270                                       | ESMQ201E□□R470MK20S  |
|          | 0.47     | 5×11               | 0.12 | 6.2                                       | ESMQ500E□□R47ME11D  |          | 68       | 12.5×25            | 0.20 | 350                                       | ESMQ201E□□R680MK25S  |
|          | 1.0      | 5×11               | 0.12 | 17                                        | ESMQ500E□□R10ME11D  |          | 100      | 16×25              | 0.20 | 475                                       | ESMQ201E□□R101ML25S  |
|          | 2.2      | 5×11               | 0.12 | 28                                        | ESMQ500E□□R22ME11D  |          | 220      | 16×35.5            | 0.20 | 700                                       | ESMQ201E□□R221MLP1S  |
| 50       | 3.3      | 5×11               | 0.12 | 35                                        | ESMQ500E□□R33ME11D  |          | 330      | 18×40              | 0.20 | 950                                       | ESMQ201E□□R331MMA40S |
|          | 4.7      | 5×11               | 0.12 | 41                                        | ESMQ500E□□R47ME11D  |          | 3.3      | 6.3×11             | 0.20 | 40                                        | ESMQ251E□□R33MF11D   |
|          | 10       | 5×11               | 0.12 | 60                                        | ESMQ500E□□R100ME11D |          | 4.7      | 6.3×11             | 0.20 | 50                                        | ESMQ251E□□R47MF11D   |
|          | 22       | 5×11               | 0.12 | 95                                        | ESMQ500E□□R220ME11D |          | 10       | 10×12.5            | 0.20 | 100                                       | ESMQ251E□□R100MJC5S  |
|          | 33       | 5×11               | 0.12 | 125                                       | ESMQ500E□□R330ME11D |          | 22       | 10×20              | 0.20 | 170                                       | ESMQ251E□□R220MJ20S  |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

SMQ Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|------------------------------------------------------|--------------------|----------|----------|--------------------|------|------------------------------------------------------|--------------------|
| 250      | 33       | 10×20              | 0.20 | 200                                                  | ESMQ251E□□330MJ20S | 400      | 3.3      | 8×11.5             | 0.24 | 48                                                   | ESMQ401E□□3R3MHB5D |
|          | 47       | 12.5×20            | 0.20 | 270                                                  | ESMQ251E□□470MK20S |          | 4.7      | 10×12.5            | 0.24 | 60                                                   | ESMQ401E□□4R7MJC5S |
|          | 68       | 16×25              | 0.20 | 380                                                  | ESMQ251E□□680ML25S |          | 10       | 10×16              | 0.24 | 90                                                   | ESMQ401E□□100MJ16S |
|          | 100      | 16×25              | 0.20 | 440                                                  | ESMQ251E□□101ML25S |          | 22       | 12.5×25            | 0.24 | 205                                                  | ESMQ401E□□220MK25S |
|          | 220      | 18×35.5            | 0.20 | 680                                                  | ESMQ251E□□221MMP1S |          | 33       | 16×25              | 0.24 | 275                                                  | ESMQ401E□□330ML25S |
| 350      | 2.2      | 6.3×11             | 0.24 | 30                                                   | ESMQ351E□□2R2MF11D | 450      | 47       | 16×25              | 0.24 | 280                                                  | ESMQ401E□□470ML25S |
|          | 3.3      | 8×11.5             | 0.24 | 46                                                   | ESMQ351E□□3R3MHB5D |          | 68       | 16×31.5            | 0.24 | 340                                                  | ESMQ401E□□680MLN3S |
|          | 4.7      | 8×11.5             | 0.24 | 55                                                   | ESMQ351E□□4R7MHB5D |          | 100      | 18×35.5            | 0.24 | 440                                                  | ESMQ401E□□101MMP1S |
|          | 10       | 10×12.5            | 0.24 | 90                                                   | ESMQ351E□□100MJC5S |          | 2.2      | 8×11.5             | 0.24 | 28                                                   | ESMQ451E□□2R2MHB5D |
|          | 22       | 12.5×20            | 0.24 | 185                                                  | ESMQ351E□□220MK20S |          | 3.3      | 10×12.5            | 0.24 | 40                                                   | ESMQ451E□□3R3MJC5S |
|          | 33       | 12.5×25            | 0.24 | 240                                                  | ESMQ351E□□330MK25S |          | 4.7      | 10×12.5            | 0.24 | 46                                                   | ESMQ451E□□4R7MJC5S |
|          | 47       | 16×25              | 0.24 | 325                                                  | ESMQ351E□□470ML25S |          | 10       | 10×20              | 0.24 | 80                                                   | ESMQ451E□□100MJ20S |
|          | 68       | 16×25              | 0.24 | 400                                                  | ESMQ351E□□680ML25S |          | 22       | 12.5×25            | 0.24 | 140                                                  | ESMQ451E□□220MK25S |
| 400      | 100      | 18×31.5            | 0.24 | 530                                                  | ESMQ351E□□101MMN3S |          | 33       | 16×25              | 0.24 | 180                                                  | ESMQ451E□□330ML25S |
|          | 0.47     | 6.3×11             | 0.24 | 12                                                   | ESMQ401E□□R47MF11D |          | 47       | 16×31.5            | 0.24 | 220                                                  | ESMQ451E□□470MLN3S |
|          | 1.0      | 6.3×11             | 0.24 | 22                                                   | ESMQ401E□□1R0MF11D |          | 68       | 18×35.5            | 0.24 | 260                                                  | ESMQ451E□□680MMP1S |
|          | 2.2      | 8×11.5             | 0.24 | 38                                                   | ESMQ401E□□2R2MHB5D |          | 100      | 18×40              | 0.24 | 280                                                  | ESMQ451E□□101MM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

(φ5 to φ18)

| Capacitance (μF) | Frequency (Hz) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|------|------|
| 0.1 to 4.7       |                | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 68         |                | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000     |                | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to         |                | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

(φ20 to φ22)

| Rated Voltage (V <sub>dc</sub> ) | Frequency (Hz) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|----------------------------------|----------------|------|------|------|------|------|------|
| 6.3 to 50                        |                | 0.95 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |
| 63 to 100                        |                | 0.92 | 1.00 | 1.07 | 1.13 | 1.19 | 1.20 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 105°C

# KMQ Series

- Downsized from current standard KMG series
- Solvent-proof type except 160 to 450V<sub>dc</sub>  
(see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

KMQ

↑  
Downsized  
KMG

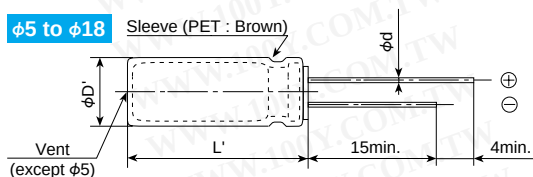
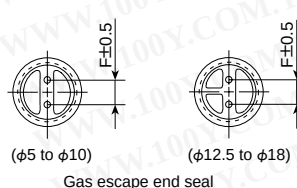


## ◆ SPECIFICATIONS

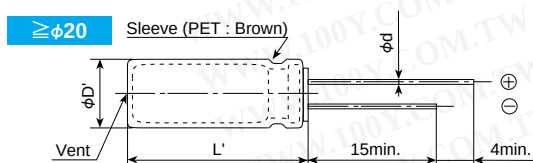
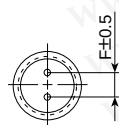
| Items                                                                                            | Characteristics                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------|------|------|------|------|---------------------------|--------------------------------------|-------------|-------------------|------|------------------|---|
| Category                                                                                         |                                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
| Temperature Range                                                                                | -55 to +105°C(6.3 to 100V <sub>dc</sub> ) -40 to +105°C(160 to 400V <sub>dc</sub> ) -25 to +105°C(450V <sub>dc</sub> )                                                                                                   |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
| Rated Voltage Range                                                                              | 6.3 to 450V <sub>dc</sub>                                                                                                                                                                                                |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
| Capacitance Tolerance                                                                            | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                                |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
| Leakage Current                                                                                  | 6.3 to 100V <sub>dc</sub>                                                                                                                                                                                                |                                        |      |      |      |      |      | 160 to 450V <sub>dc</sub> |                                      |             |                   |      |                  |   |
|                                                                                                  | ≤φ18                                                                                                                                                                                                                     | I=0.03CV or 4μA, whichever is greater. |      |      |      |      |      |                           | CV                                   |             | Time              |      | After 1minute    |   |
|                                                                                                  |                                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           | CV≤1,000                             |             | I=0.1CV+40 max.   |      |                  |   |
|                                                                                                  |                                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           | CV>1,000                             |             | I=0.04CV+100 max. |      |                  |   |
|                                                                                                  | (at 20°C after 1 minute)                                                                                                                                                                                                 |                                        |      |      |      |      |      | (at 20°C)                 |                                      |             |                   |      |                  |   |
| ≥φ20                                                                                             | I=0.03CV max.                                                                                                                                                                                                            |                                        |      |      |      |      |      | (at 20°C after 3 minutes) |                                      |             |                   |      |                  |   |
| Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)        |                                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
| Dissipation Factor (tanδ)                                                                        | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                         | 6.3V                                   | 10V  | 16V  | 25V  | 35V  | 50V  | 63V                       | 100V                                 | 160 to 250V | 350 to 400V       | 450V |                  |   |
|                                                                                                  | tanδ (Max.)                                                                                                                                                                                                              | 0.28                                   | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10                      | 0.08                                 | 0.20        | 0.24              | 0.24 |                  |   |
| When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. |                                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           |                                      |             |                   |      | (at 20°C, 120Hz) |   |
| Low Temperature Characteristics (Max. Impedance Ratio)                                           | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                         | 6.3V                                   | 10V  | 16V  | 25V  | 35V  | 50V  | 63 to 100V                | 160 to 200V                          | 250V        | 350V              | 400V | 450V             |   |
|                                                                                                  | Z(-25°C)/Z(+20°C)                                                                                                                                                                                                        | ≤φ8                                    | 5    | 4    | 3    | 2    | 2    | 2                         | 2                                    | 3           | 3                 | 4    | 4                | 6 |
|                                                                                                  |                                                                                                                                                                                                                          | ≥φ10                                   | 5    | 4    | 3    | 2    | 2    | 2                         | 2                                    | 3           | 3                 | 4    | 4                | 6 |
|                                                                                                  | Z(-40°C)/Z(+20°C)                                                                                                                                                                                                        | ≤φ8                                    | 10   | 8    | 6    | 4    | 3    | 3                         | 3                                    | 8           | 10                | 8    | 8                | — |
|                                                                                                  |                                                                                                                                                                                                                          | ≥φ10                                   | 10   | 8    | 6    | 4    | 3    | 3                         | 3                                    | 4           | 4                 | 6    | 6                | — |
|                                                                                                  |                                                                                                                                                                                                                          |                                        |      |      |      |      |      |                           |                                      |             |                   |      | (at 120Hz)       |   |
| Endurance                                                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 1,000 hours (2,000 hours for φ10 and more at 105°C). |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
|                                                                                                  | Capacitance change                                                                                                                                                                                                       | ≤±20% of the initial value             |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
|                                                                                                  | D.F. (tanδ)                                                                                                                                                                                                              | ≤200% of the initial specified value   |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
|                                                                                                  | Leakage current                                                                                                                                                                                                          | ≤The initial specified value           |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
| Shelf Life                                                                                       | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                                                           |                                        |      |      |      |      |      |                           |                                      |             |                   |      |                  |   |
|                                                                                                  | Rated voltage                                                                                                                                                                                                            | 6.3 to 100V <sub>dc</sub>              |      |      |      |      |      |                           | 160 to 450V <sub>dc</sub>            |             |                   |      |                  |   |
|                                                                                                  | Capacitance change                                                                                                                                                                                                       | ≤±20% of the initial value             |      |      |      |      |      |                           | ≤±20% of the initial value           |             |                   |      |                  |   |
|                                                                                                  | D.F. (tanδ)                                                                                                                                                                                                              | ≤200% of the initial specified value   |      |      |      |      |      |                           | ≤200% of the initial specified value |             |                   |      |                  |   |
|                                                                                                  | Leakage current                                                                                                                                                                                                          | ≤The initial specified value           |      |      |      |      |      |                           | ≤500% of the initial specified value |             |                   |      |                  |   |

## ◆ DIMENSIONS [mm]

- Terminal Code : E

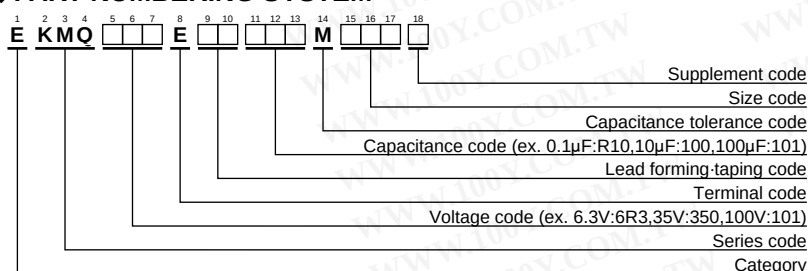


勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  | 20         | 22   |
|-----|------------|-----|-----|-----|------|-----|-----|------------|------|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 | 1.0        | 1.0  |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 | 10.0       | 10.0 |
| φD' | φD+0.5max. |     |     |     |      |     |     | φD+0.5max. |      |
| L'  | L+1.5max.  |     |     |     |      |     |     | L+2.0max.  |      |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 105°C

KMQ Series

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

□ is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.             | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.              |
|----------|----------|--------------------|------|--------------------------------------------|----------------------|----------|----------|--------------------|------|--------------------------------------------|-----------------------|
| 6.3      | 1,000    | 8×11.5             | 0.28 | 390                                        | EKMQR3E□□102MHB5D    | 50       | 47       | 6.3×11             | 0.12 | 115                                        | EKMQR50E□□470MF11D    |
|          | 2,200    | 10×16              | 0.30 | 635                                        | EKMQR3E□□222MJ16S    |          | 68       | 6.3×11             | 0.12 | 150                                        | EKMQR50E□□680MF11D    |
|          | 3,300    | 10×20              | 0.32 | 840                                        | EKMQR3E□□332MJ20S    |          | 100      | 8×11.5             | 0.12 | 190                                        | EKMQR50E□□101MHB5D    |
|          | 4,700    | 12.5×20            | 0.34 | 1,090                                      | EKMQR3E□□472MK20S    |          | 220      | 10×12.5            | 0.12 | 300                                        | EKMQR50E□□221MJCS     |
|          | 6,800    | 12.5×25            | 0.38 | 1,350                                      | EKMQR3E□□682MK25S    |          | 330      | 10×16              | 0.12 | 410                                        | EKMQR50E□□331MJ16S    |
|          | 10,000   | 16×25              | 0.46 | 1,650                                      | EKMQR3E□□103ML25S    |          | 470      | 10×20              | 0.12 | 540                                        | EKMQR50E□□471MJ20S    |
|          | 15,000   | 16×31.5            | 0.56 | 1,820                                      | EKMQR3E□□153MLN3S    |          | 1,000    | 12.5×25            | 0.12 | 950                                        | EKMQR50E□□102MK25S    |
|          | 22,000   | 18×35.5            | 0.70 | 2,280                                      | EKMQR3E□□223MMP1S    |          | 2,200    | 16×31.5            | 0.14 | 1,410                                      | EKMQR50E□□222MLN3S    |
|          | 33,000   | 20×40              | 0.92 | 2,500                                      | EKMQR3E□□333MM40S    |          | 3,300    | 18×35.5            | 0.16 | 1,770                                      | EKMQR50E□□332MMP1S    |
|          | 47,000   | 22×50              | 1.20 | 2,780                                      | EKMQR3E□□473MP50S    |          | 4,700    | 20×40              | 0.18 | 2,100                                      | EKMQR50E□□472MN40S    |
| 10       | 220      | 5×11               | 0.24 | 155                                        | EKMQR100E□□221ME11D  | 63       | 6,800    | 22×50              | 0.22 | 2,500                                      | EKMQR50E□□682MP50S    |
|          | 330      | 6.3×11             | 0.24 | 210                                        | EKMQR100E□□331MF11D  |          | 22       | 5×11               | 0.10 | 71                                         | EKMQR63E□□220ME11D    |
|          | 470      | 6.3×11             | 0.24 | 250                                        | EKMQR100E□□471MF11D  |          | 33       | 6.3×11             | 0.10 | 100                                        | EKMQR63E□□330MF11D    |
|          | 1,000    | 10×12.5            | 0.24 | 460                                        | EKMQR100E□□102MJC5S  |          | 47       | 6.3×11             | 0.10 | 120                                        | EKMQR63E□□470MF11D    |
|          | 2,200    | 10×16              | 0.26 | 705                                        | EKMQR100E□□103MLN3S  |          | 68       | 8×11.5             | 0.10 | 155                                        | EKMQR63E□□680MHB5D    |
|          | 3,300    | 12.5×20            | 0.28 | 1,000                                      | EKMQR100E□□332MK20S  |          | 100      | 8×11.5             | 0.10 | 200                                        | EKMQR63E□□101MHB5D    |
|          | 4,700    | 12.5×25            | 0.30 | 1,260                                      | EKMQR100E□□472MK25S  |          | 220      | 10×16              | 0.10 | 335                                        | EKMQR63E□□221MJ16S    |
|          | 6,800    | 16×25              | 0.34 | 1,570                                      | EKMQR100E□□682ML25S  |          | 330      | 10×20              | 0.10 | 510                                        | EKMQR63E□□331MJ20S    |
|          | 10,000   | 16×31.5            | 0.42 | 1,820                                      | EKMQR100E□□103MLN3S  |          | 470      | 12.5×20            | 0.10 | 640                                        | EKMQR63E□□471MK20S    |
|          | 15,000   | 16×35.5            | 0.52 | 2,050                                      | EKMQR100E□□153MLP1S  | 100      | 1,000    | 16×25              | 0.10 | 930                                        | EKMQR63E□□102ML25S    |
| 16       | 22,000   | 18×40              | 0.66 | 2,420                                      | EKMQR100E□□223MM40S  |          | 2,200    | 18×35.5            | 0.12 | 1,650                                      | EKMQR63E□□222MMP1S    |
|          | 33,000   | 22×50              | 0.88 | 3,210                                      | EKMQR100E□□333MP50S  |          | 3,300    | 20×40              | 0.14 | 1,950                                      | EKMQR63E□□332MN40S    |
|          | 220      | 6.3×11             | 0.20 | 190                                        | EKMQR160E□□221MF11D  |          | 4,700    | 22×50              | 0.16 | 2,450                                      | EKMQR63E□□472MP50S    |
|          | 330      | 6.3×11             | 0.20 | 225                                        | EKMQR160E□□331MF11D  |          | 0.10     | 5×11               | 0.08 | 1.5                                        | EKMQR101E□□R10ME11D   |
|          | 470      | 8×11.5             | 0.20 | 315                                        | EKMQR160E□□471MHB5D  |          | 0.22     | 5×11               | 0.08 | 3.4                                        | EKMQR101E□□R22ME11D   |
|          | 1,000    | 10×12.5            | 0.20 | 500                                        | EKMQR160E□□102MJC5S  |          | 0.33     | 5×11               | 0.08 | 5.0                                        | EKMQR101E□□R33ME11D   |
|          | 2,200    | 10×20              | 0.22 | 710                                        | EKMQR160E□□222MJ20S  |          | 0.47     | 5×11               | 0.08 | 7.1                                        | EKMQR101E□□R47ME11D   |
|          | 3,300    | 12.5×25            | 0.24 | 1,170                                      | EKMQR160E□□332MK25S  |          | 1.0      | 5×11               | 0.08 | 15                                         | EKMQR101E□□R10ME11D   |
|          | 4,700    | 16×25              | 0.26 | 1,500                                      | EKMQR160E□□472ML25S  |          | 2.2      | 5×11               | 0.08 | 21                                         | EKMQR101E□□R22ME11D   |
|          | 6,800    | 16×25              | 0.30 | 1,600                                      | EKMQR160E□□682ML25S  |          | 3.3      | 5×11               | 0.08 | 29                                         | EKMQR101E□□R33ME11D   |
|          | 10,000   | 16×35.5            | 0.38 | 1,930                                      | EKMQR160E□□103MLP1S  | 160      | 4.7      | 5×11               | 0.08 | 32                                         | EKMQR101E□□R47ME11D   |
| 25       | 15,000   | 18×40              | 0.48 | 2,210                                      | EKMQR160E□□153MM40S  |          | 10       | 5×11               | 0.08 | 50                                         | EKMQR101E□□R100ME11D  |
|          | 22,000   | 22×40              | 0.62 | 2,710                                      | EKMQR160E□□223MP40S  |          | 22       | 6.3×11             | 0.08 | 93                                         | EKMQR101E□□R220MF11D  |
|          | 100      | 5×11               | 0.16 | 125                                        | EKMQR250E□□101ME11D  |          | 33       | 8×11.5             | 0.08 | 130                                        | EKMQR101E□□R330MHB5D  |
|          | 220      | 6.3×11             | 0.16 | 200                                        | EKMQR250E□□221MF11D  |          | 47       | 8×11.5             | 0.08 | 140                                        | EKMQR101E□□R470MHB5D  |
|          | 330      | 8×11.5             | 0.16 | 310                                        | EKMQR250E□□331MHB5D  |          | 68       | 10×12.5            | 0.08 | 190                                        | EKMQR101E□□R680MJC5S  |
|          | 470      | 10×12.5            | 0.16 | 380                                        | EKMQR250E□□471MJC5S  |          | 100      | 10×16              | 0.08 | 240                                        | EKMQR101E□□R101MJ16S  |
|          | 1,000    | 10×16              | 0.16 | 610                                        | EKMQR250E□□102MJ16S  |          | 220      | 12.5×20            | 0.08 | 390                                        | EKMQR101E□□R221MK20S  |
|          | 2,200    | 12.5×25            | 0.18 | 1,090                                      | EKMQR250E□□222MK25S  |          | 330      | 12.5×25            | 0.08 | 540                                        | EKMQR101E□□R331MK25S  |
|          | 3,300    | 16×25              | 0.20 | 1,400                                      | EKMQR250E□□332ML25S  |          | 470      | 16×25              | 0.08 | 715                                        | EKMQR101E□□R471ML25S  |
|          | 4,700    | 16×25              | 0.22 | 1,570                                      | EKMQR250E□□472ML25S  |          | 1,000    | 18×35.5            | 0.08 | 960                                        | EKMQR101E□□R1002MMP1S |
|          | 6,800    | 16×35.5            | 0.26 | 1,850                                      | EKMQR250E□□682MLP1S  | 200      | 2,200    | 22×50              | 0.10 | 1,750                                      | EKMQR101E□□R222MP50S  |
| 35       | 10,000   | 18×40              | 0.34 | 2,000                                      | EKMQR250E□□103MM40S  |          | 10       | 8×11.5             | 0.20 | 41                                         | EKMQR161E□□R100MHB5D  |
|          | 15,000   | 22×50              | 0.44 | 2,750                                      | EKMQR250E□□153MP50S  |          | 22       | 10×12.5            | 0.20 | 92                                         | EKMQR161E□□R220MJC5S  |
|          | 47       | 5×11               | 0.14 | 93                                         | EKMQR350E□□470ME11D  |          | 33       | 10×16              | 0.20 | 125                                        | EKMQR161E□□R330MJ16S  |
|          | 68       | 6.3×11             | 0.14 | 110                                        | EKMQR350E□□680MF11D  |          | 47       | 10×20              | 0.20 | 150                                        | EKMQR161E□□R470MJ20S  |
|          | 100      | 6.3×11             | 0.14 | 150                                        | EKMQR350E□□101MF11D  |          | 68       | 12.5×20            | 0.20 | 250                                        | EKMQR161E□□R680MK20S  |
|          | 220      | 8×11.5             | 0.14 | 270                                        | EKMQR350E□□221MHB5D  |          | 100      | 12.5×25            | 0.20 | 310                                        | EKMQR161E□□R101MK25S  |
|          | 330      | 10×12.5            | 0.14 | 350                                        | EKMQR350E□□331MJC5S  |          | 220      | 16×31.5            | 0.20 | 540                                        | EKMQR161E□□R221MLN3S  |
|          | 470      | 10×16              | 0.14 | 460                                        | EKMQR350E□□471MJ16S  |          | 330      | 18×35.5            | 0.20 | 705                                        | EKMQR161E□□R331MMP1S  |
|          | 1,000    | 12.5×20            | 0.14 | 810                                        | EKMQR350E□□102MK20S  |          | 470      | 18×40              | 0.20 | 855                                        | EKMQR161E□□R471MM40S  |
|          | 2,200    | 16×25              | 0.16 | 1,260                                      | EKMQR350E□□222ML25S  | 250      | 1.0      | 6.3×11             | 0.20 | 16                                         | EKMQR201E□□R10MF11D   |
| 50       | 3,300    | 16×31.5            | 0.18 | 1,500                                      | EKMQR350E□□332MLN3S  |          | 2.2      | 6.3×11             | 0.20 | 25                                         | EKMQR201E□□R22MF11D   |
|          | 4,700    | 16×35.5            | 0.20 | 1,780                                      | EKMQR350E□□472MLP1S  |          | 3.3      | 6.3×11             | 0.20 | 30                                         | EKMQR201E□□R33MF11D   |
|          | 6,800    | 18×40              | 0.24 | 2,000                                      | EKMQR350E□□682MM40S  |          | 4.7      | 6.3×11             | 0.20 | 35                                         | EKMQR201E□□R47MF11D   |
|          | 10,000   | 22×50              | 0.32 | 2,650                                      | EKMQR350E□□103MP50S  |          | 10       | 8×11.5             | 0.20 | 57                                         | EKMQR201E□□R100MHB5D  |
|          | 0.10     | 5×11               | 0.12 | 1.3                                        | EKMQR500E□□R10ME11D  |          | 22       | 10×16              | 0.20 | 105                                        | EKMQR201E□□R220MJ16S  |
|          | 0.22     | 5×11               | 0.12 | 2.9                                        | EKMQR500E□□R22ME11D  |          | 33       | 10×20              | 0.20 | 140                                        | EKMQR201E□□R330MJ20S  |
|          | 0.33     | 5×11               | 0.12 | 4.3                                        | EKMQR500E□□R33ME11D  |          | 47       | 12.5×20            | 0.20 | 195                                        | EKMQR201E□□R470MK20S  |
|          | 0.47     | 5×11               | 0.12 | 7.0                                        | EKMQR500E□□R47ME11D  |          | 68       | 12.5×25            | 0.20 | 250                                        | EKMQR201E□□R680MK25S  |
|          | 1.0      | 5×11               | 0.12 | 13                                         | EKMQR500E□□R10ME11D  |          | 100      | 16×25              | 0.20 | 335                                        | EKMQR201E□□R101ML25S  |
|          | 2.2      | 5×11               | 0.12 | 20                                         | EKMQR500E□□R22ME11D  |          | 220      | 16×35.5            | 0.20 | 500                                        | EKMQR201E□□R221MLP1S  |
|          | 3.3      | 5×11               | 0.12 | 25                                         | EKMQR500E□□R33ME11D  |          | 330      | 18×40              | 0.20 | 675                                        | EKMQR201E□□R331MM40S  |
| 50       | 4.7      | 5×11               | 0.12 | 30                                         | EKMQR500E□□R47ME11D  |          | 3.3      | 6.3×11             | 0.20 | 28                                         | EKMQR251E□□R33MF11D   |
|          | 10       | 5×11               | 0.12 | 46                                         | EKMQR500E□□R100ME11D |          | 4.7      | 6.3×11             | 0.20 | 35                                         | EKMQR251E□□R47MF11D   |
|          | 22       | 5×11               | 0.12 | 68                                         | EKMQR500E□□R220ME11D |          | 10       | 10×12.5            | 0.20 | 71                                         | EKMQR251E□□R100MJCS   |
|          | 33       | 5×11               | 0.12 | 90                                         | EKMQR500E□□R330ME11D |          | 22       | 10×20              | 0.20 | 105                                        | EKMQR251E□□R220MJ20S  |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 105°C

KMQ Series

## ◆STANDARD RATINGS

□ is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|--------------------------------------------|--------------------|----------|----------|--------------------|------|--------------------------------------------|--------------------|
| 250      | 33       | 10×20              | 0.20 | 140                                        | EKMQ251E□□330MJ20S | 400      | 3.3      | 8×11.5             | 0.24 | 34                                         | EKMQ401E□□3R3MHB5D |
|          | 47       | 12.5×20            | 0.20 | 190                                        | EKMQ251E□□470MK20S |          | 4.7      | 10×12.5            | 0.24 | 42                                         | EKMQ401E□□4R7MJC5S |
|          | 68       | 16×25              | 0.20 | 270                                        | EKMQ251E□□680ML25S |          | 10       | 10×16              | 0.24 | 64                                         | EKMQ401E□□100MJ16S |
|          | 100      | 16×25              | 0.20 | 310                                        | EKMQ251E□□101ML25S |          | 22       | 12.5×25            | 0.24 | 145                                        | EKMQ401E□□220MK25S |
|          | 220      | 18×35.5            | 0.20 | 485                                        | EKMQ251E□□221MMP1S |          | 33       | 16×25              | 0.24 | 195                                        | EKMQ401E□□330ML25S |
| 350      | 2.2      | 6.3×11             | 0.24 | 21                                         | EKMQ351E□□2R2MF11D | 450      | 47       | 16×25              | 0.24 | 200                                        | EKMQ401E□□470ML25S |
|          | 3.3      | 8×11.5             | 0.24 | 30                                         | EKMQ351E□□3R3MHB5D |          | 68       | 16×31.5            | 0.24 | 240                                        | EKMQ401E□□680MLN3S |
|          | 4.7      | 8×11.5             | 0.24 | 39                                         | EKMQ351E□□4R7MHB5D |          | 100      | 18×35.5            | 0.24 | 310                                        | EKMQ401E□□101MMP1S |
|          | 10       | 10×12.5            | 0.24 | 64                                         | EKMQ351E□□100MJC5S |          | 2.2      | 8×11.5             | 0.24 | 20                                         | EKMQ451E□□2R2MHB5D |
|          | 22       | 12.5×20            | 0.24 | 130                                        | EKMQ351E□□220MK20S |          | 3.3      | 10×12.5            | 0.24 | 28                                         | EKMQ451E□□3R3MJC5S |
|          | 33       | 12.5×25            | 0.24 | 170                                        | EKMQ351E□□330MK25S |          | 4.7      | 10×12.5            | 0.24 | 32                                         | EKMQ451E□□4R7MJC5S |
|          | 47       | 16×25              | 0.24 | 230                                        | EKMQ351E□□470ML25S |          | 10       | 10×20              | 0.24 | 56                                         | EKMQ451E□□100MJ20S |
|          | 68       | 16×25              | 0.24 | 285                                        | EKMQ351E□□680ML25S |          | 22       | 12.5×25            | 0.24 | 100                                        | EKMQ451E□□220MK25S |
| 400      | 100      | 18×31.5            | 0.24 | 375                                        | EKMQ351E□□101MMN3S |          | 33       | 16×25              | 0.24 | 125                                        | EKMQ451E□□330ML25S |
|          | 0.47     | 6.3×11             | 0.24 | 8.5                                        | EKMQ401E□□R47MF11D |          | 47       | 16×31.5            | 0.24 | 155                                        | EKMQ451E□□470MLN3S |
|          | 1.0      | 6.3×11             | 0.24 | 15                                         | EKMQ401E□□1R0MF11D |          | 68       | 18×35.5            | 0.24 | 185                                        | EKMQ451E□□680MMP1S |
|          | 2.2      | 8×11.5             | 0.24 | 27                                         | EKMQ401E□□2R2MHB5D |          | 100      | 18×40              | 0.24 | 200                                        | EKMQ451E□□101MM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

(φ5 to φ18)

| Capacitance (μF) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|------|------|------|------|------|------|
| 0.1 to 4.7       | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 68         | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000     | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to         | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

(φ20 to φ22)

| Rated Voltage (Vdc) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|---------------------|------|------|------|------|------|------|
| 6.3 to 50           | 0.95 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |
| 63 to 100           | 0.92 | 1.00 | 1.07 | 1.13 | 1.19 | 1.20 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

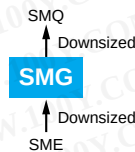
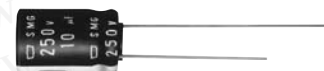


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

# SMG Series

- Downsized from SME series
- Endurance : 2,000 hours at 85°C
- Solvent-proof type except 315 to 450V<sub>dc</sub>  
(see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

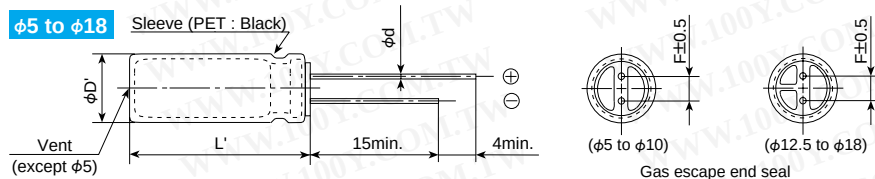
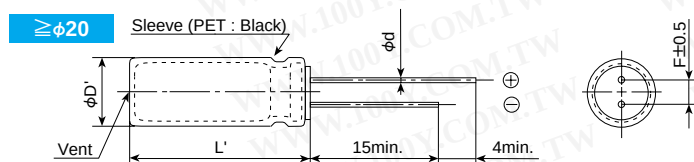


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Category                                               | SMG                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |
| Temperature Range                                      | -40 to +85°C(6.3 to 400V <sub>dc</sub> ) -25 to +85°C(450V <sub>dc</sub> )                                                                                    |  |  |  |  |  |  |  |  |  |  |  |
| Rated Voltage Range                                    | 6.3 to 450V <sub>dc</sub>                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |
| Capacitance Tolerance                                  | ±20% (M)                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |
| Leakage Current                                        | (at 20°C, 120Hz)                                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | 6.3 to 100V <sub>dc</sub>                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | 160 to 450V <sub>dc</sub>                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | CV Time After 1minute After 5minutes                                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | CV≤1,000 I=0.1CV+40 max. I=0.03CV+15 max.                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |
| Leakage Current                                        | CV>1,000 I=0.04CV+100 max. I=0.02CV+25 max.                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | (at 20°C after 1 minute)                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | (at 20°C)                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |
| Dissipation Factor (tanδ)                              | Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                                     |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Rated voltage (V <sub>dc</sub> )                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | tanδ (Max.)                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.                                                              |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | (at 20°C, 120Hz)                                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | (at 120Hz)                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 85°C.          |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Capacitance change                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Leakage current                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied. |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Rated voltage                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Capacitance change                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
|                                                        | Leakage current                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |

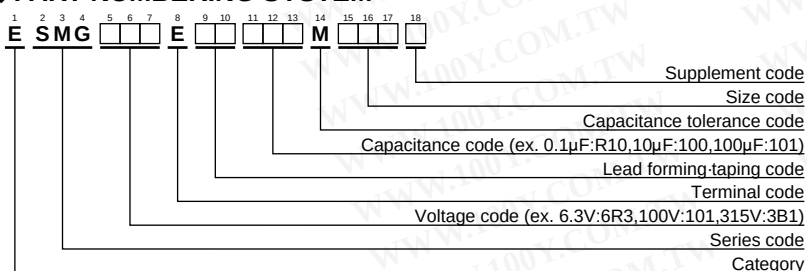
## ◆DIMENSIONS [mm]

- Terminal Code : E



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  | 20         | 22   | 25.4 |
|-----|------------|-----|-----|-----|------|-----|-----|------------|------|------|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 | 1.0        | 1.0  | 1.0  |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 | 10.0       | 10.0 | 12.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     | φD+0.5max. |      |      |
| L'  | L+1.5max.  |     |     |     |      |     |     | L+2.0max.  |      |      |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

SMG Series

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 胜特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mAmps/ 85°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mAmps/ 85°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|-------------------------------------------|--------------------|----------|----------|--------------------|------|-------------------------------------------|--------------------|
| 6.3      | 33       | 5X11               | 0.34 | 77                                        | ESMG6R3E□□330ME11D | 25       | 4.7      | 5X11               | 0.16 | 36                                        | ESMG250E□□4R7ME11D |
|          | 47       | 5X11               | 0.34 | 92                                        | ESMG6R3E□□470ME11D |          | 10       | 5X11               | 0.16 | 53                                        | ESMG250E□□100ME11D |
|          | 100      | 5X11               | 0.34 | 134                                       | ESMG6R3E□□101ME11D |          | 22       | 5X11               | 0.16 | 78                                        | ESMG250E□□220ME11D |
|          | 220      | 5X11               | 0.34 | 200                                       | ESMG6R3E□□221ME11D |          | 33       | 5X11               | 0.16 | 96                                        | ESMG250E□□330ME11D |
|          | 330      | 6.3X11             | 0.34 | 270                                       | ESMG6R3E□□331MF11D |          | 47       | 5X11               | 0.16 | 115                                       | ESMG250E□□470ME11D |
|          | 470      | 6.3X11             | 0.34 | 320                                       | ESMG6R3E□□471MF11D |          | 100      | 6.3X11             | 0.16 | 190                                       | ESMG250E□□101MF11D |
|          | 1,000    | 8X11.5             | 0.34 | 540                                       | ESMG6R3E□□102MHB5D |          | 220      | 8X11.5             | 0.16 | 330                                       | ESMG250E□□221MHB5D |
|          | 2,200    | 10X20              | 0.36 | 1,000                                     | ESMG6R3E□□222MJ20S |          | 330      | 8X11.5             | 0.16 | 440                                       | ESMG250E□□331MHB5D |
|          | 3,300    | 10X20              | 0.38 | 1,185                                     | ESMG6R3E□□332MJ20S |          | 470      | 10X12.5            | 0.16 | 545                                       | ESMG250E□□471MJ20S |
|          | 4,700    | 12.5X20            | 0.40 | 1,545                                     | ESMG6R3E□□472MK20S |          | 1,000    | 10X20              | 0.16 | 955                                       | ESMG250E□□102MJ20S |
|          | 6,800    | 12.5X25            | 0.44 | 1,915                                     | ESMG6R3E□□682MK25S |          | 2,200    | 12.5X25            | 0.18 | 1,540                                     | ESMG250E□□222MK25S |
|          | 10,000   | 16X25              | 0.52 | 2,330                                     | ESMG6R3E□□103ML25S |          | 3,300    | 16X25              | 0.20 | 1,975                                     | ESMG250E□□332ML25S |
|          | 10,000   | 20X25              | 0.46 | 2,310                                     | ESMG6R3E□□103MN25S |          | 3,300    | 20X20              | 0.20 | 1,850                                     | ESMG250E□□332MN20S |
|          | 15,000   | 16X35.5            | 0.62 | 2,845                                     | ESMG6R3E□□153MLP1S |          | 4,700    | 16X31.5            | 0.22 | 2,420                                     | ESMG250E□□472MLN3S |
|          | 15,000   | 20X30              | 0.56 | 2,660                                     | ESMG6R3E□□153MN30S |          | 4,700    | 20X25              | 0.22 | 2,420                                     | ESMG250E□□472MN25S |
|          | 18,000   | 20X35              | 0.62 | 2,890                                     | ESMG6R3E□□183MN35S |          | 5,600    | 20X30              | 0.24 | 2,430                                     | ESMG250E□□562MN30S |
|          | 18,000   | 22X30              | 0.62 | 2,860                                     | ESMG6R3E□□183MP30S |          | 6,800    | 18X35.5            | 0.26 | 2,880                                     | ESMG250E□□682MMP1S |
|          | 22,000   | 18X40              | 0.76 | 3,320                                     | ESMG6R3E□□223MM40S |          | 6,800    | 20X35              | 0.26 | 2,680                                     | ESMG250E□□682MN35S |
|          | 22,000   | 20X40              | 0.70 | 3,130                                     | ESMG6R3E□□223MN40S |          | 6,800    | 22X30              | 0.26 | 2,510                                     | ESMG250E□□682MP30S |
|          | 22,000   | 22X35              | 0.70 | 3,130                                     | ESMG6R3E□□223MP35S |          | 8,200    | 20X40              | 0.30 | 2,810                                     | ESMG250E□□822MN40S |
| 10       | 27,000   | 22X40              | 0.80 | 3,280                                     | ESMG6R3E□□273MP40S | 35       | 8,200    | 22X35              | 0.30 | 2,810                                     | ESMG250E□□822MP35S |
|          | 39,000   | 25.4X40            | 1.04 | 3,560                                     | ESMG6R3E□□393MQ40S |          | 10,000   | 22X40              | 0.34 | 3,240                                     | ESMG250E□□103MP40S |
|          | 22       | 5X11               | 0.24 | 66                                        | ESMG100E□□220ME11D |          | 12,000   | 22X40              | 0.38 | 3,240                                     | ESMG250E□□123MP40S |
|          | 33       | 5X11               | 0.24 | 83                                        | ESMG100E□□330ME11D |          | 15,000   | 25.4X40            | 0.44 | 3,610                                     | ESMG250E□□153MQ40S |
|          | 47       | 5X11               | 0.24 | 100                                       | ESMG100E□□470ME11D |          | 4.7      | 5X11               | 0.14 | 41                                        | ESMG350E□□4R7ME11D |
|          | 100      | 5X11               | 0.24 | 146                                       | ESMG100E□□101ME11D |          | 10       | 5X11               | 0.14 | 59                                        | ESMG350E□□100ME11D |
|          | 220      | 5X11               | 0.24 | 240                                       | ESMG100E□□221ME11D |          | 22       | 5X11               | 0.14 | 88                                        | ESMG350E□□220ME11D |
|          | 330      | 6.3X11             | 0.24 | 290                                       | ESMG100E□□331MF11D |          | 33       | 5X11               | 0.14 | 108                                       | ESMG350E□□330ME11D |
|          | 470      | 6.3X11             | 0.24 | 350                                       | ESMG100E□□471MF11D |          | 47       | 5X11               | 0.14 | 130                                       | ESMG350E□□470ME11D |
|          | 1,000    | 10X12.5            | 0.24 | 650                                       | ESMG100E□□102MJ20S |          | 100      | 6.3X11             | 0.14 | 210                                       | ESMG350E□□101MF11D |
|          | 2,200    | 10X20              | 0.26 | 1,070                                     | ESMG100E□□222MJ20S |          | 220      | 8X11.5             | 0.14 | 385                                       | ESMG350E□□221MHB5D |
|          | 3,300    | 12.5X20            | 0.28 | 1,420                                     | ESMG100E□□332MK20S |          | 330      | 10X12.5            | 0.14 | 490                                       | ESMG350E□□331MJ20S |
|          | 4,700    | 12.5X25            | 0.30 | 1,780                                     | ESMG100E□□472MK25S |          | 470      | 10X16              | 0.14 | 645                                       | ESMG350E□□471MJ16S |
|          | 6,800    | 16X25              | 0.34 | 2,220                                     | ESMG100E□□682ML25S |          | 1,000    | 12.5X20            | 0.14 | 1,145                                     | ESMG350E□□102MK20S |
|          | 6,800    | 20X20              | 0.34 | 2,080                                     | ESMG100E□□682MN20S |          | 2,200    | 16X25              | 0.16 | 1,785                                     | ESMG350E□□222ML25S |
|          | 10,000   | 16X35.5            | 0.42 | 2,670                                     | ESMG100E□□103MLP1S |          | 2,200    | 20X20              | 0.16 | 1,670                                     | ESMG350E□□222MN20S |
|          | 10,000   | 20X25              | 0.42 | 2,410                                     | ESMG100E□□103MN25S |          | 3,300    | 16X35.5            | 0.18 | 2,275                                     | ESMG350E□□332MLP1S |
|          | 12,000   | 20X30              | 0.46 | 2,620                                     | ESMG100E□□123MN30S |          | 3,300    | 20X25              | 0.18 | 2,050                                     | ESMG350E□□332MN25S |
|          | 15,000   | 18X35.5            | 0.52 | 3,080                                     | ESMG100E□□153MMP1S |          | 3,900    | 20X30              | 0.18 | 2,310                                     | ESMG350E□□392MN30S |
|          | 15,000   | 20X35              | 0.52 | 2,870                                     | ESMG100E□□153MN35S |          | 4,700    | 18X35.5            | 0.20 | 2,700                                     | ESMG350E□□472MMP1S |
| 16       | 15,000   | 22X30              | 0.52 | 2,660                                     | ESMG100E□□153MP30S | 50       | 4,700    | 20X35              | 0.20 | 2,510                                     | ESMG350E□□472MN35S |
|          | 18,000   | 22X35              | 0.58 | 3,050                                     | ESMG100E□□183MP35S |          | 4,700    | 22X30              | 0.20 | 2,380                                     | ESMG350E□□472MP30S |
|          | 22,000   | 22X40              | 0.66 | 3,480                                     | ESMG100E□□223MP40S |          | 5,600    | 20X40              | 0.22 | 2,690                                     | ESMG350E□□562MN40S |
|          | 33,000   | 25.4X40            | 0.88 | 3,560                                     | ESMG100E□□333MQ40S |          | 5,600    | 22X35              | 0.22 | 2,690                                     | ESMG350E□□562MP35S |
|          | 10       | 5X11               | 0.20 | 50                                        | ESMG160E□□100ME11D |          | 6,800    | 22X40              | 0.24 | 3,090                                     | ESMG350E□□682MP40S |
|          | 22       | 5X11               | 0.20 | 75                                        | ESMG160E□□220ME11D |          | 10,000   | 25.4X40            | 0.32 | 3,480                                     | ESMG350E□□103MQ40S |
|          | 33       | 5X11               | 0.20 | 91                                        | ESMG160E□□330ME11D |          | 0.10     | 5X11               | 0.12 | 1.3                                       | ESMG500E□□R10ME11D |
|          | 47       | 5X11               | 0.20 | 109                                       | ESMG160E□□470ME11D |          | 0.22     | 5X11               | 0.12 | 2.9                                       | ESMG500E□□R22ME11D |
|          | 100      | 5X11               | 0.20 | 160                                       | ESMG160E□□101ME11D |          | 0.33     | 5X11               | 0.12 | 4.3                                       | ESMG500E□□R33ME11D |
|          | 220      | 6.3X11             | 0.20 | 260                                       | ESMG160E□□221MF11D |          | 0.47     | 5X11               | 0.12 | 6.2                                       | ESMG500E□□R47ME11D |
|          | 330      | 8X11.5             | 0.20 | 370                                       | ESMG160E□□331MHB5D |          | 1.0      | 5X11               | 0.12 | 17                                        | ESMG500E□□R10ME11D |
|          | 470      | 8X11.5             | 0.20 | 440                                       | ESMG160E□□471MHB5D |          | 2.2      | 5X11               | 0.12 | 28                                        | ESMG500E□□R22ME11D |
|          | 1,000    | 10X16              | 0.20 | 785                                       | ESMG160E□□102MJ16S |          | 3.3      | 5X11               | 0.12 | 35                                        | ESMG500E□□R33ME11D |
|          | 2,200    | 12.5X20            | 0.22 | 1,295                                     | ESMG160E□□222MK20S |          | 4.7      | 5X11               | 0.12 | 41                                        | ESMG500E□□R47ME11D |
|          | 3,300    | 12.5X25            | 0.24 | 1,655                                     | ESMG160E□□332MK25S |          | 10       | 5X11               | 0.12 | 60                                        | ESMG500E□□100ME11D |
|          | 4,700    | 16X25              | 0.26 | 2,090                                     | ESMG160E□□472ML25S |          | 22       | 5X11               | 0.12 | 95                                        | ESMG500E□□220ME11D |
|          | 4,700    | 20X20              | 0.26 | 1,960                                     | ESMG160E□□472MN20S |          | 33       | 5X11               | 0.12 | 125                                       | ESMG500E□□330ME11D |
|          | 6,800    | 16X31.5            | 0.30 | 2,520                                     | ESMG160E□□682MLN3S |          | 47       | 6.3X11             | 0.12 | 155                                       | ESMG500E□□470MF11D |
|          | 6,800    | 20X25              | 0.30 | 2,330                                     | ESMG160E□□682MN25S |          | 100      | 8X11.5             | 0.12 | 260                                       | ESMG500E□□101MHB5D |
|          | 8,200    | 20X30              | 0.34 | 2,500                                     | ESMG160E□□822MN30S |          | 220      | 10X12.5            | 0.12 | 430                                       | ESMG500E□□221MJ20S |
|          | 10,000   | 18X35.5            | 0.38 | 2,920                                     | ESMG160E□□103MMP1S |          | 330      | 10X16              | 0.12 | 585                                       | ESMG500E□□331MJ16S |
|          | 10,000   | 20X35              | 0.38 | 2,720                                     | ESMG160E□□103MN35S |          | 470      | 10X20              | 0.12 | 755                                       | ESMG500E□□471MJ20S |
|          | 10,000   | 22X30              | 0.38 | 2,660                                     | ESMG160E□□103MP30S |          | 1,000    | 12.5X25            | 0.12 | 1,340                                     | ESMG500E□□102MK25S |
|          | 12,000   | 20X40              | 0.42 | 2,900                                     | ESMG160E□□123MN40S |          | 1,500    | 20X20              | 0.12 | 1,570                                     | ESMG500E□□152MN20S |
|          | 12,000   | 22X35              | 0.42 | 2,900                                     | ESMG160E□□123MP35S |          | 2,200    | 16X35.5            | 0.14 | 2,075                                     | ESMG500E□□222MLP1S |
|          | 15,000   | 22X40              | 0.48 | 3,380                                     | ESMG160E□□153MP40S |          | 2,200    | 20X25              | 0.14 | 1,880                                     | ESMG500E□□222MN25S |
|          | 22,000   | 25.4X40            | 0.62 | 3,720                                     | ESMG160E□□223MQ40S |          | 2,700    | 20X30              | 0.14 | 2,150                                     | ESMG500E□□272MN30S |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

SMG Series

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 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

□ is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mAmps/ 85°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mAmps/ 85°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|------------------------------------------|--------------------|----------|----------|--------------------|------|------------------------------------------|--------------------|
| 50       | 3,300    | 18X35.5            | 0.16 | 2,500                                    | ESMG500E□□332MMP1S | 200      | 22       | 10X20              | 0.20 | 170                                      | ESMG201E□□220MJ20S |
|          | 3,300    | 20X35              | 0.16 | 2,420                                    | ESMG500E□□332MN35S |          | 33       | 10X20              | 0.20 | 205                                      | ESMG201E□□330MJ20S |
|          | 3,300    | 22X30              | 0.16 | 2,420                                    | ESMG500E□□332MP30S |          | 47       | 12.5X20            | 0.20 | 270                                      | ESMG201E□□470MK20S |
|          | 3,900    | 20X40              | 0.16 | 2,590                                    | ESMG500E□□392MN40S |          | 100      | 16X25              | 0.20 | 475                                      | ESMG201E□□101ML25S |
|          | 3,900    | 22X35              | 0.16 | 2,590                                    | ESMG500E□□392MP35S |          | 100      | 20X20              | 0.15 | 460                                      | ESMG201E□□101MN20S |
|          | 4,700    | 22X40              | 0.18 | 2,960                                    | ESMG500E□□472MP40S |          | 180      | 20X25              | 0.15 | 660                                      | ESMG201E□□181MN25S |
|          | 6,800    | 25.4X40            | 0.22 | 3,360                                    | ESMG500E□□682MQ40S |          | 220      | 18X35.5            | 0.20 | 810                                      | ESMG201E□□221MMP1S |
| 63       | 10       | 5X11               | 0.09 | 65                                       | ESMG630E□□100ME11D |          | 220      | 20X30              | 0.15 | 750                                      | ESMG201E□□221MN30S |
|          | 22       | 5X11               | 0.09 | 100                                      | ESMG630E□□220ME11D |          | 270      | 20X30              | 0.15 | 830                                      | ESMG201E□□271MN30S |
|          | 33       | 6.3X11             | 0.09 | 140                                      | ESMG630E□□330MF11D |          | 330      | 20X35              | 0.15 | 1,070                                    | ESMG201E□□331MP35S |
|          | 47       | 6.3X11             | 0.09 | 170                                      | ESMG630E□□470MF11D |          | 330      | 22X30              | 0.15 | 1,070                                    | ESMG201E□□331MP30S |
|          | 100      | 10X12.5            | 0.09 | 300                                      | ESMG630E□□101MJC5S |          | 390      | 20X40              | 0.15 | 1,190                                    | ESMG201E□□391MN40S |
|          | 220      | 10X16              | 0.09 | 490                                      | ESMG630E□□221MJ16S |          | 390      | 22X30              | 0.15 | 1,160                                    | ESMG201E□□391MP30S |
|          | 330      | 10X20              | 0.09 | 710                                      | ESMG630E□□331MJ20S |          | 470      | 22X40              | 0.15 | 1,350                                    | ESMG201E□□471MP40S |
|          | 470      | 12.5X20            | 0.09 | 900                                      | ESMG630E□□471MK20S |          | 560      | 22X40              | 0.15 | 1,430                                    | ESMG201E□□561MP40S |
|          | 820      | 20X20              | 0.09 | 1,370                                    | ESMG630E□□821MN20S |          | 680      | 25.4X40            | 0.15 | 1,620                                    | ESMG201E□□681MQ40S |
|          | 1,000    | 16X25              | 0.09 | 1,300                                    | ESMG630E□□102ML25S | 250      | 2.2      | 6.3X11             | 0.20 | 32                                       | ESMG251E□□2R2MF11D |
|          | 1,000    | 20X25              | 0.09 | 1,600                                    | ESMG630E□□102MN25S |          | 3.3      | 8X11.5             | 0.20 | 46                                       | ESMG251E□□3R3MHB5D |
|          | 1,500    | 20X30              | 0.09 | 1,850                                    | ESMG630E□□152MN30S |          | 4.7      | 8X11.5             | 0.20 | 55                                       | ESMG251E□□4R7MHB5D |
|          | 2,200    | 20X35              | 0.11 | 2,330                                    | ESMG630E□□222MN35S |          | 10       | 10X16              | 0.20 | 105                                      | ESMG251E□□100MJ16S |
|          | 2,200    | 22X30              | 0.11 | 2,190                                    | ESMG630E□□222MP30S |          | 22       | 10X20              | 0.20 | 170                                      | ESMG251E□□220MJ20S |
|          | 2,700    | 20X40              | 0.11 | 2,640                                    | ESMG630E□□272MN40S |          | 33       | 12.5X20            | 0.20 | 230                                      | ESMG251E□□330MK20S |
|          | 3,300    | 22X40              | 0.13 | 2,810                                    | ESMG630E□□332MP40S |          | 47       | 12.5X25            | 0.20 | 295                                      | ESMG251E□□470MK25S |
|          | 3,900    | 25.4X40            | 0.13 | 3,100                                    | ESMG630E□□392MQ40S |          | 82       | 20X20              | 0.15 | 420                                      | ESMG251E□□820MN20S |
| 100      | 0.10     | 5X11               | 0.08 | 2.1                                      | ESMG101E□□R10ME11D |          | 100      | 16X31.5            | 0.20 | 515                                      | ESMG251E□□101MLN3S |
|          | 0.22     | 5X11               | 0.08 | 4.7                                      | ESMG101E□□R22ME11D |          | 100      | 20X25              | 0.15 | 490                                      | ESMG251E□□101MN25S |
|          | 0.33     | 5X11               | 0.08 | 7.0                                      | ESMG101E□□R33ME11D |          | 120      | 20X25              | 0.15 | 530                                      | ESMG251E□□121MN25S |
|          | 0.47     | 5X11               | 0.08 | 10                                       | ESMG101E□□R47ME11D |          | 180      | 20X30              | 0.15 | 680                                      | ESMG251E□□181MN30S |
|          | 1.0      | 5X11               | 0.08 | 21                                       | ESMG101E□□R10ME11D |          | 220      | 18X40              | 0.20 | 825                                      | ESMG251E□□221MM40S |
|          | 2.2      | 5X11               | 0.08 | 30                                       | ESMG101E□□R22ME11D |          | 220      | 20X35              | 0.15 | 780                                      | ESMG251E□□221MN35S |
|          | 3.3      | 5X11               | 0.08 | 40                                       | ESMG101E□□R33ME11D |          | 220      | 22X30              | 0.15 | 820                                      | ESMG251E□□221MP30S |
|          | 4.7      | 5X11               | 0.08 | 45                                       | ESMG101E□□R47ME11D |          | 270      | 20X40              | 0.15 | 880                                      | ESMG251E□□271MN40S |
|          | 10       | 6.3X11             | 0.08 | 75                                       | ESMG101E□□100MF11D |          | 270      | 22X35              | 0.15 | 880                                      | ESMG251E□□271MP35S |
|          | 22       | 8X11.5             | 0.08 | 130                                      | ESMG101E□□220MHB5D |          | 330      | 22X40              | 0.15 | 1,060                                    | ESMG251E□□331MP40S |
|          | 33       | 8X11.5             | 0.08 | 180                                      | ESMG101E□□330MHB5D |          | 390      | 25.4X40            | 0.15 | 1,200                                    | ESMG251E□□391MQ40S |
|          | 47       | 10X12.5            | 0.08 | 230                                      | ESMG101E□□470MJC5S | 315      | 47       | 20X20              | 0.15 | 310                                      | ESMG315E□□470MN20S |
|          | 100      | 10X20              | 0.08 | 370                                      | ESMG101E□□101MJ20S |          | 68       | 20X25              | 0.15 | 400                                      | ESMG315E□□680MN25S |
|          | 220      | 12.5X25            | 0.08 | 620                                      | ESMG101E□□221MK25S |          | 82       | 20X25              | 0.15 | 440                                      | ESMG315E□□820MN25S |
|          | 330      | 12.5X25            | 0.08 | 760                                      | ESMG101E□□331MK25S |          | 100      | 20X30              | 0.15 | 500                                      | ESMG315E□□101MN30S |
|          | 330      | 20X20              | 0.08 | 870                                      | ESMG101E□□331MN20S |          | 120      | 20X30              | 0.15 | 550                                      | ESMG315E□□121MN30S |
|          | 470      | 16X25              | 0.08 | 1,000                                    | ESMG101E□□471ML25S |          | 180      | 20X40              | 0.15 | 720                                      | ESMG315E□□181MN40S |
|          | 680      | 20X30              | 0.08 | 1,360                                    | ESMG101E□□681MN30S |          | 180      | 22X35              | 0.15 | 720                                      | ESMG315E□□181MP35S |
|          | 820      | 22X30              | 0.08 | 1,540                                    | ESMG101E□□821MP30S |          | 220      | 22X40              | 0.15 | 810                                      | ESMG315E□□221MP40S |
|          | 1,000    | 18X40              | 0.08 | 1,380                                    | ESMG101E□□102MM40S |          | 270      | 25.4X40            | 0.15 | 920                                      | ESMG315E□□271MQ40S |
|          | 1,000    | 20X35              | 0.08 | 1,720                                    | ESMG101E□□102MN35S | 350      | 0.47     | 6.3X11             | 0.24 | 15                                       | ESMG351E□□R47MF11D |
|          | 1,200    | 22X40              | 0.08 | 1,980                                    | ESMG101E□□122MP40S |          | 1.0      | 6.3X11             | 0.24 | 22                                       | ESMG351E□□R06MF11D |
|          | 1,800    | 25.4X40            | 0.08 | 2,490                                    | ESMG101E□□182MQ40S |          | 2.2      | 8X11.5             | 0.24 | 38                                       | ESMG351E□□2R2MHB5D |
| 160      | 3.3      | 6.3X11             | 0.20 | 40                                       | ESMG161E□□3R3MF11D |          | 3.3      | 8X11.5             | 0.24 | 46                                       | ESMG351E□□3R3MHB5D |
|          | 4.7      | 6.3X11             | 0.20 | 48                                       | ESMG161E□□4R7MF11D |          | 4.7      | 10X12.5            | 0.24 | 65                                       | ESMG351E□□4R7MJC5S |
|          | 10       | 10X12.5            | 0.20 | 94                                       | ESMG161E□□100MJC5S |          | 10       | 10X20              | 0.24 | 115                                      | ESMG351E□□100MJ20S |
|          | 22       | 10X20              | 0.20 | 170                                      | ESMG161E□□220MJ20S |          | 22       | 12.5X20            | 0.24 | 185                                      | ESMG351E□□220MK20S |
|          | 33       | 10X20              | 0.20 | 205                                      | ESMG161E□□330MJ20S |          | 33       | 16X25              | 0.24 | 275                                      | ESMG351E□□330ML25S |
|          | 47       | 12.5X20            | 0.20 | 270                                      | ESMG161E□□470MK20S |          | 47       | 16X25              | 0.24 | 325                                      | ESMG351E□□470ML25S |
|          | 100      | 12.5X25            | 0.20 | 430                                      | ESMG161E□□101MK25S |          | 47       | 20X20              | 0.15 | 310                                      | ESMG351E□□470MN20S |
|          | 220      | 16X31.5            | 0.20 | 760                                      | ESMG161E□□221MLN3S |          | 68       | 20X25              | 0.15 | 400                                      | ESMG351E□□680MN25S |
|          | 220      | 20X25              | 0.15 | 730                                      | ESMG161E□□221MN25S |          | 100      | 18X31.5            | 0.24 | 530                                      | ESMG351E□□101MMN3S |
|          | 330      | 18X35.5            | 0.20 | 995                                      | ESMG161E□□331MMP1S |          | 100      | 20X30              | 0.15 | 500                                      | ESMG351E□□101MN30S |
|          | 330      | 20X30              | 0.15 | 920                                      | ESMG161E□□331MN30S |          | 120      | 20X35              | 0.15 | 560                                      | ESMG351E□□121MN35S |
|          | 390      | 20X35              | 0.15 | 1,160                                    | ESMG161E□□391MN35S |          | 220      | 25.4X40            | 0.15 | 890                                      | ESMG351E□□221MQ40S |
|          | 390      | 22X30              | 0.15 | 1,160                                    | ESMG161E□□391MP30S | 400      | 1.0      | 6.3X11             | 0.24 | 22                                       | ESMG401E□□1R0MF11D |
|          | 470      | 20X40              | 0.15 | 1,340                                    | ESMG161E□□471MN40S |          | 2.2      | 8X11.5             | 0.24 | 38                                       | ESMG401E□□2R2MHB5D |
|          | 470      | 22X35              | 0.15 | 1,340                                    | ESMG161E□□471MP35S |          | 3.3      | 10X12.5            | 0.24 | 54                                       | ESMG401E□□3R3MJC5S |
|          | 560      | 22X40              | 0.15 | 1,470                                    | ESMG161E□□561MP40S |          | 4.7      | 10X16              | 0.24 | 71                                       | ESMG401E□□4R7MJ16S |
|          | 680      | 25.4X40            | 0.15 | 1,570                                    | ESMG161E□□681MQ40S |          | 10       | 10X20              | 0.24 | 115                                      | ESMG401E□□100MJ20S |
|          | 3.3      | 6.3X11             | 0.20 | 40                                       | ESMG201E□□3R3MF11D |          | 22       | 12.5X25            | 0.24 | 205                                      | ESMG401E□□220MK25S |
|          | 4.7      | 8X11.5             | 0.20 | 55                                       | ESMG201E□□4R7MHB5D |          | 33       | 16X25              | 0.24 | 275                                      | ESMG401E□□330ML25S |
| 200      | 10       | 10X12.5            | 0.20 | 94                                       | ESMG201E□□100MJC5S |          | 33       | 20X20              | 0.15 | 260                                      | ESMG401E□□330MN20S |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Downsized, 85°C

SMG Series

## ◆STANDARD RATINGS

□ is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|------------------------------------------------------|--------------------|----------|----------|--------------------|------|------------------------------------------------------|--------------------|
| 400      | 47       | 16×31.5            | 0.24 | 350                                                  | ESMG401E□□470MLN3S | 450      | 22       | 16×25              | 0.24 | 165                                                  | ESMG451E□□220ML25S |
|          | 56       | 20×25              | 0.15 | 350                                                  | ESMG401E□□560MN25S |          | 22       | 20×20              | 0.20 | 180                                                  | ESMG451E□□220MN20S |
|          | 68       | 20×30              | 0.15 | 420                                                  | ESMG401E□□680MN30S |          | 33       | 16×31.5            | 0.24 | 215                                                  | ESMG451E□□330MLN3S |
|          | 100      | 20×35              | 0.15 | 520                                                  | ESMG401E□□101MN35S |          | 33       | 20×25              | 0.20 | 240                                                  | ESMG451E□□330MN25S |
|          | 100      | 22×30              | 0.15 | 520                                                  | ESMG401E□□101MP30S |          | 47       | 16×35.5            | 0.24 | 265                                                  | ESMG451E□□470MLP1S |
|          | 120      | 20×40              | 0.15 | 580                                                  | ESMG401E□□121MN40S |          | 47       | 20×25              | 0.20 | 290                                                  | ESMG451E□□470MN25S |
|          | 120      | 22×35              | 0.15 | 580                                                  | ESMG401E□□121MP35S |          | 56       | 20×30              | 0.20 | 320                                                  | ESMG451E□□560MN30S |
|          | 180      | 25.4×40            | 0.15 | 790                                                  | ESMG401E□□181MQ40S |          | 68       | 20×35              | 0.20 | 370                                                  | ESMG451E□□680MN35S |
| 450      | 0.47     | 10×12.5            | 0.24 | 13                                                   | ESMG451E□□R47MJC5S |          | 68       | 22×30              | 0.20 | 370                                                  | ESMG451E□□680MP30S |
|          | 1.0      | 10×12.5            | 0.24 | 19                                                   | ESMG451E□□1R0MJC5S |          | 82       | 20×40              | 0.20 | 420                                                  | ESMG451E□□820MN40S |
|          | 2.2      | 10×12.5            | 0.24 | 32                                                   | ESMG451E□□2R2MJC5S |          | 82       | 22×35              | 0.20 | 420                                                  | ESMG451E□□820MP35S |
|          | 3.3      | 10×16              | 0.24 | 44                                                   | ESMG451E□□3R3MJ16S |          | 100      | 22×40              | 0.20 | 470                                                  | ESMG451E□□101MP40S |
|          | 4.7      | 10×20              | 0.24 | 56                                                   | ESMG451E□□4R7MJ20S |          | 120      | 25.4×40            | 0.20 | 520                                                  | ESMG451E□□121MQ40S |
|          | 10       | 12.5×20            | 0.24 | 91                                                   | ESMG451E□□100MK20S |          |          |                    |      |                                                      |                    |
|          |          |                    |      |                                                      |                    |          |          |                    |      |                                                      |                    |

□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

(φ5 to φ18)

| Capacitance (μF) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|------|------|------|------|------|------|
| 0.1 to 4.7       | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 47         | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000     | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to         | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

(φ20 to φ25.4)

| Rated Voltage (V <sub>dc</sub> ) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|----------------------------------|------|------|------|------|------|------|
| 6.3 to 50                        | 0.95 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |
| 63 to 100                        | 0.92 | 1.00 | 1.07 | 1.13 | 1.19 | 1.20 |
| 160 to 250                       | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| 315 to 450                       | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)





## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Standard, Downsized, 105°C

KMG Series

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mAmps/105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mAmps/105°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|------------------------------------------|--------------------|----------|----------|--------------------|------|------------------------------------------|--------------------|
| 6.3      | 33       | 5×11               | 0.34 | 54                                       | EKMG6R3E□□330ME11D | 35       | 3,300    | 16×35.5            | 0.18 | 1,610                                    | EKMG350E□□332MLP1S |
|          | 47       | 5×11               | 0.34 | 64                                       | EKMG6R3E□□470ME11D |          | 4,700    | 18×35.5            | 0.20 | 1,910                                    | EKMG350E□□472MMP1S |
|          | 100      | 5×11               | 0.34 | 94                                       | EKMG6R3E□□101ME11D | 50       | 0.10     | 5×11               | 0.12 | 1.3                                      | EKMG500E□□R10ME11D |
|          | 220      | 5×11               | 0.34 | 140                                      | EKMG6R3E□□221ME11D |          | 0.22     | 5×11               | 0.12 | 2.9                                      | EKMG500E□□R22ME11D |
|          | 330      | 6.3×11             | 0.34 | 190                                      | EKMG6R3E□□331MF11D |          | 0.33     | 5×11               | 0.12 | 4.3                                      | EKMG500E□□R33ME11D |
|          | 470      | 6.3×11             | 0.34 | 230                                      | EKMG6R3E□□471MF11D |          | 0.47     | 5×11               | 0.12 | 6.2                                      | EKMG500E□□R47ME11D |
|          | 1,000    | 8×11.5             | 0.34 | 380                                      | EKMG6R3E□□102MHB5D |          | 1.0      | 5×11               | 0.12 | 13                                       | EKMG500E□□1R0ME11D |
|          | 2,200    | 10×20              | 0.36 | 710                                      | EKMG6R3E□□222MJ20S |          | 2.2      | 5×11               | 0.12 | 20                                       | EKMG500E□□2R2ME11D |
|          | 3,300    | 10×20              | 0.38 | 840                                      | EKMG6R3E□□332MJ20S |          | 3.3      | 5×11               | 0.12 | 25                                       | EKMG500E□□3R3ME11D |
|          | 4,700    | 12.5×20            | 0.40 | 1,090                                    | EKMG6R3E□□472MK20S |          | 4.7      | 5×11               | 0.12 | 30                                       | EKMG500E□□4R7ME11D |
|          | 6,800    | 12.5×25            | 0.44 | 1,350                                    | EKMG6R3E□□682MK25S |          | 10       | 5×11               | 0.12 | 40                                       | EKMG500E□□100ME11D |
|          | 10,000   | 16×25              | 0.52 | 1,650                                    | EKMG6R3E□□103ML25S |          | 22       | 5×11               | 0.12 | 65                                       | EKMG500E□□220ME11D |
|          | 15,000   | 16×35.5            | 0.62 | 2,010                                    | EKMG6R3E□□153MLP1S |          | 33       | 5×11               | 0.12 | 90                                       | EKMG500E□□331MJ16S |
|          | 2,2000   | 18×40              | 0.76 | 2,350                                    | EKMG6R3E□□223MM40S |          | 47       | 6.3×11             | 0.12 | 110                                      | EKMG500E□□470MF11D |
| 10       | 22       | 5×11               | 0.24 | 46                                       | EKMG100E□□220ME11D | 63       | 100      | 8×11.5             | 0.12 | 180                                      | EKMG500E□□101MHB5D |
|          | 33       | 5×11               | 0.24 | 57                                       | EKMG100E□□330ME11D |          | 220      | 10×12.5            | 0.12 | 300                                      | EKMG500E□□221MJC5S |
|          | 47       | 5×11               | 0.24 | 68                                       | EKMG100E□□470ME11D |          | 330      | 10×16              | 0.12 | 410                                      | EKMG500E□□331MJ16S |
|          | 100      | 5×11               | 0.24 | 100                                      | EKMG100E□□101ME11D |          | 470      | 10×20              | 0.12 | 530                                      | EKMG500E□□471MJ20S |
|          | 220      | 6.3×11             | 0.24 | 170                                      | EKMG100E□□221MF11D |          | 1,000    | 12.5×25            | 0.12 | 950                                      | EKMG500E□□102MK25S |
|          | 330      | 6.3×11             | 0.24 | 200                                      | EKMG100E□□331MF11D |          | 2,200    | 16×35.5            | 0.14 | 1,470                                    | EKMG500E□□222MLP1S |
|          | 470      | 8×11.5             | 0.24 | 250                                      | EKMG100E□□471MHB5D |          | 3,300    | 18×35.5            | 0.16 | 1,770                                    | EKMG500E□□332MMP1S |
|          | 1,000    | 10×12.5            | 0.24 | 460                                      | EKMG100E□□102MJC5S | 100      | 10       | 5×11               | 0.10 | 46                                       | EKMG630E□□100ME11D |
|          | 2,200    | 10×20              | 0.26 | 760                                      | EKMG100E□□222MJ20S |          | 22       | 5×11               | 0.10 | 71                                       | EKMG630E□□220ME11D |
|          | 3,300    | 12.5×20            | 0.28 | 1,000                                    | EKMG100E□□332MK20S |          | 33       | 6.3×11             | 0.10 | 100                                      | EKMG630E□□330MF11D |
|          | 4,700    | 12.5×25            | 0.30 | 1,260                                    | EKMG100E□□472MK25S |          | 47       | 6.3×11             | 0.10 | 120                                      | EKMG630E□□470MF11D |
|          | 6,800    | 16×25              | 0.34 | 1,570                                    | EKMG100E□□682ML25S |          | 100      | 10×12.5            | 0.10 | 215                                      | EKMG630E□□101MJC5S |
|          | 10,000   | 16×35.5            | 0.42 | 1,890                                    | EKMG100E□□103MLP1S |          | 220      | 10×16              | 0.10 | 335                                      | EKMG630E□□221MJ16S |
|          | 15,000   | 18×35.5            | 0.52 | 2,180                                    | EKMG100E□□153MMP1S |          | 330      | 10×20              | 0.10 | 510                                      | EKMG630E□□331MJ20S |
| 16       | 10       | 5×11               | 0.20 | 34                                       | EKMG160E□□100ME11D | 160      | 470      | 12.5×20            | 0.10 | 640                                      | EKMG630E□□471MK20S |
|          | 22       | 5×11               | 0.20 | 51                                       | EKMG160E□□220ME11D |          | 1,000    | 16×25              | 0.10 | 930                                      | EKMG630E□□102ML25S |
|          | 33       | 5×11               | 0.20 | 63                                       | EKMG160E□□330ME11D | 200      | 0.10     | 5×11               | 0.08 | 1.5                                      | EKMG101E□□R10ME11D |
|          | 47       | 5×11               | 0.20 | 75                                       | EKMG160E□□470ME11D |          | 0.22     | 5×11               | 0.08 | 3.4                                      | EKMG101E□□R22ME11D |
|          | 100      | 5×11               | 0.20 | 110                                      | EKMG160E□□101ME11D |          | 0.33     | 5×11               | 0.08 | 5.0                                      | EKMG101E□□R33ME11D |
|          | 220      | 6.3×11             | 0.20 | 180                                      | EKMG160E□□221MF11D |          | 0.47     | 5×11               | 0.08 | 7.1                                      | EKMG101E□□R47ME11D |
|          | 330      | 8×11.5             | 0.20 | 260                                      | EKMG160E□□331MHB5D | 250      | 1.0      | 5×11               | 0.08 | 15                                       | EKMG101E□□1R0ME11D |
|          | 470      | 8×11.5             | 0.20 | 310                                      | EKMG160E□□471MHB5D |          | 2.2      | 5×11               | 0.08 | 21                                       | EKMG101E□□2R2ME11D |
|          | 1,000    | 10×16              | 0.20 | 560                                      | EKMG160E□□102MJ16S |          | 3.3      | 5×11               | 0.08 | 29                                       | EKMG101E□□3R3ME11D |
|          | 2,200    | 12.5×20            | 0.22 | 920                                      | EKMG160E□□222MK20S |          | 4.7      | 5×11               | 0.08 | 32                                       | EKMG101E□□4R7ME11D |
|          | 3,300    | 12.5×25            | 0.24 | 1,170                                    | EKMG160E□□332MK25S |          | 10       | 6.3×11             | 0.08 | 54                                       | EKMG101E□□100MF11D |
|          | 4,700    | 16×25              | 0.26 | 1,480                                    | EKMG160E□□472ML25S |          | 22       | 8×11.5             | 0.08 | 93                                       | EKMG101E□□220MHB5D |
|          | 6,800    | 16×31.5            | 0.30 | 1,780                                    | EKMG160E□□682MLN3S |          | 33       | 8×11.5             | 0.08 | 130                                      | EKMG101E□□330MHB5D |
|          | 10,000   | 18×35.5            | 0.38 | 2,060                                    | EKMG160E□□103MMP1S |          | 47       | 10×12.5            | 0.08 | 165                                      | EKMG101E□□470MJC5S |
| 25       | 4.7      | 5×11               | 0.16 | 25                                       | EKMG250E□□4R7ME11D |          | 100      | 10×20              | 0.08 | 265                                      | EKMG101E□□101MJ20S |
|          | 10       | 5×11               | 0.16 | 36                                       | EKMG250E□□100ME11D |          | 220      | 12.5×25            | 0.08 | 440                                      | EKMG101E□□221MK25S |
|          | 22       | 5×11               | 0.16 | 54                                       | EKMG250E□□220ME11D | 160      | 330      | 16×25              | 0.08 | 540                                      | EKMG101E□□331ML25S |
|          | 33       | 5×11               | 0.16 | 67                                       | EKMG250E□□330ME11D |          | 470      | 16×31.5            | 0.08 | 715                                      | EKMG101E□□471MLN3S |
|          | 47       | 5×11               | 0.16 | 80                                       | EKMG250E□□470ME11D |          | 1,000    | 18×40              | 0.08 | 985                                      | EKMG101E□□102MM40S |
|          | 100      | 6.3×11             | 0.16 | 130                                      | EKMG250E□□101MF11D | 200      | 3.3      | 6.3×11             | 0.20 | 28                                       | EKMG161E□□3R3MF11D |
|          | 220      | 8×11.5             | 0.16 | 230                                      | EKMG250E□□221MHB5D |          | 4.7      | 6.3×11             | 0.20 | 34                                       | EKMG161E□□4R7MF11D |
|          | 330      | 8×11.5             | 0.16 | 310                                      | EKMG250E□□331MHB5D |          | 10       | 10×12.5            | 0.20 | 67                                       | EKMG161E□□100MJC5S |
|          | 470      | 10×12.5            | 0.16 | 380                                      | EKMG250E□□471MJC5S |          | 22       | 10×20              | 0.20 | 120                                      | EKMG161E□□220MJ20S |
|          | 1,000    | 10×20              | 0.16 | 680                                      | EKMG250E□□102MJ20S |          | 33       | 10×20              | 0.20 | 145                                      | EKMG161E□□330MJ20S |
|          | 2,200    | 12.5×25            | 0.18 | 1,090                                    | EKMG250E□□222MK25S |          | 47       | 12.5×20            | 0.20 | 195                                      | EKMG161E□□470MK20S |
|          | 3,300    | 16×25              | 0.20 | 1,400                                    | EKMG250E□□332ML25S |          | 100      | 16×25              | 0.20 | 335                                      | EKMG161E□□101ML25S |
|          | 4,700    | 16×31.5            | 0.22 | 1,710                                    | EKMG250E□□472MLN3S |          | 220      | 16×31.5            | 0.20 | 540                                      | EKMG161E□□221MLN3S |
|          | 6,800    | 18×35.5            | 0.26 | 2,040                                    | EKMG250E□□682MMP1S |          | 330      | 18×35.5            | 0.20 | 705                                      | EKMG161E□□331MMP1S |
| 35       | 4.7      | 5×11               | 0.14 | 28                                       | EKMG350E□□4R7ME11D | 250      | 3.3      | 6.3×11             | 0.20 | 28                                       | EKMG201E□□3R3MF11D |
|          | 10       | 5×11               | 0.14 | 41                                       | EKMG350E□□100ME11D |          | 4.7      | 8×11.5             | 0.20 | 39                                       | EKMG201E□□4R7MHB5D |
|          | 22       | 5×11               | 0.14 | 61                                       | EKMG350E□□220ME11D |          | 10       | 10×16              | 0.20 | 74                                       | EKMG201E□□100MJ16S |
|          | 33       | 5×11               | 0.14 | 75                                       | EKMG350E□□330ME11D |          | 22       | 10×20              | 0.20 | 120                                      | EKMG201E□□220MJ20S |
|          | 47       | 5×11               | 0.14 | 90                                       | EKMG350E□□470ME11D |          | 33       | 12.5×20            | 0.20 | 160                                      | EKMG201E□□330MK20S |
|          | 100      | 6.3×11             | 0.14 | 150                                      | EKMG350E□□101MF11D |          | 47       | 12.5×20            | 0.20 | 195                                      | EKMG201E□□470MK20S |
|          | 220      | 8×11.5             | 0.14 | 270                                      | EKMG350E□□221MHB5D |          | 100      | 16×25              | 0.20 | 335                                      | EKMG201E□□101ML25S |
|          | 330      | 10×12.5            | 0.14 | 350                                      | EKMG350E□□331MJC5S |          | 220      | 18×35.5            | 0.20 | 575                                      | EKMG201E□□221MMP1S |
|          | 470      | 10×16              | 0.14 | 460                                      | EKMG350E□□471MJ16S | 250      | 2.2      | 6.3×11             | 0.20 | 23                                       | EKMG251E□□2R2MF11D |
|          | 1,000    | 12.5×20            | 0.14 | 810                                      | EKMG350E□□102MK20S |          | 3.3      | 8×11.5             | 0.20 | 32                                       | EKMG251E□□3R3MHB5D |
|          | 2,200    | 16×25              | 0.16 | 1,260                                    | EKMG350E□□222ML25S |          | 4.7      | 8×11.5             | 0.20 | 39                                       | EKMG251E□□4R7MHB5D |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Standard, Downsized, 105°C

KMG Series

## ◆STANDARD RATINGS

□ is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|-------------------------------------------------------|--------------------|----------|----------|--------------------|------|-------------------------------------------------------|--------------------|
| 250      | 10       | 10×16              | 0.20 | 74                                                    | EKMG251E□□100MJ16S | 400      | 1.0      | 6.3×11             | 0.24 | 15                                                    | EKMG401E□□1R0MF11D |
|          | 22       | 12.5×20            | 0.20 | 130                                                   | EKMG251E□□220MK20S |          | 2.2      | 8×11.5             | 0.24 | 26                                                    | EKMG401E□□2R2MHB5D |
|          | 33       | 12.5×20            | 0.20 | 160                                                   | EKMG251E□□330MK20S |          | 3.3      | 10×12.5            | 0.24 | 38                                                    | EKMG401E□□3R3MJC5S |
|          | 47       | 12.5×25            | 0.20 | 210                                                   | EKMG251E□□470MK25S |          | 4.7      | 10×16              | 0.24 | 50                                                    | EKMG401E□□4R7MJ16S |
|          | 100      | 16×31.5            | 0.20 | 365                                                   | EKMG251E□□101MLN3S |          | 10       | 10×20              | 0.24 | 80                                                    | EKMG401E□□100MJ20S |
|          | 220      | 18×40              | 0.20 | 585                                                   | EKMG251E□□221MM40S |          | 22       | 12.5×25            | 0.24 | 145                                                   | EKMG401E□□220MK25S |
| 350      | 0.47     | 6.3×11             | 0.24 | 11                                                    | EKMG351E□□47MF11D  |          | 33       | 16×25              | 0.24 | 195                                                   | EKMG401E□□330ML25S |
|          | 1.0      | 6.3×11             | 0.24 | 15                                                    | EKMG351E□□1R0MF11D |          | 47       | 16×31.5            | 0.24 | 250                                                   | EKMG401E□□470MLN3S |
|          | 2.2      | 8×11.5             | 0.24 | 26                                                    | EKMG351E□□2R2MHB5D |          | 100      | 16×40              | 0.24 | 350                                                   | EKMG401E□□101ML40S |
|          | 3.3      | 10×12.5            | 0.24 | 38                                                    | EKMG351E□□3R3MJC5S | 450      | 0.47     | 10×12.5            | 0.24 | 9.0                                                   | EKMG451E□□47MJ16S  |
|          | 4.7      | 10×16              | 0.24 | 50                                                    | EKMG351E□□4R7MJ16S |          | 1.0      | 10×12.5            | 0.24 | 13                                                    | EKMG451E□□1R0MJC5S |
|          | 10       | 10×20              | 0.24 | 80                                                    | EKMG351E□□100MJ20S |          | 2.2      | 10×12.5            | 0.24 | 23                                                    | EKMG451E□□2R2MJC5S |
|          | 22       | 12.5×20            | 0.24 | 130                                                   | EKMG351E□□220MK20S |          | 3.3      | 10×16              | 0.24 | 31                                                    | EKMG451E□□3R3MJ16S |
|          | 33       | 16×25              | 0.24 | 195                                                   | EKMG351E□□330ML25S |          | 4.7      | 10×20              | 0.24 | 40                                                    | EKMG451E□□4R7MJ20S |
|          | 47       | 16×25              | 0.24 | 230                                                   | EKMG351E□□470ML25S |          | 10       | 12.5×20            | 0.24 | 65                                                    | EKMG451E□□100MK20S |
|          | 100      | 18×31.5            | 0.24 | 375                                                   | EKMG351E□□101MMN3S |          | 22       | 16×25              | 0.24 | 115                                                   | EKMG451E□□220ML25S |
|          |          |                    |      |                                                       |                    |          | 33       | 16×31.5            | 0.24 | 155                                                   | EKMG451E□□330MLN3S |
|          |          |                    |      |                                                       |                    |          | 47       | 16×35.5            | 0.24 | 185                                                   | EKMG451E□□470MLP1S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|------|------|------|------|------|------|
| 0.1 to 4.7       | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 47         | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000     | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to         | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

勝特力材料 886-3-5753170  
 胜特力电子(上海) 86-21-54151736  
 胜特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Bi-polarized, 85°C

## SME-BP Series

- Standard Bi-polarized type
- Endurance : 2,000 hours at 85°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

SME-BP

Bi-polarized  
SME

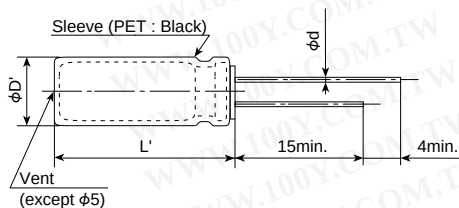
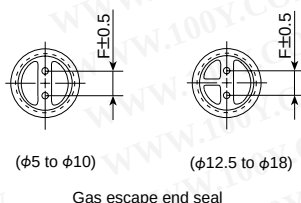


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                    |                                      |      |      |      |      |                            |      |      |      |  |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|----------------------------|------|------|------|--|
| Category                                               | Temperature Range                                                                                                                                                                                                                  |                                      |      |      |      |      |                            |      |      |      |  |
| Temperature Range                                      | -40 to +85°C                                                                                                                                                                                                                       |                                      |      |      |      |      |                            |      |      |      |  |
| Rated Voltage Range                                    | 6.3 to 100V <sub>dc</sub>                                                                                                                                                                                                          |                                      |      |      |      |      |                            |      |      |      |  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                                          |                                      |      |      |      |      |                            |      |      |      |  |
| Leakage Current                                        | I=0.06CV or 10μA, whichever is greater. (at 20°C after 2 minutes)<br>I=0.03CV or 3μA, whichever is greater. (at 20°C after 5 minutes)<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) |                                      |      |      |      |      |                            |      |      |      |  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                   | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V                        | 63V  | 80V  | 100V |  |
|                                                        | tanδ (Max.)                                                                                                                                                                                                                        | 0.24                                 | 0.24 | 0.20 | 0.20 | 0.16 | 0.14                       | 0.12 | 0.12 | 0.10 |  |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                                                  |                                      |      |      |      |      |                            |      |      |      |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                   | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V                        | 63V  | 80V  | 100V |  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                                                                  | 4                                    | 3    | 2    | 2    | 2    | 2                          | 2    | 2    | 2    |  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                                                                                                  | 10                                   | 8    | 6    | 4    | 3    | 3                          | 3    | 3    | 3    |  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 85°C, however the polarization shall be reversed every 250 hours.                   |                                      |      |      |      |      |                            |      |      |      |  |
|                                                        | Rated voltage                                                                                                                                                                                                                      | 6.3 to 16V <sub>dc</sub>             |      |      |      |      | 25 to 100V <sub>dc</sub>   |      |      |      |  |
|                                                        | Capacitance change                                                                                                                                                                                                                 | ≤±25% of the initial value           |      |      |      |      | ≤±20% of the initial value |      |      |      |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                                        | ≤150% of the initial specified value |      |      |      |      |                            |      |      |      |  |
|                                                        | Leakage current                                                                                                                                                                                                                    | ≤The initial specified value         |      |      |      |      |                            |      |      |      |  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied.                                                                      |                                      |      |      |      |      |                            |      |      |      |  |
|                                                        | Rated voltage                                                                                                                                                                                                                      | 6.3 to 16V <sub>dc</sub>             |      |      |      |      | 25 to 100V <sub>dc</sub>   |      |      |      |  |
|                                                        | Capacitance change                                                                                                                                                                                                                 | ≤±25% of the initial value           |      |      |      |      | ≤±20% of the initial value |      |      |      |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                                        | ≤150% of the initial specified value |      |      |      |      |                            |      |      |      |  |
|                                                        | Leakage current                                                                                                                                                                                                                    | ≤The initial specified value         |      |      |      |      |                            |      |      |      |  |

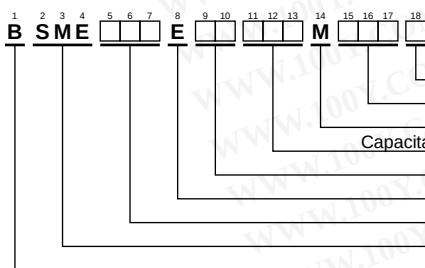
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     |
| L'  | L+1.5max.  |     |     |     |      |     |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Bi-polarized, 85°C

## SME-BP Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|------------------------------------------------------|--------------------|----------|----------|--------------------|------|------------------------------------------------------|--------------------|
| 6.3      | 33       | 5×11               | 0.24 | 64                                                   | BSME6R3E□□330ME11D | 35       | 220      | 12.5×20            | 0.16 | 410                                                  | BSME350E□□221MK20S |
|          | 47       | 5×11               | 0.24 | 76                                                   | BSME6R3E□□470ME11D |          | 330      | 12.5×20            | 0.16 | 505                                                  | BSME350E□□331MK20S |
|          | 100      | 6.3×11             | 0.24 | 125                                                  | BSME6R3E□□101MF11D |          | 470      | 12.5×25            | 0.16 | 655                                                  | BSME350E□□471MK25S |
|          | 220      | 8×11.5             | 0.24 | 215                                                  | BSME6R3E□□221MHB5D |          | 1,000    | 16×31.5            | 0.16 | 1,140                                                | BSME350E□□102MLN3S |
|          | 330      | 8×11.5             | 0.24 | 265                                                  | BSME6R3E□□331MHB5D |          | 0.47     | 5×11               | 0.14 | 11                                                   | BSME500E□□47ME11D  |
|          | 470      | 10×12.5            | 0.24 | 370                                                  | BSME6R3E□□471MJC5S | 50       | 1.0      | 5×11               | 0.14 | 17                                                   | BSME500E□□1R0ME11D |
|          | 1,000    | 10×20              | 0.24 | 650                                                  | BSME6R3E□□102MJ20S |          | 2.2      | 5×11               | 0.14 | 25                                                   | BSME500E□□2R2ME11D |
|          | 2,200    | 12.5×25            | 0.26 | 1,160                                                | BSME6R3E□□222MK25S |          | 3.3      | 5×11               | 0.14 | 27                                                   | BSME500E□□3R3ME11D |
|          | 3,300    | 16×25              | 0.28 | 1,570                                                | BSME6R3E□□332ML25S |          | 4.7      | 5×11               | 0.14 | 34                                                   | BSME500E□□4R7ME11D |
|          | 4,700    | 16×31.5            | 0.30 | 2,020                                                | BSME6R3E□□472MLN3S |          | 10       | 6.3×11             | 0.14 | 52                                                   | BSME500E□□100MF11D |
| 10       | 6,800    | 18×35.5            | 0.34 | 2,600                                                | BSME6R3E□□682MMP1S |          | 22       | 8×11.5             | 0.14 | 89                                                   | BSME500E□□220MHB5D |
|          | 22       | 5×11               | 0.24 | 57                                                   | BSME100E□□220ME11D |          | 33       | 8×11.5             | 0.14 | 105                                                  | BSME500E□□330MHB5D |
|          | 33       | 5×11               | 0.24 | 64                                                   | BSME100E□□330ME11D |          | 47       | 10×12.5            | 0.14 | 150                                                  | BSME500E□□470MJC5S |
|          | 47       | 5×11               | 0.24 | 76                                                   | BSME100E□□470ME11D |          | 100      | 10×20              | 0.14 | 265                                                  | BSME500E□□101MJ20S |
|          | 100      | 6.3×11             | 0.24 | 125                                                  | BSME100E□□101MF11D |          | 220      | 12.5×25            | 0.14 | 480                                                  | BSME500E□□221MK25S |
|          | 220      | 8×11.5             | 0.24 | 215                                                  | BSME100E□□221MHB5D |          | 330      | 16×25              | 0.14 | 650                                                  | BSME500E□□331ML25S |
|          | 330      | 10×16              | 0.24 | 345                                                  | BSME100E□□331MJ16S |          | 470      | 16×31.5            | 0.14 | 835                                                  | BSME500E□□471MLN3S |
|          | 470      | 10×16              | 0.24 | 410                                                  | BSME100E□□471MJ16S | 63       | 3.3      | 5×11               | 0.12 | 28                                                   | BSME630E□□3R3ME11D |
|          | 1,000    | 12.5×20            | 0.24 | 720                                                  | BSME100E□□102MK20S |          | 4.7      | 6.3×11             | 0.12 | 34                                                   | BSME630E□□4R7MF11D |
|          | 2,200    | 16×25              | 0.26 | 1,280                                                | BSME100E□□222ML25S |          | 10       | 6.3×11             | 0.12 | 57                                                   | BSME630E□□100MF11D |
| 16       | 3,300    | 16×31.5            | 0.28 | 1,690                                                | BSME100E□□332MLN3S |          | 22       | 8×11.5             | 0.12 | 95                                                   | BSME630E□□220MHB5D |
|          | 4,700    | 18×35.5            | 0.30 | 2,160                                                | BSME100E□□472MMP1S |          | 33       | 10×12.5            | 0.12 | 135                                                  | BSME630E□□330MJC5S |
|          | 10       | 5×11               | 0.20 | 42                                                   | BSME160E□□100ME11D |          | 47       | 10×16              | 0.12 | 180                                                  | BSME630E□□470MJ16S |
|          | 22       | 5×11               | 0.20 | 57                                                   | BSME160E□□220ME11D |          | 100      | 12.5×20            | 0.12 | 320                                                  | BSME630E□□101MK20S |
|          | 33       | 5×11               | 0.20 | 70                                                   | BSME160E□□330ME11D |          | 220      | 16×25              | 0.12 | 575                                                  | BSME630E□□221ML25S |
|          | 47       | 6.3×11             | 0.20 | 95                                                   | BSME160E□□470MF11D |          | 330      | 16×31.5            | 0.12 | 655                                                  | BSME630E□□331MLN3S |
|          | 100      | 8×11.5             | 0.20 | 160                                                  | BSME160E□□101MHB5D |          | 470      | 18×35.5            | 0.12 | 965                                                  | BSME630E□□471MMP1S |
|          | 220      | 10×12.5            | 0.20 | 275                                                  | BSME160E□□221MJC5S | 80       | 2.2      | 5×11               | 0.12 | 29                                                   | BSME800E□□2R2ME11D |
|          | 330      | 10×16              | 0.20 | 375                                                  | BSME160E□□331MJ16S |          | 3.3      | 6.3×11             | 0.12 | 39                                                   | BSME800E□□3R3MF11D |
|          | 470      | 10×20              | 0.20 | 485                                                  | BSME160E□□471MJ20S |          | 4.7      | 6.3×11             | 0.12 | 47                                                   | BSME800E□□4R7MF11D |
| 25       | 1,000    | 12.5×25            | 0.20 | 855                                                  | BSME160E□□102MK25S |          | 10       | 8×11.5             | 0.12 | 65                                                   | BSME800E□□100MHB5D |
|          | 2,200    | 16×31.5            | 0.22 | 1,510                                                | BSME160E□□222MLN3S |          | 22       | 10×16              | 0.12 | 125                                                  | BSME800E□□220MJ16S |
|          | 3,300    | 18×35.5            | 0.24 | 1,980                                                | BSME160E□□332MMP1S |          | 33       | 10×16              | 0.12 | 150                                                  | BSME800E□□330MJ16S |
|          | 10       | 5×11               | 0.20 | 42                                                   | BSME250E□□100ME11D |          | 47       | 10×20              | 0.12 | 195                                                  | BSME800E□□470MJ20S |
|          | 22       | 6.3×11             | 0.20 | 65                                                   | BSME250E□□220MF11D |          | 100      | 12.5×25            | 0.12 | 350                                                  | BSME800E□□101MK25S |
|          | 33       | 6.3×11             | 0.20 | 80                                                   | BSME250E□□330MF11D |          | 220      | 16×31.5            | 0.12 | 615                                                  | BSME800E□□221MLN3S |
|          | 47       | 6.3×11             | 0.20 | 95                                                   | BSME250E□□470MF11D |          | 330      | 18×35.5            | 0.12 | 755                                                  | BSME800E□□331MMP1S |
|          | 100      | 8×11.5             | 0.20 | 160                                                  | BSME250E□□101MHB5D | 100      | 0.47     | 5×11               | 0.10 | 14                                                   | BSME101E□□4R7ME11D |
|          | 220      | 10×16              | 0.20 | 305                                                  | BSME250E□□221MJ16S |          | 1.0      | 5×11               | 0.10 | 21                                                   | BSME101E□□1R0ME11D |
|          | 330      | 12.5×20            | 0.20 | 450                                                  | BSME250E□□331MK20S |          | 2.2      | 6.3×11             | 0.10 | 34                                                   | BSME101E□□2R2MF11D |
| 35       | 470      | 12.5×20            | 0.20 | 540                                                  | BSME250E□□471MK20S |          | 3.3      | 6.3×11             | 0.10 | 39                                                   | BSME101E□□3R3MF11D |
|          | 1,000    | 16×25              | 0.20 | 950                                                  | BSME250E□□102ML25S |          | 4.7      | 6.3×11             | 0.10 | 47                                                   | BSME101E□□4R7MF11D |
|          | 2,200    | 18×35.5            | 0.22 | 1,620                                                | BSME250E□□222MMP1S |          | 10       | 8×11.5             | 0.10 | 71                                                   | BSME101E□□100MHB5D |
|          | 4.7      | 5×11               | 0.16 | 34                                                   | BSME350E□□4R7ME11D |          | 22       | 10×16              | 0.10 | 135                                                  | BSME101E□□220MJ16S |
|          | 10       | 5×11               | 0.16 | 43                                                   | BSME350E□□100ME11D |          | 33       | 12.5×20            | 0.10 | 220                                                  | BSME101E□□330MK20S |
|          | 22       | 6.3×11             | 0.16 | 73                                                   | BSME350E□□220MF11D |          | 47       | 12.5×20            | 0.10 | 240                                                  | BSME101E□□470MK20S |
|          | 33       | 8×11.5             | 0.16 | 100                                                  | BSME350E□□330MHB5D |          | 100      | 16×25              | 0.10 | 425                                                  | BSME101E□□101ML25S |
|          | 47       | 8×11.5             | 0.16 | 120                                                  | BSME350E□□470MHB5D |          | 220      | 18×35.5            | 0.10 | 720                                                  | BSME101E□□221MMP1S |
|          | 100      | 10×16              | 0.16 | 230                                                  | BSME350E□□101MJ16S |          |          |                    |      |                                                      |                    |

□□ : Lead forming / Taping code

勝特力材料 886-3-5753170  
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 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Bi-polarized, 105°C

## KME-BP Series

- Standard Bi-polarized type
- Endurance : 1,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

KME-BP

Bi-polarized

KME

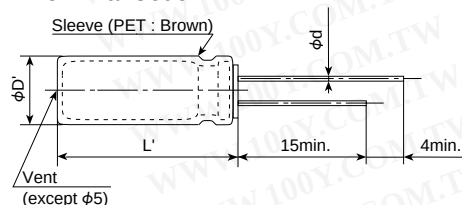
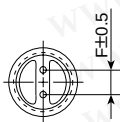


## ◆ SPECIFICATIONS

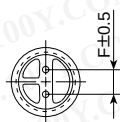
| Items                                                  | Characteristics                                                                                                                                                                                                                    |                                      |      |      |      |      |                            |      |      |      |  |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|----------------------------|------|------|------|--|
| Category                                               | Temperature Range                                                                                                                                                                                                                  |                                      |      |      |      |      |                            |      |      |      |  |
| Rated Voltage Range                                    | -55 to +105°C                                                                                                                                                                                                                      |                                      |      |      |      |      |                            |      |      |      |  |
| Capacitance Tolerance                                  | 6.3 to 100V <sub>dc</sub>                                                                                                                                                                                                          |                                      |      |      |      |      |                            |      |      |      |  |
| Leakage Current                                        | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                                          |                                      |      |      |      |      |                            |      |      |      |  |
| Dissipation Factor (tanδ)                              | I=0.06CV or 10μA, whichever is greater. (at 20°C after 2 minutes)<br>I=0.03CV or 3μA, whichever is greater. (at 20°C after 5 minutes)<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) |                                      |      |      |      |      |                            |      |      |      |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                   | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V                        | 63V  | 80V  | 100V |  |
|                                                        | tanδ (Max.)                                                                                                                                                                                                                        | 0.24                                 | 0.24 | 0.20 | 0.20 | 0.16 | 0.14                       | 0.12 | 0.12 | 0.10 |  |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                                                  |                                      |      |      |      |      |                            |      |      |      |  |
| Endurance                                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                   | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V                        | 63V  | 80V  | 100V |  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                                                                  | 4                                    | 3    | 2    | 2    | 2    | 2                          | 2    | 2    | 2    |  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                                                                                                  | 10                                   | 8    | 6    | 4    | 3    | 3                          | 3    | 3    | 3    |  |
| Shelf Life                                             | (at 120Hz)                                                                                                                                                                                                                         |                                      |      |      |      |      |                            |      |      |      |  |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 105°C, however the polarization shall be reversed every 250 hours.                  |                                      |      |      |      |      |                            |      |      |      |  |
|                                                        | Rated voltage                                                                                                                                                                                                                      | 6.3 to 16V <sub>dc</sub>             |      |      |      |      | 25 to 100V <sub>dc</sub>   |      |      |      |  |
|                                                        | Capacitance change                                                                                                                                                                                                                 | ≤±25% of the initial value           |      |      |      |      | ≤±20% of the initial value |      |      |      |  |
| Shelf Life                                             | D.F. (tanδ)                                                                                                                                                                                                                        | ≤150% of the initial specified value |      |      |      |      |                            |      |      |      |  |
|                                                        | Leakage current                                                                                                                                                                                                                    | ≤The initial specified value         |      |      |      |      |                            |      |      |      |  |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.                                                                       |                                      |      |      |      |      |                            |      |      |      |  |
|                                                        | Rated voltage                                                                                                                                                                                                                      | 6.3 to 16V <sub>dc</sub>             |      |      |      |      | 25 to 100V <sub>dc</sub>   |      |      |      |  |
| Shelf Life                                             | Capacitance change                                                                                                                                                                                                                 | ≤±25% of the initial value           |      |      |      |      | ≤±20% of the initial value |      |      |      |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                                        | ≤150% of the initial specified value |      |      |      |      |                            |      |      |      |  |
|                                                        | Leakage current                                                                                                                                                                                                                    | ≤The initial specified value         |      |      |      |      |                            |      |      |      |  |

## ◆ DIMENSIONS [mm]

## ● Terminal Code : E



(φ5 to φ10)

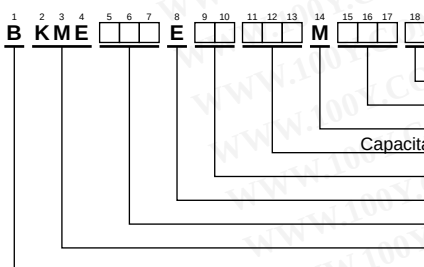


(φ12.5 to φ18)

Gas escape end seal

| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     |
| L'  | L+1.5max.  |     |     |     |      |     |     |

## ◆ PART NUMBERING SYSTEM



Supplement code

Size code

Capacitance tolerance code

Capacitance code (ex. 0.1μF:R10, 10μF:100, 100μF:101)

Lead forming-taping code

Terminal code

Voltage code (ex. 6.3V:6R3, 35V:350, 50V:500)

Series code

Category

Please refer to "A guide to global code (radial lead type)"

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 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Bi-polarized, 105°C

KME-BP Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|--------------------------------------------------------|--------------------|----------|----------|--------------------|------|--------------------------------------------------------|--------------------|
| 6.3      | 33       | 5×11               | 0.24 | 45                                                     | BKME6R3E□□330ME11D | 35       | 220      | 12.5×20            | 0.16 | 290                                                    | BKME350E□□221MK20S |
|          | 47       | 5×11               | 0.24 | 54                                                     | BKME6R3E□□470ME11D |          | 330      | 12.5×20            | 0.16 | 350                                                    | BKME350E□□331MK20S |
|          | 100      | 6.3×11             | 0.24 | 90                                                     | BKME6R3E□□101MF11D |          | 470      | 12.5×25            | 0.16 | 465                                                    | BKME350E□□471MK25S |
|          | 220      | 8×11.5             | 0.24 | 150                                                    | BKME6R3E□□221MHB5D |          | 1,000    | 16×31.5            | 0.16 | 805                                                    | BKME350E□□102MLN3S |
|          | 330      | 8×11.5             | 0.24 | 185                                                    | BKME6R3E□□331MHB5D |          | 0.47     | 5×11               | 0.14 | 7.0                                                    | BKME500E□□471MLN1D |
|          | 470      | 10×12.5            | 0.24 | 260                                                    | BKME6R3E□□471MJC5S | 50       | 1.0      | 5×11               | 0.14 | 10                                                     | BKME500E□□1R0ME11D |
|          | 1,000    | 10×20              | 0.24 | 460                                                    | BKME6R3E□□102MJ20S |          | 2.2      | 5×11               | 0.14 | 15                                                     | BKME500E□□2R2ME11D |
|          | 2,200    | 12.5×25            | 0.26 | 820                                                    | BKME6R3E□□222MK25S |          | 3.3      | 5×11               | 0.14 | 18                                                     | BKME500E□□3R3ME11D |
|          | 3,300    | 16×25              | 0.28 | 1,110                                                  | BKME6R3E□□332ML25S |          | 4.7      | 5×11               | 0.14 | 22                                                     | BKME500E□□4R7ME11D |
|          | 4,700    | 16×31.5            | 0.30 | 1,430                                                  | BKME6R3E□□472MLN3S |          | 10       | 6.3×11             | 0.14 | 37                                                     | BKME500E□□100MF11D |
|          | 6,800    | 18×35.5            | 0.34 | 1,830                                                  | BKME6R3E□□682MMP1S |          | 22       | 8×11.5             | 0.14 | 63                                                     | BKME500E□□220MHB5D |
| 10       | 22       | 5×11               | 0.24 | 37                                                     | BKME100E□□220ME11D |          | 33       | 8×11.5             | 0.14 | 77                                                     | BKME500E□□330MHB5D |
|          | 33       | 5×11               | 0.24 | 45                                                     | BKME100E□□330ME11D |          | 47       | 10×12.5            | 0.14 | 105                                                    | BKME500E□□470MJC5S |
|          | 47       | 5×11               | 0.24 | 54                                                     | BKME100E□□470ME11D |          | 100      | 10×20              | 0.14 | 190                                                    | BKME500E□□101MJ20S |
|          | 100      | 6.3×11             | 0.24 | 90                                                     | BKME100E□□101MF11D |          | 220      | 12.5×25            | 0.14 | 340                                                    | BKME500E□□221MK25S |
|          | 220      | 8×11.5             | 0.24 | 150                                                    | BKME100E□□221MHB5D |          | 330      | 16×25              | 0.14 | 460                                                    | BKME500E□□331ML25S |
|          | 330      | 10×16              | 0.24 | 240                                                    | BKME100E□□331MJ16S |          | 470      | 16×31.5            | 0.14 | 590                                                    | BKME500E□□471MLN3S |
|          | 470      | 10×16              | 0.24 | 290                                                    | BKME100E□□471MJ16S | 63       | 3.3      | 5×11               | 0.12 | 20                                                     | BKME630E□□3R3ME11D |
|          | 1,000    | 12.5×20            | 0.24 | 510                                                    | BKME100E□□102MK20S |          | 4.7      | 6.3×11             | 0.12 | 24                                                     | BKME630E□□4R7MF11D |
|          | 2,200    | 16×25              | 0.26 | 910                                                    | BKME100E□□222ML25S |          | 10       | 6.3×11             | 0.12 | 40                                                     | BKME630E□□100MF11D |
|          | 3,300    | 16×31.5            | 0.28 | 1,200                                                  | BKME100E□□332MLN3S |          | 22       | 8×11.5             | 0.12 | 68                                                     | BKME630E□□220MHB5D |
|          | 4,700    | 18×35.5            | 0.30 | 1,520                                                  | BKME100E□□472MMP1S |          | 33       | 10×12.5            | 0.12 | 98                                                     | BKME630E□□330MJC5S |
| 16       | 10       | 5×11               | 0.20 | 27                                                     | BKME160E□□100ME11D |          | 47       | 10×16              | 0.12 | 130                                                    | BKME630E□□470MJ16S |
|          | 22       | 5×11               | 0.20 | 40                                                     | BKME160E□□220ME11D |          | 100      | 12.5×20            | 0.12 | 225                                                    | BKME630E□□101MK20S |
|          | 33       | 5×11               | 0.20 | 49                                                     | BKME160E□□330ME11D |          | 220      | 16×25              | 0.12 | 405                                                    | BKME630E□□221ML25S |
|          | 47       | 6.3×11             | 0.20 | 67                                                     | BKME160E□□470MF11D |          | 330      | 16×31.5            | 0.12 | 535                                                    | BKME630E□□331MLN3S |
|          | 100      | 8×11.5             | 0.20 | 110                                                    | BKME160E□□101MHB5D |          | 470      | 18×35.5            | 0.12 | 680                                                    | BKME630E□□471MMP1S |
|          | 220      | 10×12.5            | 0.20 | 195                                                    | BKME160E□□221MJC5S | 80       | 2.2      | 5×11               | 0.12 | 16                                                     | BKME800E□□2R2ME11D |
|          | 330      | 10×16              | 0.20 | 265                                                    | BKME160E□□331MJ16S |          | 3.3      | 6.3×11             | 0.12 | 23                                                     | BKME800E□□3R3MF11D |
|          | 470      | 10×20              | 0.20 | 345                                                    | BKME160E□□471MJ20S |          | 4.7      | 6.3×11             | 0.12 | 27                                                     | BKME800E□□4R7MF11D |
|          | 1,000    | 12.5×25            | 0.20 | 605                                                    | BKME160E□□102MK25S |          | 10       | 8×11.5             | 0.12 | 46                                                     | BKME800E□□100MHB5D |
|          | 2,200    | 16×31.5            | 0.22 | 1,070                                                  | BKME160E□□222MLN3S |          | 22       | 10×16              | 0.12 | 89                                                     | BKME800E□□220MJ16S |
|          | 3,300    | 18×35.5            | 0.24 | 1,400                                                  | BKME160E□□332MMP1S |          | 33       | 10×16              | 0.12 | 105                                                    | BKME800E□□330MJ16S |
| 25       | 10       | 5×11               | 0.20 | 27                                                     | BKME250E□□100ME11D |          | 47       | 10×20              | 0.12 | 140                                                    | BKME800E□□470MJ20S |
|          | 22       | 6.3×11             | 0.20 | 46                                                     | BKME250E□□220MF11D |          | 100      | 12.5×25            | 0.12 | 245                                                    | BKME800E□□101MK25S |
|          | 33       | 6.3×11             | 0.20 | 56                                                     | BKME250E□□330MF11D |          | 220      | 16×31.5            | 0.12 | 435                                                    | BKME800E□□221MLN3S |
|          | 47       | 6.3×11             | 0.20 | 67                                                     | BKME250E□□470MF11D |          | 330      | 18×35.5            | 0.12 | 570                                                    | BKME800E□□331MMP1S |
|          | 100      | 8×11.5             | 0.20 | 110                                                    | BKME250E□□101MHB5D | 100      | 0.47     | 5×11               | 0.10 | 8.0                                                    | BKME101E□□471MLN1D |
|          | 220      | 10×16              | 0.20 | 215                                                    | BKME250E□□221MJ16S |          | 1.0      | 5×11               | 0.10 | 12                                                     | BKME101E□□1R0ME11D |
|          | 330      | 12.5×20            | 0.20 | 320                                                    | BKME250E□□331MK20S |          | 2.2      | 6.3×11             | 0.10 | 20                                                     | BKME101E□□2R2MF11D |
|          | 470      | 12.5×20            | 0.20 | 380                                                    | BKME250E□□471MK20S |          | 3.3      | 6.3×11             | 0.10 | 25                                                     | BKME101E□□3R3MF11D |
|          | 1,000    | 16×25              | 0.20 | 670                                                    | BKME250E□□102ML25S |          | 4.7      | 6.3×11             | 0.10 | 30                                                     | BKME101E□□4R7MF11D |
|          | 2,200    | 18×35.5            | 0.22 | 1,140                                                  | BKME250E□□222MMP1S |          | 10       | 8×11.5             | 0.10 | 50                                                     | BKME101E□□100MHB5D |
| 35       | 4.7      | 5×11               | 0.16 | 21                                                     | BKME350E□□4R7ME11D |          | 22       | 10×16              | 0.10 | 97                                                     | BKME101E□□220MJ16S |
|          | 10       | 5×11               | 0.16 | 30                                                     | BKME350E□□100ME11D |          | 33       | 12.5×20            | 0.10 | 140                                                    | BKME101E□□330MK20S |
|          | 22       | 6.3×11             | 0.16 | 51                                                     | BKME350E□□220MF11D |          | 47       | 12.5×20            | 0.10 | 170                                                    | BKME101E□□470MK20S |
|          | 33       | 8×11.5             | 0.16 | 72                                                     | BKME350E□□330MHB5D |          | 100      | 16×25              | 0.10 | 300                                                    | BKME101E□□101ML25S |
|          | 47       | 8×11.5             | 0.16 | 86                                                     | BKME350E□□470MHB5D |          | 220      | 18×35.5            | 0.10 | 510                                                    | BKME101E□□221MMP1S |
|          | 100      | 10×16              | 0.16 | 160                                                    | BKME350E□□101MJ16S |          |          |                    |      |                                                        |                    |

□□ : Lead forming / Taping code

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

New!

## KZM Series

- Long-Life version of KZH series
- Endurance with ripple current : 6,000 to 10,000 hours at 105°C
- Newly innovative electrolyte is employed to minimize ESR
- Rated voltage range : 6.3 to 50V, Nominal capacitance range : 27 to 10,000μF
- Non solvent-proof
- RoHS Compliant

KZM

Longer life  
KZH  
Lower Z  
KZE

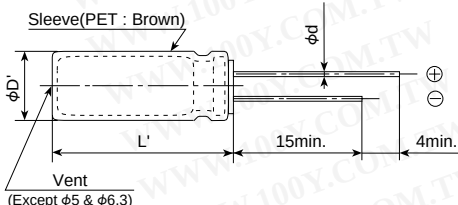
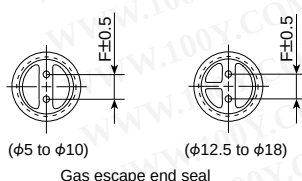


## ◆SPECIFICATIONS

| Items                           | Characteristics                                                                                                                                                                                            |                                                                                   |      |      |      |      |      |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|------|------|------|
| Category                        | -40 to +105°C                                                                                                                                                                                              |                                                                                   |      |      |      |      |      |
| Temperature Range               |                                                                                                                                                                                                            |                                                                                   |      |      |      |      |      |
| Rated Voltage Range             | 6.3 to 50V <sub>dc</sub>                                                                                                                                                                                   |                                                                                   |      |      |      |      |      |
| Capacitance Tolerance           | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                  |                                                                                   |      |      |      |      |      |
| Leakage Current                 | I=0.01CV<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                                                            |                                                                                   |      |      |      |      |      |
| Dissipation Factor (tanδ)       | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 6.3V                                                                              | 10V  | 16V  | 25V  | 35V  | 50V  |
|                                 | tanδ (Max.)                                                                                                                                                                                                | 0.22                                                                              | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 |
|                                 | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                          |                                                                                   |      |      |      |      |      |
| Low Temperature Characteristics | Z(-25°C)/Z(+20°C)                                                                                                                                                                                          | 2 max.                                                                            |      |      |      |      |      |
|                                 | Z(-40°C)/Z(+20°C)                                                                                                                                                                                          | 3 max. (at 120Hz)                                                                 |      |      |      |      |      |
| Endurance                       | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |                                                                                   |      |      |      |      |      |
|                                 | Time                                                                                                                                                                                                       | φ5 & φ6.3 : 6,000hours   φ8 & φ10×12.5 : 8,000hours   φ10×16 to φ18 : 10,000hours |      |      |      |      |      |
|                                 | Capacitance change                                                                                                                                                                                         | ≤±25% of the initial value (6.3, 10V : ≤±30%)                                     |      |      |      |      |      |
|                                 | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                              |      |      |      |      |      |
|                                 | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                                      |      |      |      |      |      |
| Shelf Life                      | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.                                               |                                                                                   |      |      |      |      |      |
|                                 | Capacitance change                                                                                                                                                                                         | ≤±25% of the initial value (6.3, 10V : ≤±30%)                                     |      |      |      |      |      |
|                                 | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                              |      |      |      |      |      |
|                                 | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                                      |      |      |      |      |      |

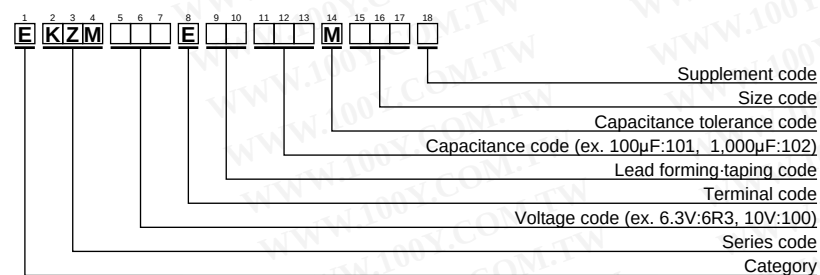
## ◆DIMENSIONS [mm]

- Terminal Code : E



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     |
| L'  | L+1.5max.  |     |     |     |      |     |     |

## ◆PART NUMBERING SYSTEM



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## ◆RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|
| 27 to 180        |                | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 560       |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800     |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900   |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to 10,000  |                | 0.85 | 0.95 | 0.98 | 1.00 |

Note : The endurance of capacitors is shortened with internal heating produced by ripple currents at the rate of halving the lifetime with every 5°C rise.  
 When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

New!

KZM Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | tanδ | Impedance<br>(Ωmax/100kHz) |       | Rated ripple current<br>(mA rms/105°C, 100kHz) | Part No.           |
|-------------|-------------|-----------------------|------|----------------------------|-------|------------------------------------------------|--------------------|
|             |             |                       |      | 20°C                       | -10°C |                                                |                    |
| 6.3         | 220         | 5 × 11                | 0.22 | 0.22                       | 0.80  | 345                                            | EKZM6R3E□□221ME11D |
|             | 470         | 6.3 × 11              | 0.22 | 0.094                      | 0.35  | 540                                            | EKZM6R3E□□471MF11D |
|             | 820         | 8 × 11.5              | 0.22 | 0.056                      | 0.19  | 945                                            | EKZM6R3E□□821MHB5D |
|             | 1,200       | 8 × 15                | 0.22 | 0.045                      | 0.15  | 1,250                                          | EKZM6R3E□□122MH15D |
|             | 1,200       | 10 × 12.5             | 0.22 | 0.039                      | 0.14  | 1,330                                          | EKZM6R3E□□122MJC5S |
|             | 1,500       | 8 × 20                | 0.22 | 0.029                      | 0.11  | 1,500                                          | EKZM6R3E□□152MH20D |
|             | 1,800       | 10 × 16               | 0.22 | 0.028                      | 0.10  | 1,760                                          | EKZM6R3E□□182MJ16S |
|             | 2,200       | 10 × 20               | 0.24 | 0.020                      | 0.060 | 1,960                                          | EKZM6R3E□□222MJ20S |
|             | 2,700       | 10 × 25               | 0.24 | 0.018                      | 0.054 | 2,250                                          | EKZM6R3E□□272MJ25S |
|             | 3,900       | 12.5 × 20             | 0.26 | 0.017                      | 0.043 | 2,480                                          | EKZM6R3E□□392MK20S |
|             | 4,700       | 12.5 × 25             | 0.28 | 0.015                      | 0.038 | 2,900                                          | EKZM6R3E□□472MK25S |
|             | 5,600       | 12.5 × 30             | 0.30 | 0.013                      | 0.033 | 3,450                                          | EKZM6R3E□□562MK30S |
|             | 6,800       | 12.5 × 35             | 0.32 | 0.012                      | 0.031 | 3,570                                          | EKZM6R3E□□682MK35S |
|             | 6,800       | 16 × 20               | 0.32 | 0.015                      | 0.038 | 3,250                                          | EKZM6R3E□□682ML20S |
| 10          | 8,200       | 16 × 25               | 0.36 | 0.013                      | 0.035 | 3,630                                          | EKZM6R3E□□822ML25S |
|             | 10,000      | 18 × 25               | 0.40 | 0.012                      | 0.031 | 3,650                                          | EKZM6R3E□□103MM25S |
|             | 150         | 5 × 11                | 0.19 | 0.22                       | 0.80  | 345                                            | EKZM100E□□151ME11D |
|             | 330         | 6.3 × 11              | 0.19 | 0.094                      | 0.35  | 540                                            | EKZM100E□□331MF11D |
|             | 680         | 8 × 11.5              | 0.19 | 0.056                      | 0.19  | 945                                            | EKZM100E□□681MHB5D |
|             | 1,000       | 8 × 15                | 0.19 | 0.045                      | 0.15  | 1,250                                          | EKZM100E□□102MH15D |
|             | 1,000       | 10 × 12.5             | 0.19 | 0.039                      | 0.14  | 1,330                                          | EKZM100E□□102MJC5S |
|             | 1,500       | 8 × 20                | 0.19 | 0.029                      | 0.11  | 1,500                                          | EKZM100E□□152MH20D |
|             | 1,500       | 10 × 16               | 0.19 | 0.028                      | 0.10  | 1,760                                          | EKZM100E□□152MJ16S |
|             | 1,800       | 10 × 20               | 0.19 | 0.020                      | 0.060 | 1,960                                          | EKZM100E□□182MJ20S |
|             | 2,200       | 10 × 25               | 0.19 | 0.018                      | 0.054 | 2,250                                          | EKZM100E□□222MJ25S |
|             | 2,700       | 12.5 × 20             | 0.21 | 0.017                      | 0.043 | 2,480                                          | EKZM100E□□272MK20S |
|             | 3,900       | 12.5 × 25             | 0.21 | 0.015                      | 0.038 | 2,900                                          | EKZM100E□□392MK25S |
|             | 4,700       | 12.5 × 30             | 0.23 | 0.013                      | 0.033 | 3,450                                          | EKZM100E□□472MK30S |
| 16          | 4,700       | 12.5 × 35             | 0.23 | 0.012                      | 0.031 | 3,570                                          | EKZM100E□□472MK35S |
|             | 5,600       | 16 × 20               | 0.23 | 0.015                      | 0.038 | 3,250                                          | EKZM100E□□562ML20S |
|             | 6,800       | 16 × 25               | 0.25 | 0.013                      | 0.035 | 3,630                                          | EKZM100E□□682ML25S |
|             | 8,200       | 18 × 25               | 0.29 | 0.012                      | 0.031 | 3,650                                          | EKZM100E□□822MM25S |
|             | 100         | 5 × 11                | 0.16 | 0.22                       | 0.80  | 345                                            | EKZM160E□□101ME11D |
|             | 220         | 6.3 × 11              | 0.16 | 0.094                      | 0.35  | 540                                            | EKZM160E□□221MF11D |
|             | 470         | 8 × 11.5              | 0.16 | 0.056                      | 0.19  | 945                                            | EKZM160E□□471MHB5D |
|             | 680         | 8 × 15                | 0.16 | 0.045                      | 0.15  | 1,250                                          | EKZM160E□□681MH15D |
|             | 680         | 10 × 12.5             | 0.16 | 0.039                      | 0.14  | 1,330                                          | EKZM160E□□681MJC5S |
|             | 1,000       | 8 × 20                | 0.16 | 0.029                      | 0.11  | 1,500                                          | EKZM160E□□102MH20D |
|             | 1,000       | 10 × 16               | 0.16 | 0.028                      | 0.10  | 1,760                                          | EKZM160E□□102MJ16S |
|             | 1,500       | 10 × 20               | 0.16 | 0.020                      | 0.060 | 1,960                                          | EKZM160E□□152MJ20S |
|             | 1,800       | 10 × 25               | 0.16 | 0.018                      | 0.054 | 2,250                                          | EKZM160E□□182MJ25S |
|             | 2,200       | 12.5 × 20             | 0.18 | 0.017                      | 0.043 | 2,480                                          | EKZM160E□□222MK20S |
|             | 2,700       | 12.5 × 25             | 0.18 | 0.015                      | 0.038 | 2,900                                          | EKZM160E□□272MK25S |
| 16          | 3,300       | 12.5 × 30             | 0.20 | 0.013                      | 0.033 | 3,450                                          | EKZM160E□□332MK30S |
|             | 3,300       | 12.5 × 35             | 0.20 | 0.012                      | 0.031 | 3,570                                          | EKZM160E□□332MK35S |
|             | 3,900       | 16 × 20               | 0.20 | 0.015                      | 0.038 | 3,250                                          | EKZM160E□□392ML20S |
|             | 4,700       | 16 × 25               | 0.22 | 0.013                      | 0.035 | 3,630                                          | EKZM160E□□472ML25S |
|             | 5,600       | 18 × 25               | 0.24 | 0.012                      | 0.031 | 3,650                                          | EKZM160E□□562MM25S |

□□ : Lead forming / Taping code

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

New!

KZM Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | tanδ | Impedance<br>(Ωmax/100kHz) |       | Rated ripple current<br>(mArms/105°C, 100kHz) | Part No.           |
|-------------|-------------|-----------------------|------|----------------------------|-------|-----------------------------------------------|--------------------|
|             |             |                       |      | 20°C                       | -10°C |                                               |                    |
| 25          | 68          | 5 × 11                | 0.14 | 0.22                       | 0.80  | 345                                           | EKZM250E□□680ME11D |
|             | 150         | 6.3 × 11              | 0.14 | 0.094                      | 0.35  | 540                                           | EKZM250E□□151MF11D |
|             | 330         | 8 × 11.5              | 0.14 | 0.056                      | 0.19  | 945                                           | EKZM250E□□331MHB5D |
|             | 390         | 8 × 15                | 0.14 | 0.045                      | 0.15  | 1,250                                         | EKZM250E□□391MH15D |
|             | 470         | 10 × 12.5             | 0.14 | 0.039                      | 0.14  | 1,330                                         | EKZM250E□□471MJC5S |
|             | 560         | 8 × 20                | 0.14 | 0.029                      | 0.11  | 1,500                                         | EKZM250E□□561MH20D |
|             | 680         | 10 × 16               | 0.14 | 0.028                      | 0.10  | 1,760                                         | EKZM250E□□681MJ16S |
|             | 820         | 10 × 20               | 0.14 | 0.020                      | 0.060 | 1,960                                         | EKZM250E□□821MJ20S |
|             | 1,000       | 10 × 25               | 0.14 | 0.018                      | 0.054 | 2,250                                         | EKZM250E□□102MJ25S |
|             | 1,500       | 12.5 × 20             | 0.14 | 0.017                      | 0.043 | 2,480                                         | EKZM250E□□152MK20S |
|             | 1,800       | 12.5 × 25             | 0.14 | 0.015                      | 0.038 | 2,900                                         | EKZM250E□□182MK25S |
|             | 2,200       | 12.5 × 30             | 0.16 | 0.013                      | 0.033 | 3,450                                         | EKZM250E□□222MK30S |
|             | 2,200       | 12.5 × 35             | 0.16 | 0.012                      | 0.031 | 3,570                                         | EKZM250E□□222MK35S |
|             | 2,700       | 16 × 20               | 0.16 | 0.015                      | 0.038 | 3,250                                         | EKZM250E□□272ML20S |
| 35          | 3,300       | 16 × 25               | 0.18 | 0.013                      | 0.035 | 3,630                                         | EKZM250E□□332ML25S |
|             | 3,900       | 18 × 25               | 0.18 | 0.012                      | 0.031 | 3,650                                         | EKZM250E□□392MM25S |
|             | 47          | 5 × 11                | 0.12 | 0.22                       | 0.80  | 345                                           | EKZM350E□□470ME11D |
|             | 100         | 6.3 × 11              | 0.12 | 0.094                      | 0.35  | 540                                           | EKZM350E□□101MF11D |
|             | 220         | 8 × 11.5              | 0.12 | 0.056                      | 0.19  | 945                                           | EKZM350E□□221MHB5D |
|             | 270         | 8 × 15                | 0.12 | 0.045                      | 0.15  | 1,250                                         | EKZM350E□□271MH15D |
|             | 330         | 10 × 12.5             | 0.12 | 0.039                      | 0.14  | 1,330                                         | EKZM350E□□331MJC5S |
|             | 390         | 8 × 20                | 0.12 | 0.029                      | 0.11  | 1,500                                         | EKZM350E□□391MH20D |
|             | 470         | 10 × 16               | 0.12 | 0.028                      | 0.10  | 1,760                                         | EKZM350E□□471MJ16S |
|             | 560         | 10 × 20               | 0.12 | 0.020                      | 0.060 | 1,960                                         | EKZM350E□□561MJ20S |
|             | 680         | 10 × 25               | 0.12 | 0.018                      | 0.054 | 2,250                                         | EKZM350E□□681MJ25S |
|             | 1,000       | 12.5 × 20             | 0.12 | 0.017                      | 0.043 | 2,480                                         | EKZM350E□□102MK20S |
|             | 1,200       | 12.5 × 25             | 0.12 | 0.015                      | 0.038 | 2,900                                         | EKZM350E□□122MK25S |
|             | 1,500       | 12.5 × 30             | 0.12 | 0.013                      | 0.033 | 3,450                                         | EKZM350E□□152MK30S |
| 50          | 1,500       | 16 × 20               | 0.12 | 0.015                      | 0.038 | 3,250                                         | EKZM350E□□152ML20S |
|             | 1,800       | 12.5 × 35             | 0.12 | 0.012                      | 0.031 | 3,570                                         | EKZM350E□□182MK35S |
|             | 2,200       | 16 × 25               | 0.14 | 0.013                      | 0.035 | 3,630                                         | EKZM350E□□222ML25S |
|             | 2,700       | 18 × 25               | 0.14 | 0.012                      | 0.031 | 3,650                                         | EKZM350E□□272MM25S |
|             | 27          | 5 × 11                | 0.10 | 0.34                       | 1.18  | 238                                           | EKZM500E□□270ME11D |
|             | 56          | 6.3 × 11              | 0.10 | 0.14                       | 0.50  | 385                                           | EKZM500E□□560MF11D |
|             | 100         | 8 × 11.5              | 0.10 | 0.074                      | 0.22  | 724                                           | EKZM500E□□101MHB5D |
|             | 150         | 8 × 15                | 0.10 | 0.061                      | 0.18  | 950                                           | EKZM500E□□151MH15D |
|             | 150         | 10 × 12.5             | 0.10 | 0.061                      | 0.18  | 979                                           | EKZM500E□□151MJC5S |
|             | 180         | 8 × 20                | 0.10 | 0.046                      | 0.14  | 1,190                                         | EKZM500E□□181MH20D |
|             | 220         | 10 × 16               | 0.10 | 0.042                      | 0.12  | 1,370                                         | EKZM500E□□221MJ16S |
|             | 270         | 10 × 20               | 0.10 | 0.030                      | 0.090 | 1,580                                         | EKZM500E□□271MJ20S |
|             | 330         | 10 × 25               | 0.10 | 0.028                      | 0.085 | 1,870                                         | EKZM500E□□331MJ25S |
|             | 470         | 12.5 × 20             | 0.10 | 0.027                      | 0.068 | 2,050                                         | EKZM500E□□471MK20S |
|             | 680         | 12.5 × 25             | 0.10 | 0.023                      | 0.059 | 2,410                                         | EKZM500E□□681MK25S |
|             | 820         | 12.5 × 30             | 0.10 | 0.021                      | 0.052 | 2,860                                         | EKZM500E□□821MK30S |
|             | 820         | 12.5 × 35             | 0.10 | 0.019                      | 0.051 | 2,960                                         | EKZM500E□□821MK35S |
|             | 1,000       | 16 × 20               | 0.10 | 0.023                      | 0.059 | 2,730                                         | EKZM500E□□102ML20S |
|             | 1,200       | 16 × 25               | 0.10 | 0.021                      | 0.056 | 3,010                                         | EKZM500E□□122ML25S |
|             | 1,500       | 18 × 25               | 0.10 | 0.019                      | 0.051 | 3,290                                         | EKZM500E□□152MM25S |

□□ : Lead forming / Taping code

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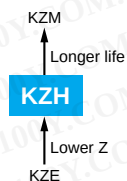


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

## KZH Series

- Ultra Low impedance for Personal Computer and Storage Equipment
- Endurance with ripple current: 5,000 to 6,000 hours at 105°C
- Non solvent-proof type
- RoHS Compliant

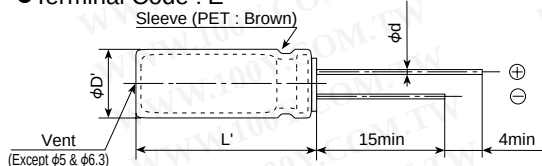
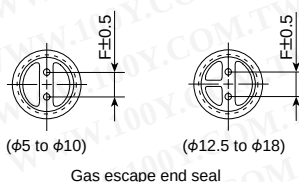


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                            |                                               |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Category                                               | -40 to +105°C                                                                                                                                                                                              |                                               |
| Temperature Range                                      |                                                                                                                                                                                                            |                                               |
| Rated Voltage Range                                    | 6.3 to 35V <sub>dc</sub>                                                                                                                                                                                   |                                               |
| Capacitance Tolerance                                  | ±20% (M)                                                                                                                                                                                                   |                                               |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                                        |                                               |
|                                                        | (at 20°C, 120Hz)                                                                                                                                                                                           |                                               |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 6.3V 10V 16V 25V 35V                          |
|                                                        | tanδ (Max.)                                                                                                                                                                                                | 0.22 0.19 0.16 0.14 0.12                      |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.                                                                                                           |                                               |
|                                                        | (at 20°C, 120Hz)                                                                                                                                                                                           |                                               |
| Low Temperature Characteristics (Max. Impedance Ratio) | Z (-25°C) / Z (+20°C)                                                                                                                                                                                      | 2max.                                         |
|                                                        | Z (-40°C) / Z (+20°C)                                                                                                                                                                                      | 3max.                                         |
|                                                        | (at 120Hz)                                                                                                                                                                                                 |                                               |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |                                               |
|                                                        | Time                                                                                                                                                                                                       | φ5 & φ6.3 : 5,000hours φ8 to φ16 : 6,000hours |
|                                                        | Capacitance change                                                                                                                                                                                         | ≤±25% of the initial value (6.3, 10V : ≤±30%) |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value          |
|                                                        | Leakage current                                                                                                                                                                                            | ≤The initial specified value                  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.                                               |                                               |
|                                                        | Capacitance change                                                                                                                                                                                         | ≤±25% of the initial value (6.3, 10V : ≤±30%) |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value          |
|                                                        | Leakage current                                                                                                                                                                                            | ≤The initial specified value                  |

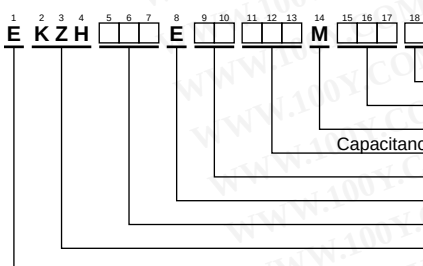
## ◆DIMENSIONS [mm]

## ●Terminal Code : E



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  |
|-----|------------|-----|-----|-----|------|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |
| L'  | L+1.5max.  |     |     |     |      |     |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

KZH Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated ripple current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|-------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                       |                    |
| 6.3         | 220         | 5×11                  | 0.24                       | 0.80  | 330                                                   | EKZH6R3E□□221ME11D |
|             | 470         | 6.3×11                | 0.11                       | 0.35  | 500                                                   | EKZH6R3E□□471MF11D |
|             | 820         | 8×11.5                | 0.062                      | 0.19  | 900                                                   | EKZH6R3E□□821MHB5D |
|             | 1,200       | 8×15                  | 0.048                      | 0.15  | 1,210                                                 | EKZH6R3E□□122MH15D |
|             | 1,200       | 10×12.5               | 0.045                      | 0.14  | 1,240                                                 | EKZH6R3E□□122MJC5S |
|             | 1,500       | 8×20                  | 0.033                      | 0.11  | 1,410                                                 | EKZH6R3E□□152MH20D |
|             | 1,800       | 10×16                 | 0.032                      | 0.10  | 1,650                                                 | EKZH6R3E□□182MJ16S |
|             | 2,200       | 10×20                 | 0.020                      | 0.060 | 1,960                                                 | EKZH6R3E□□222MJ20S |
|             | 2,700       | 10×25                 | 0.018                      | 0.054 | 2,250                                                 | EKZH6R3E□□272MJ25S |
|             | 3,900       | 12.5×20               | 0.017                      | 0.043 | 2,480                                                 | EKZH6R3E□□392MK20S |
|             | 4,700       | 12.5×25               | 0.015                      | 0.038 | 2,900                                                 | EKZH6R3E□□472MK25S |
|             | 5,600       | 12.5×30               | 0.013                      | 0.033 | 3,450                                                 | EKZH6R3E□□562MK30S |
|             | 6,800       | 12.5×35               | 0.012                      | 0.031 | 3,570                                                 | EKZH6R3E□□682MK35S |
|             | 6,800       | 16×20                 | 0.015                      | 0.038 | 3,250                                                 | EKZH6R3E□□682ML20S |
|             | 8,200       | 16×25                 | 0.013                      | 0.035 | 3,630                                                 | EKZH6R3E□□822ML25S |
| 10          | 150         | 5×11                  | 0.24                       | 0.80  | 330                                                   | EKZH100E□□151ME11D |
|             | 330         | 6.3×11                | 0.11                       | 0.35  | 500                                                   | EKZH100E□□331MF11D |
|             | 680         | 8×11.5                | 0.062                      | 0.19  | 900                                                   | EKZH100E□□681MHB5D |
|             | 1,000       | 8×15                  | 0.048                      | 0.15  | 1,210                                                 | EKZH100E□□102MH15D |
|             | 1,000       | 10×12.5               | 0.045                      | 0.14  | 1,240                                                 | EKZH100E□□102MJC5S |
|             | 1,500       | 8×20                  | 0.033                      | 0.11  | 1,410                                                 | EKZH100E□□152MH20D |
|             | 1,500       | 10×16                 | 0.032                      | 0.10  | 1,650                                                 | EKZH100E□□152MJ16S |
|             | 1,800       | 10×20                 | 0.020                      | 0.060 | 1,960                                                 | EKZH100E□□182MJ20S |
|             | 2,200       | 10×25                 | 0.018                      | 0.054 | 2,250                                                 | EKZH100E□□222MJ25S |
|             | 3,300       | 12.5×20               | 0.017                      | 0.043 | 2,480                                                 | EKZH100E□□332MK20S |
|             | 3,900       | 12.5×25               | 0.015                      | 0.038 | 2,900                                                 | EKZH100E□□392MK25S |
|             | 4,700       | 12.5×30               | 0.013                      | 0.033 | 3,450                                                 | EKZH100E□□472MK30S |
| 16          | 4,700       | 16×20                 | 0.015                      | 0.038 | 3,250                                                 | EKZH100E□□472ML20S |
|             | 5,600       | 12.5×35               | 0.012                      | 0.031 | 3,570                                                 | EKZH100E□□562MK35S |
|             | 6,800       | 16×25                 | 0.013                      | 0.035 | 3,630                                                 | EKZH100E□□682ML25S |
|             | 100         | 5×11                  | 0.24                       | 0.80  | 330                                                   | EKZH160E□□101ME11D |
|             | 220         | 6.3×11                | 0.11                       | 0.35  | 500                                                   | EKZH160E□□221MF11D |
|             | 470         | 8×11.5                | 0.062                      | 0.19  | 900                                                   | EKZH160E□□471MHB5D |
|             | 680         | 8×15                  | 0.048                      | 0.15  | 1,210                                                 | EKZH160E□□681MH15D |
|             | 680         | 10×12.5               | 0.045                      | 0.14  | 1,240                                                 | EKZH160E□□681MJC5S |
|             | 1,000       | 8×20                  | 0.033                      | 0.11  | 1,410                                                 | EKZH160E□□102MH20D |
|             | 1,000       | 10×16                 | 0.032                      | 0.10  | 1,650                                                 | EKZH160E□□102MJ16S |
|             | 1,500       | 10×20                 | 0.020                      | 0.060 | 1,960                                                 | EKZH160E□□152MJ20S |
|             | 1,500       | 10×20                 | 0.020                      | 0.060 | 1,960                                                 | EKZH160E□□152MJ20S |

□ □ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance(μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|----------------|------|------|------|------|
| 0.47 to 150     |                | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 560      |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800    |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900  |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to 8,200  |                | 0.85 | 0.95 | 0.98 | 1.00 |

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The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

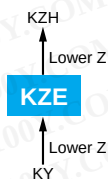


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

## KZE Series

- Ultra Low impedance for Personal Computer and Storage Equipment
- Endurance with ripple current: 1,000 to 5,000 hours at 105°C
- Non solvent-proof type
- RoHS Compliant

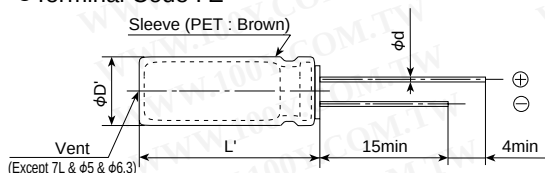
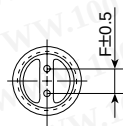
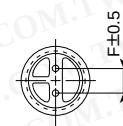


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                            |  |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Category                                               | Temperature Range                                                                                                                                                                                          |  |
| Rated Voltage Range                                    | -40 to +105°C                                                                                                                                                                                              |  |
| Capacitance Tolerance                                  | 6.3 to 100V <sub>dc</sub>                                                                                                                                                                                  |  |
| Leakage Current                                        | ±20% (M)                                                                                                                                                                                                   |  |
| Dissipation Factor (tanδ)                              | I=0.01CV or 3µA, whichever is greater.                                                                                                                                                                     |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V)                                                                                                                  |  |
| Endurance                                              | (at 20°C, 120Hz)                                                                                                                                                                                           |  |
| Shelf Life                                             | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           |  |
|                                                        | tanδ (Max.)                                                                                                                                                                                                |  |
|                                                        | When nominal capacitance exceeds 1,000µF, add 0.02 to the value above for each 1,000µF increase.                                                                                                           |  |
|                                                        | (at 20°C, 120Hz)                                                                                                                                                                                           |  |
|                                                        | Z (-25°C) / Z (+20°C)                                                                                                                                                                                      |  |
|                                                        | 2max.                                                                                                                                                                                                      |  |
|                                                        | Z (-40°C) / Z (+20°C)                                                                                                                                                                                      |  |
|                                                        | 3max.                                                                                                                                                                                                      |  |
|                                                        | (at 120Hz)                                                                                                                                                                                                 |  |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |  |
|                                                        | Time                                                                                                                                                                                                       |  |
|                                                        | Capacitance change                                                                                                                                                                                         |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                |  |
|                                                        | Leakage current                                                                                                                                                                                            |  |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.                                               |  |
|                                                        | Capacitance change                                                                                                                                                                                         |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                |  |
|                                                        | Leakage current                                                                                                                                                                                            |  |

## ◆DIMENSIONS [mm]

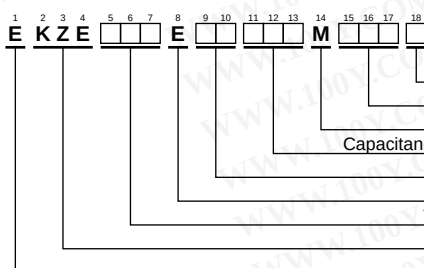
- Terminal Code : E



| φD  | 5                          | 6.3  | 8    | 10, 12.5 | 16, 18 |
|-----|----------------------------|------|------|----------|--------|
| φd  | 7L                         | 0.45 | 0.45 | 0.45     | —      |
|     | 11L~                       | 0.5  | 0.5  | 0.6      | 0.8    |
| F   | 2.0                        | 2.5  | 3.5  | 5.0      | 7.5    |
| φD' | φD+0.5max.                 |      |      |          |        |
| L'  | L+1.5max. (7L : L+1.0max.) |      |      |          |        |

Gas escape end seal

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

KZE Series

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 胜特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mArms/<br>105°C,<br>100kHz) | Part No.           | WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mArms/<br>105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|------------------------------------------------------------|--------------------|-------------|-------------|-----------------------|----------------------------|-------|------------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                            |                    |             |             |                       | 20°C                       | -10°C |                                                            |                    |
| 6.3         | 68          | 5×7                   | 0.43                       | 1.3   | 210                                                        | EKZE6R3E□□680ME07D | 25          | 820         | 10×25                 | 0.022                      | 0.066 | 2,150                                                      | EKZE250E□□821MJ25S |
|             | 150         | 6.3×7                 | 0.23                       | 0.69  | 300                                                        | EKZE6R3E□□151MF07D |             | 1,000       | 12.5×20               | 0.021                      | 0.053 | 2,360                                                      | EKZE250E□□102MK20S |
|             | 150         | 5×11                  | 0.30                       | 1.0   | 250                                                        | EKZE6R3E□□151ME11D |             | 1,500       | 12.5×25               | 0.018                      | 0.045 | 2,770                                                      | EKZE250E□□152MK25S |
|             | 220         | 8×7                   | 0.15                       | 0.45  | 380                                                        | EKZE6R3E□□221MH07D |             | 1,800       | 12.5×30               | 0.016                      | 0.041 | 3,290                                                      | EKZE250E□□182MK30S |
|             | 330         | 6.3×11                | 0.13                       | 0.41  | 405                                                        | EKZE6R3E□□331MF11D |             | 1,800       | 16×20                 | 0.018                      | 0.045 | 3,140                                                      | EKZE250E□□182ML20S |
|             | 560         | 8×11.5                | 0.072                      | 0.22  | 760                                                        | EKZE6R3E□□561MHB5D |             | 2,200       | 12.5×35               | 0.015                      | 0.039 | 3,400                                                      | EKZE250E□□222MK35S |
|             | 820         | 8×15                  | 0.056                      | 0.17  | 995                                                        | EKZE6R3E□□821MH15D |             | 2,700       | 16×25                 | 0.016                      | 0.043 | 3,460                                                      | EKZE250E□□272ML25S |
|             | 1,000       | 10×12.5               | 0.053                      | 0.16  | 1,030                                                      | EKZE6R3E□□102MJCS5 |             | 18          | 5×7                   | 0.47                       | 1.5   | 210                                                        | EKZE350E□□180ME07D |
|             | 1,200       | 8×20                  | 0.041                      | 0.13  | 1,250                                                      | EKZE6R3E□□122MH20D |             | 33          | 5×11                  | 0.30                       | 1.0   | 250                                                        | EKZE350E□□330ME11D |
|             | 1,200       | 10×16                 | 0.038                      | 0.12  | 1,430                                                      | EKZE6R3E□□122MJ16S |             | 39          | 6.3×7                 | 0.25                       | 0.75  | 300                                                        | EKZE350E□□390MF07D |
|             | 1,500       | 10×20                 | 0.023                      | 0.069 | 1,820                                                      | EKZE6R3E□□152MJ20S |             | 56          | 8×7                   | 0.16                       | 0.48  | 380                                                        | EKZE350E□□560MH07D |
|             | 2,200       | 10×25                 | 0.022                      | 0.066 | 2,150                                                      | EKZE6R3E□□222MJ25S |             | 56          | 6.3×11                | 0.13                       | 0.41  | 405                                                        | EKZE350E□□560MF11D |
|             | 3,300       | 12.5×20               | 0.021                      | 0.053 | 2,360                                                      | EKZE6R3E□□332MK20S |             | 150         | 8×11.5                | 0.072                      | 0.22  | 760                                                        | EKZE350E□□151MHB5D |
|             | 3,900       | 12.5×25               | 0.018                      | 0.045 | 2,770                                                      | EKZE6R3E□□392MK25S |             | 220         | 8×15                  | 0.056                      | 0.17  | 995                                                        | EKZE350E□□221MH15D |
|             | 4,700       | 12.5×30               | 0.016                      | 0.041 | 3,290                                                      | EKZE6R3E□□472MK30S |             | 220         | 10×12.5               | 0.053                      | 0.16  | 1,030                                                      | EKZE350E□□221MJCS5 |
|             | 5,600       | 12.5×35               | 0.015                      | 0.039 | 3,400                                                      | EKZE6R3E□□562MK35S |             | 270         | 8×20                  | 0.041                      | 0.13  | 1,250                                                      | EKZE350E□□271MH20D |
|             | 5,600       | 16×20                 | 0.018                      | 0.045 | 3,140                                                      | EKZE6R3E□□562ML20S |             | 330         | 10×16                 | 0.038                      | 0.12  | 1,430                                                      | EKZE350E□□331MJ16S |
|             | 6,800       | 16×25                 | 0.016                      | 0.043 | 3,460                                                      | EKZE6R3E□□682ML25S |             | 470         | 10×20                 | 0.023                      | 0.069 | 1,820                                                      | EKZE350E□□471MJ20S |
| 10          | 56          | 5×7                   | 0.44                       | 1.4   | 210                                                        | EKZE100E□□560ME07D | 35          | 560         | 10×25                 | 0.022                      | 0.066 | 2,150                                                      | EKZE350E□□561MJ25S |
|             | 100         | 5×11                  | 0.30                       | 1.0   | 250                                                        | EKZE100E□□101ME11D |             | 680         | 12.5×20               | 0.021                      | 0.053 | 2,360                                                      | EKZE350E□□681MK20S |
|             | 120         | 6.3×7                 | 0.23                       | 0.69  | 300                                                        | EKZE100E□□121MF07D |             | 1,000       | 12.5×25               | 0.018                      | 0.045 | 2,770                                                      | EKZE350E□□102MK25S |
|             | 180         | 8×7                   | 0.15                       | 0.45  | 380                                                        | EKZE100E□□181MH07D |             | 1,200       | 12.5×30               | 0.016                      | 0.041 | 3,290                                                      | EKZE350E□□122MK30S |
|             | 220         | 6.3×11                | 0.13                       | 0.41  | 405                                                        | EKZE100E□□221MF11D |             | 1,200       | 16×20                 | 0.018                      | 0.045 | 3,140                                                      | EKZE350E□□122ML20S |
|             | 470         | 8×11.5                | 0.072                      | 0.22  | 760                                                        | EKZE100E□□471MHB5D |             | 1,500       | 12.5×35               | 0.015                      | 0.039 | 3,400                                                      | EKZE350E□□152MK35S |
|             | 680         | 8×15                  | 0.056                      | 0.17  | 995                                                        | EKZE100E□□681MH15D |             | 1,800       | 16×25                 | 0.016                      | 0.043 | 3,460                                                      | EKZE350E□□182ML25S |
|             | 680         | 10×12.5               | 0.053                      | 0.16  | 1,030                                                      | EKZE100E□□681MJCS5 |             | 10          | 5×7                   | 0.50                       | 1.5   | 210                                                        | EKZE500E□□100ME07D |
|             | 1,000       | 8×20                  | 0.041                      | 0.13  | 1,250                                                      | EKZE100E□□102MH20D |             | 22          | 6.3×7                 | 0.26                       | 0.78  | 300                                                        | EKZE500E□□220MF07D |
|             | 1,000       | 10×16                 | 0.038                      | 0.12  | 1,430                                                      | EKZE100E□□102MJ16S |             | 22          | 5×11                  | 0.34                       | 1.18  | 238                                                        | EKZE500E□□220ME11D |
|             | 1,200       | 10×20                 | 0.023                      | 0.069 | 1,820                                                      | EKZE100E□□122MJ20S |             | 33          | 8×7                   | 0.17                       | 0.51  | 380                                                        | EKZE500E□□330MH07D |
|             | 1,500       | 10×25                 | 0.022                      | 0.066 | 2,150                                                      | EKZE100E□□152MJ25S |             | 56          | 6.3×11                | 0.14                       | 0.50  | 385                                                        | EKZE500E□□560MF11D |
|             | 2,200       | 12.5×20               | 0.021                      | 0.053 | 2,360                                                      | EKZE100E□□222MK20S |             | 100         | 8×11.5                | 0.074                      | 0.22  | 724                                                        | EKZE500E□□101MHB5D |
|             | 3,300       | 12.5×25               | 0.018                      | 0.045 | 2,770                                                      | EKZE100E□□332MK25S |             | 120         | 8×15                  | 0.061                      | 0.18  | 950                                                        | EKZE500E□□121MH15D |
|             | 3,900       | 12.5×30               | 0.016                      | 0.041 | 3,290                                                      | EKZE100E□□392MK30S |             | 150         | 10×12.5               | 0.061                      | 0.18  | 979                                                        | EKZE500E□□151MJCS5 |
|             | 3,900       | 16×20                 | 0.018                      | 0.045 | 3,140                                                      | EKZE100E□□392ML20S |             | 180         | 8×20                  | 0.046                      | 0.14  | 1,190                                                      | EKZE500E□□181MH20D |
|             | 4,700       | 12.5×35               | 0.015                      | 0.039 | 3,400                                                      | EKZE100E□□472MK35S |             | 220         | 10×16                 | 0.042                      | 0.12  | 1,370                                                      | EKZE500E□□221MJ16S |
|             | 5,600       | 16×25                 | 0.016                      | 0.043 | 3,460                                                      | EKZE100E□□562ML25S |             | 270         | 10×20                 | 0.030                      | 0.090 | 1,580                                                      | EKZE500E□□271MJ20S |
| 16          | 33          | 5×7                   | 0.45                       | 1.4   | 210                                                        | EKZE160E□□330ME07D | 50          | 330         | 10×25                 | 0.028                      | 0.085 | 1,870                                                      | EKZE500E□□331MJ25S |
|             | 56          | 5×11                  | 0.30                       | 1.0   | 250                                                        | EKZE160E□□560ME11D |             | 470         | 12.5×20               | 0.027                      | 0.068 | 2,050                                                      | EKZE500E□□471MK20S |
|             | 68          | 6.3×7                 | 0.24                       | 0.72  | 300                                                        | EKZE160E□□680MF07D |             | 560         | 12.5×25               | 0.023                      | 0.059 | 2,410                                                      | EKZE500E□□561MK25S |
|             | 120         | 8×7                   | 0.15                       | 0.45  | 380                                                        | EKZE160E□□121MH07D |             | 680         | 12.5×30               | 0.021                      | 0.052 | 2,860                                                      | EKZE500E□□681MK30S |
|             | 120         | 6.3×11                | 0.13                       | 0.41  | 405                                                        | EKZE160E□□121MF11D |             | 820         | 12.5×35               | 0.019                      | 0.051 | 2,960                                                      | EKZE500E□□821MK35S |
|             | 330         | 8×11.5                | 0.072                      | 0.22  | 760                                                        | EKZE160E□□331MHB5D |             | 820         | 16×20                 | 0.023                      | 0.059 | 2,730                                                      | EKZE500E□□821ML20S |
|             | 470         | 8×15                  | 0.056                      | 0.17  | 995                                                        | EKZE160E□□471MH15D |             | 1,000       | 16×25                 | 0.021                      | 0.056 | 3,010                                                      | EKZE500E□□102ML25S |
|             | 470         | 10×12.5               | 0.053                      | 0.16  | 1,030                                                      | EKZE160E□□471MJCS5 |             | 15          | 5×11                  | 0.88                       | 3.5   | 165                                                        | EKZE630E□□150ME11D |
|             | 680         | 8×20                  | 0.041                      | 0.13  | 1,250                                                      | EKZE160E□□681MH20D |             | 33          | 6.3×11                | 0.35                       | 1.4   | 265                                                        | EKZE630E□□330MF11D |
|             | 680         | 10×16                 | 0.038                      | 0.12  | 1,430                                                      | EKZE160E□□681MJ16S |             | 56          | 8×11.5                | 0.22                       | 0.88  | 500                                                        | EKZE630E□□560MHB5D |
|             | 1,000       | 10×20                 | 0.023                      | 0.069 | 1,820                                                      | EKZE160E□□102MJ20S |             | 82          | 8×15                  | 0.16                       | 0.64  | 665                                                        | EKZE630E□□820MH15D |
|             | 1,200       | 10×25                 | 0.022                      | 0.066 | 2,150                                                      | EKZE160E□□122MJ25S |             | 82          | 10×12.5               | 0.11                       | 0.44  | 690                                                        | EKZE630E□□820MJCS5 |
|             | 1,500       | 12.5×20               | 0.021                      | 0.053 | 2,360                                                      | EKZE160E□□152MK20S |             | 120         | 8×20                  | 0.12                       | 0.48  | 820                                                        | EKZE630E□□121MH20D |
|             | 2,200       | 12.5×25               | 0.018                      | 0.045 | 2,770                                                      | EKZE160E□□222MK25S |             | 120         | 10×16                 | 0.076                      | 0.31  | 950                                                        | EKZE630E□□121MJ16S |
|             | 2,700       | 12.5×30               | 0.016                      | 0.041 | 3,290                                                      | EKZE160E□□272MK30S |             | 180         | 10×20                 | 0.056                      | 0.23  | 1,150                                                      | EKZE630E□□181MJ20S |
|             | 2,700       | 16×20                 | 0.018                      | 0.045 | 3,140                                                      | EKZE160E□□272ML20S |             | 180         | 12.5×16               | 0.072                      | 0.29  | 1,150                                                      | EKZE630E□□181MK16S |
|             | 3,300       | 12.5×35               | 0.015                      | 0.039 | 3,400                                                      | EKZE160E□□332MK35S |             | 220         | 10×25                 | 0.046                      | 0.19  | 1,350                                                      | EKZE630E□□221MJ25S |
|             | 3,900       | 16×25                 | 0.016                      | 0.043 | 3,460                                                      | EKZE160E□□392ML25S |             | 270         | 12.5×20               | 0.041                      | 0.13  | 1,500                                                      | EKZE630E□□271MK20S |
| 25          | 27          | 5×7                   | 0.46                       | 1.4   | 210                                                        | EKZE250E□□270ME07D | 63          | 390         | 12.5×25               | 0.031                      | 0.093 | 1,900                                                      | EKZE630E□□391MK25S |
|             | 47          | 5×11                  | 0.30                       | 1.0   | 250                                                        | EKZE250E□□470ME11D |             | 470         | 12.5×30               | 0.028                      | 0.084 | 2,300                                                      | EKZE630E□□471MK30S |
|             | 56          | 6.3×7                 | 0.24                       | 0.72  | 300                                                        | EKZE250E□□560MF07D |             | 470         | 16×20                 | 0.032                      | 0.096 | 2,000                                                      | EKZE630E□□471ML20S |
|             | 100         | 8×7                   | 0.15                       | 0.45  | 380                                                        | EKZE250E□□101MH07D |             | 560         | 12.5×35               | 0.024                      | 0.072 | 2,500                                                      | EKZE630E□□561MK35S |
|             | 100         | 6.3×11                | 0.13                       | 0.41  | 405                                                        | EKZE250E□□101MF11D |             | 680         | 12.5×40               | 0.021                      | 0.063 | 2,800                                                      | EKZE630E□□681MK40S |
|             | 220         | 8×11.5                | 0.072                      | 0.22  | 760                                                        | EKZE250E□□221MHB5D |             | 680         | 16×25                 | 0.025                      | 0.075 | 2,600                                                      | EKZE630E□□681ML25S |
|             | 330         | 8×15                  | 0.056                      | 0.17  | 995                                                        | EKZE250E□□331MH15D |             | 680         | 18×20                 | 0.030                      | 0.090 | 2,500                                                      | EKZE630E□□681MM20S |
|             | 330         | 10×12.5               | 0.053                      | 0.16  | 1,030                                                      | EKZE250E□□331MJCS5 |             | 820         | 16×31.5               | 0.021                      | 0.063 | 2,850                                                      | EKZE630E□□821MLN3S |
|             | 470         | 8×20                  | 0.041                      | 0.13  | 1,250                                                      | EKZE250E□□471MH20D |             | 820         | 18×25                 | 0.024                      | 0.072 | 2,800                                                      | EKZE630E□□821MM25S |
|             | 470         | 10×16                 | 0.038                      | 0.12  | 1,430                                                      | EKZE250E□□471MJ16S |             | 1,000       | 16×35.5               | 0.019                      | 0.057 | 2,900                                                      | EKZE630E□□102MLP1S |
|             | 680         | 10×20                 | 0.023                      | 0.069 | 1,820                                                      | EKZE250E□□681MJ20S |             | 1,200       | 16×40                 | 0.018                      | 0.054 | 3,400                                                      | EKZE630E□□122ML40S |

□ □ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

KZE Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA <sub>rms</sub> /105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|---------------------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                                     |                    |
| 63          | 1,200       | 18×31.5               | 0.020                      | 0.060 | 3,300                                                               | EKZE630E□□122MMN3S |
|             | 1,500       | 18×35.5               | 0.018                      | 0.054 | 3,400                                                               | EKZE630E□□152MMP1S |
|             | 1,800       | 18×40                 | 0.017                      | 0.051 | 3,500                                                               | EKZE630E□□182MM40S |
|             | 68          | 10×12.5               | 0.17                       | 0.66  | 480                                                                 | EKZE800E□□680MJC5S |
| 80          | 100         | 10×16                 | 0.11                       | 0.47  | 600                                                                 | EKZE800E□□101MJ16S |
|             | 120         | 10×20                 | 0.084                      | 0.34  | 800                                                                 | EKZE800E□□121MJ20S |
|             | 150         | 10×25                 | 0.069                      | 0.28  | 900                                                                 | EKZE800E□□151MJ25S |
|             | 150         | 12.5×16               | 0.11                       | 0.34  | 750                                                                 | EKZE800E□□151MK16S |
|             | 220         | 12.5×20               | 0.062                      | 0.18  | 1,100                                                               | EKZE800E□□221MK20S |
|             | 330         | 12.5×25               | 0.047                      | 0.14  | 1,250                                                               | EKZE800E□□331MK25S |
|             | 330         | 16×20                 | 0.048                      | 0.15  | 1,350                                                               | EKZE800E□□331ML20S |
|             | 390         | 12.5×30               | 0.042                      | 0.13  | 1,500                                                               | EKZE800E□□391MK30S |
|             | 470         | 12.5×35               | 0.036                      | 0.11  | 1,650                                                               | EKZE800E□□471MK35S |
|             | 470         | 16×25                 | 0.038                      | 0.12  | 1,700                                                               | EKZE800E□□471ML25S |
|             | 470         | 18×20                 | 0.045                      | 0.14  | 1,500                                                               | EKZE800E□□471MM20S |
|             | 560         | 12.5×40               | 0.032                      | 0.095 | 1,800                                                               | EKZE800E□□561MK40S |
|             | 680         | 16×31.5               | 0.032                      | 0.095 | 1,850                                                               | EKZE800E□□681MLN3S |
|             | 680         | 18×25                 | 0.036                      | 0.11  | 1,750                                                               | EKZE800E□□681MM25S |
|             | 820         | 16×35.5               | 0.029                      | 0.086 | 2,000                                                               | EKZE800E□□821MLP1S |
|             | 820         | 18×31.5               | 0.030                      | 0.090 | 1,900                                                               | EKZE800E□□821MMN3S |
|             | 1,000       | 16×40                 | 0.027                      | 0.081 | 2,200                                                               | EKZE800E□□102ML40S |
|             | 1,000       | 18×35.5               | 0.027                      | 0.081 | 2,200                                                               | EKZE800E□□102MMP1S |
|             | 1,200       | 18×40                 | 0.026                      | 0.077 | 2,700                                                               | EKZE800E□□122MM40S |
| 100         | 6.8         | 5×11                  | 1.4                        | 5.6   | 125                                                                 | EKZE101E□□6R8ME11D |
|             | 15          | 6.3×11                | 0.57                       | 2.3   | 205                                                                 | EKZE101E□□150MF11D |
|             | 27          | 8×11.5                | 0.36                       | 1.4   | 355                                                                 | EKZE101E□□270MHB5D |
|             | 39          | 8×15                  | 0.25                       | 1.0   | 450                                                                 | EKZE101E□□390MH15D |
|             | 47          | 10×12.5               | 0.17                       | 0.66  | 480                                                                 | EKZE101E□□470MJC5S |
|             | 56          | 8×20                  | 0.19                       | 0.76  | 565                                                                 | EKZE101E□□560MH20D |
|             | 68          | 10×16                 | 0.11                       | 0.47  | 600                                                                 | EKZE101E□□680MJ16S |
|             | 82          | 10×20                 | 0.084                      | 0.34  | 800                                                                 | EKZE101E□□820MJ20S |
|             | 100         | 12.5×16               | 0.11                       | 0.34  | 750                                                                 | EKZE101E□□101MK16S |
|             | 120         | 10×25                 | 0.069                      | 0.28  | 900                                                                 | EKZE101E□□121MJ25S |
|             | 150         | 12.5×20               | 0.062                      | 0.18  | 1,100                                                               | EKZE101E□□151MK20S |
|             | 220         | 12.5×25               | 0.047                      | 0.14  | 1,250                                                               | EKZE101E□□221MK25S |
|             | 220         | 16×20                 | 0.048                      | 0.15  | 1,350                                                               | EKZE101E□□221ML20S |
|             | 270         | 12.5×30               | 0.042                      | 0.13  | 1,500                                                               | EKZE101E□□271MK30S |
|             | 330         | 12.5×35               | 0.036                      | 0.11  | 1,650                                                               | EKZE101E□□331MK35S |
|             | 330         | 16×25                 | 0.038                      | 0.12  | 1,700                                                               | EKZE101E□□331ML25S |
|             | 330         | 18×20                 | 0.045                      | 0.14  | 1,500                                                               | EKZE101E□□331MM20S |
|             | 390         | 12.5×40               | 0.032                      | 0.095 | 1,800                                                               | EKZE101E□□391MK40S |
|             | 470         | 16×31.5               | 0.032                      | 0.095 | 1,850                                                               | EKZE101E□□471MLN3S |
|             | 470         | 18×25                 | 0.036                      | 0.11  | 1,750                                                               | EKZE101E□□471MM25S |
|             | 560         | 16×35.5               | 0.029                      | 0.086 | 2,000                                                               | EKZE101E□□561MLP1S |
|             | 560         | 18×31.5               | 0.030                      | 0.090 | 1,900                                                               | EKZE101E□□561MMN3S |
|             | 680         | 16×40                 | 0.027                      | 0.081 | 2,200                                                               | EKZE101E□□681ML40S |
|             | 680         | 18×35.5               | 0.027                      | 0.081 | 2,200                                                               | EKZE101E□□681MMP1S |
|             | 820         | 18×40                 | 0.026                      | 0.077 | 2,700                                                               | EKZE101E□□821MM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

7L

| Capacitance(μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|----------------|------|------|------|------|
| 10 to 33        |                | 0.42 | 0.70 | 0.90 | 1.00 |
| 39 to 220       |                | 0.50 | 0.73 | 0.92 | 1.00 |

11L to 40L

| Capacitance(μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|----------------|------|------|------|------|
| 6.8 to 180      |                | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 560      |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800    |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900  |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to        |                | 0.85 | 0.95 | 0.98 | 1.00 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

Upgrade!

KY Series

- Newly innovative electrolyte is employed to minimize ESR
- Endurance with ripple current : 4,000 to 10,000 hours at 105°C
- Non solvent-proof type
- 63 to 100V<sub>dc</sub> newly added
- RoHS Compliant

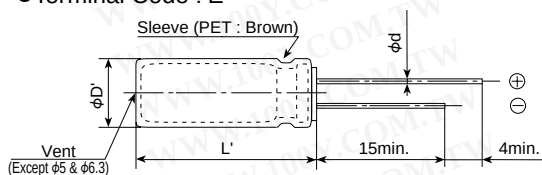
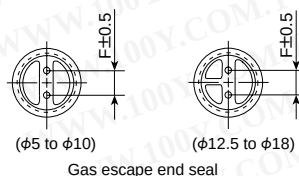


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                            |                                      |                       |      |                      |      |                           |      |      |      |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------|------|----------------------|------|---------------------------|------|------|------|
| Category                                               | Temperature Range                                                                                                                                                                                          |                                      |                       |      |                      |      |                           |      |      |      |
| Temperature Range                                      | -40 to +105°C                                                                                                                                                                                              |                                      |                       |      |                      |      |                           |      |      |      |
| Rated Voltage Range                                    | 6.3 to 100V <sub>dc</sub>                                                                                                                                                                                  |                                      |                       |      |                      |      |                           |      |      |      |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                  |                                      |                       |      |                      |      |                           |      |      |      |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                              |                                      |                       |      |                      |      |                           |      |      |      |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 6.3V                                 | 10V                   | 16V  | 25V                  | 35V  | 50V                       | 63V  | 80V  | 100V |
|                                                        | tanδ (Max.)                                                                                                                                                                                                | 0.22                                 | 0.19                  | 0.16 | 0.14                 | 0.12 | 0.10                      | 0.09 | 0.09 | 0.08 |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                          |                                      |                       |      |                      |      |                           |      |      |      |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 6.3V                                 | 10V                   | 16V  | 25V                  | 35V  | 50V                       | 63V  | 80V  | 100V |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                                          | 4                                    | 3                     | 2    | 2                    | 2    | 2                         | 2    | 2    | 2    |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                                                                          | 8                                    | 6                     | 4    | 3                    | 3    | 3                         | 3    | 3    | 3    |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |                                      |                       |      |                      |      |                           |      |      |      |
|                                                        | Time                                                                                                                                                                                                       | 6.3 to 10V <sub>dc</sub>             | φ5 & 6.3 : 4,000hours |      | φ8 & 10 : 6,000hours |      | φ12.5 to 18 : 8,000hours  |      |      |      |
|                                                        |                                                                                                                                                                                                            | 16 to 50V <sub>dc</sub>              | φ5 & 6.3 : 5,000hours |      | φ8 & 10 : 7,000hours |      | φ12.5 to 18 : 10,000hours |      |      |      |
|                                                        | Capacitance change                                                                                                                                                                                         | ≤±25% of the initial value           |                       |      |                      |      |                           |      |      |      |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value |                       |      |                      |      |                           |      |      |      |
|                                                        | Leakage current                                                                                                                                                                                            | ≤The initial specified value         |                       |      |                      |      |                           |      |      |      |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.                                               |                                      |                       |      |                      |      |                           |      |      |      |
|                                                        | Capacitance change                                                                                                                                                                                         | ≤±25% of the initial value           |                       |      |                      |      |                           |      |      |      |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value |                       |      |                      |      |                           |      |      |      |
|                                                        | Leakage current                                                                                                                                                                                            | ≤The initial specified value         |                       |      |                      |      |                           |      |      |      |

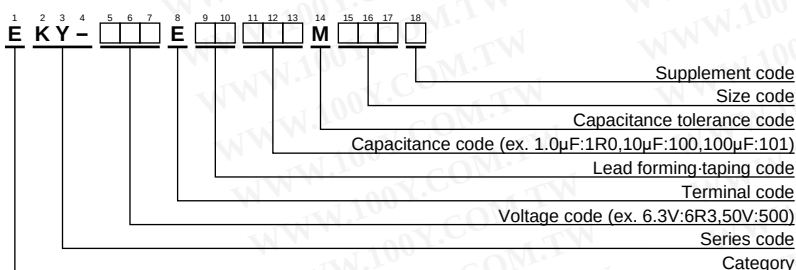
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     |
| L'  | L+1.5max.  |     |     |     |      |     |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

Upgrade!

KY Series

勝特力材料 886-3-5753170  
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 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.          |
|-------------|-------------|-----------------------|----------------------------|-------|-------------------------------------------------------------|-------------------|
|             |             |                       | 20°C                       | -10°C |                                                             |                   |
| 6.3         | 150         | 5×11                  | 0.58                       | 2.3   | 210                                                         | EKY-6R3□□151ME11D |
|             | 330         | 6.3×11                | 0.22                       | 0.87  | 340                                                         | EKY-6R3□□331MF11D |
|             | 680         | 8×11.5                | 0.13                       | 0.52  | 640                                                         | EKY-6R3□□681MHB5D |
|             | 820         | 10×12.5               | 0.080                      | 0.32  | 865                                                         | EKY-6R3□□821MJC5S |
|             | 1,000       | 8×15                  | 0.087                      | 0.35  | 840                                                         | EKY-6R3□□102MH15D |
|             | 1,200       | 8×20                  | 0.069                      | 0.27  | 1,050                                                       | EKY-6R3□□122MH20D |
|             | 1,200       | 10×16                 | 0.060                      | 0.24  | 1,210                                                       | EKY-6R3□□122MJ16S |
|             | 1,500       | 10×20                 | 0.046                      | 0.18  | 1,400                                                       | EKY-6R3□□152MJ20S |
|             | 1,800       | 12.5×15               | 0.049                      | 0.16  | 1,450                                                       | EKY-6R3□□182MK15S |
|             | 2,200       | 10×25                 | 0.042                      | 0.17  | 1,650                                                       | EKY-6R3□□222MJ25S |
|             | 2,700       | 10×30                 | 0.031                      | 0.12  | 1,910                                                       | EKY-6R3□□272MJ30S |
|             | 2,700       | 16×15                 | 0.042                      | 0.12  | 1,940                                                       | EKY-6R3□□272ML15S |
|             | 3,300       | 12.5×20               | 0.035                      | 0.12  | 1,900                                                       | EKY-6R3□□332MK20S |
|             | 3,900       | 12.5×25               | 0.027                      | 0.089 | 2,230                                                       | EKY-6R3□□392MK25S |
|             | 3,900       | 18×15                 | 0.043                      | 0.11  | 2,210                                                       | EKY-6R3□□392MM15S |
|             | 4,700       | 12.5×30               | 0.024                      | 0.078 | 2,650                                                       | EKY-6R3□□472MK30S |
|             | 5,600       | 12.5×35               | 0.020                      | 0.065 | 2,880                                                       | EKY-6R3□□562MK35S |
|             | 5,600       | 16×20                 | 0.027                      | 0.078 | 2,530                                                       | EKY-6R3□□562ML20S |
|             | 6,800       | 12.5×40               | 0.017                      | 0.056 | 3,350                                                       | EKY-6R3□□682MK40S |
|             | 6,800       | 16×25                 | 0.021                      | 0.060 | 2,930                                                       | EKY-6R3□□682ML25S |
|             | 6,800       | 18×20                 | 0.026                      | 0.067 | 2,860                                                       | EKY-6R3□□682MM20S |
|             | 8,200       | 16×31.5               | 0.017                      | 0.050 | 3,450                                                       | EKY-6R3□□822MLN3S |
|             | 10,000      | 16×35.5               | 0.015                      | 0.044 | 3,610                                                       | EKY-6R3□□103MLP1S |
|             | 10,000      | 18×25                 | 0.019                      | 0.049 | 3,140                                                       | EKY-6R3□□103MM25S |
|             | 12,000      | 16×40                 | 0.013                      | 0.038 | 4,080                                                       | EKY-6R3□□123ML40S |
|             | 12,000      | 18×31.5               | 0.015                      | 0.040 | 4,170                                                       | EKY-6R3□□123MMN3S |
|             | 15,000      | 18×35.5               | 0.014                      | 0.038 | 4,220                                                       | EKY-6R3□□153MMP1S |
|             | 18,000      | 18×40                 | 0.012                      | 0.032 | 4,280                                                       | EKY-6R3□□183MM40S |
| 10          | 100         | 5×11                  | 0.58                       | 2.3   | 210                                                         | EKY-100□□101ME11D |
|             | 220         | 6.3×11                | 0.22                       | 0.87  | 340                                                         | EKY-100□□221MF11D |
|             | 470         | 8×11.5                | 0.13                       | 0.52  | 640                                                         | EKY-100□□471MHB5D |
|             | 680         | 8×15                  | 0.087                      | 0.35  | 840                                                         | EKY-100□□681MH15D |
|             | 680         | 10×12.5               | 0.080                      | 0.32  | 865                                                         | EKY-100□□681MJC5S |
|             | 1,000       | 8×20                  | 0.069                      | 0.27  | 1,050                                                       | EKY-100□□102MH20D |
|             | 1,000       | 10×16                 | 0.060                      | 0.24  | 1,210                                                       | EKY-100□□102MJ16S |
|             | 1,200       | 10×20                 | 0.046                      | 0.18  | 1,400                                                       | EKY-100□□122MJ20S |
|             | 1,500       | 10×25                 | 0.042                      | 0.17  | 1,650                                                       | EKY-100□□152MJ25S |
|             | 1,500       | 12.5×15               | 0.049                      | 0.16  | 1,450                                                       | EKY-100□□152MK15S |
|             | 2,200       | 10×30                 | 0.031                      | 0.12  | 1,910                                                       | EKY-100□□222MJ30S |
|             | 2,200       | 12.5×20               | 0.035                      | 0.12  | 1,900                                                       | EKY-100□□222MK20S |
|             | 2,200       | 16×15                 | 0.042                      | 0.12  | 1,940                                                       | EKY-100□□222ML15S |
|             | 2,700       | 18×15                 | 0.043                      | 0.11  | 2,210                                                       | EKY-100□□272MM15S |
|             | 3,300       | 12.5×25               | 0.027                      | 0.089 | 2,230                                                       | EKY-100□□332MK25S |
|             | 3,900       | 12.5×30               | 0.024                      | 0.078 | 2,650                                                       | EKY-100□□392MK30S |
|             | 3,900       | 16×20                 | 0.027                      | 0.078 | 2,530                                                       | EKY-100□□392ML20S |
|             | 4,700       | 12.5×35               | 0.020                      | 0.065 | 2,880                                                       | EKY-100□□472MK35S |
|             | 5,600       | 12.5×40               | 0.017                      | 0.056 | 3,350                                                       | EKY-100□□562MK40S |
|             | 5,600       | 16×25                 | 0.021                      | 0.060 | 2,930                                                       | EKY-100□□562ML25S |
|             | 5,600       | 18×20                 | 0.026                      | 0.067 | 2,860                                                       | EKY-100□□562MM20S |
|             | 6,800       | 16×31.5               | 0.017                      | 0.050 | 3,450                                                       | EKY-100□□682MLN3S |
|             | 6,800       | 18×25                 | 0.019                      | 0.049 | 3,140                                                       | EKY-100□□682MM25S |
|             | 8,200       | 16×35.5               | 0.015                      | 0.044 | 3,610                                                       | EKY-100□□822MLP1S |
|             | 8,200       | 18×31.5               | 0.015                      | 0.040 | 4,170                                                       | EKY-100□□822MMN3S |
|             | 10,000      | 16×40                 | 0.013                      | 0.038 | 4,080                                                       | EKY-100□□103ML40S |
|             | 10,000      | 18×35.5               | 0.014                      | 0.038 | 4,220                                                       | EKY-100□□103MMP1S |
|             | 12,000      | 18×40                 | 0.012                      | 0.032 | 4,280                                                       | EKY-100□□123MM40S |
| 16          | 56          | 5×11                  | 0.58                       | 2.3   | 210                                                         | EKY-160□□560ME11D |
|             | 120         | 6.3×11                | 0.22                       | 0.87  | 340                                                         | EKY-160□□121MF11D |
|             | 330         | 8×11.5                | 0.13                       | 0.52  | 640                                                         | EKY-160□□331MHB5D |
|             | 470         | 8×15                  | 0.087                      | 0.35  | 840                                                         | EKY-160□□471MH15D |
|             | 470         | 10×12.5               | 0.080                      | 0.32  | 865                                                         | EKY-160□□471MJC5S |
|             | 680         | 8×20                  | 0.069                      | 0.27  | 1,050                                                       | EKY-160□□681MH20D |
|             | 680         | 10×16                 | 0.060                      | 0.24  | 1,210                                                       | EKY-160□□681MJ16S |
|             | 1,000       | 10×20                 | 0.046                      | 0.18  | 1,400                                                       | EKY-160□□102MJ20S |
|             | 1,000       | 12.5×15               | 0.049                      | 0.16  | 1,450                                                       | EKY-160□□102MK15S |
|             | 1,200       | 10×25                 | 0.042                      | 0.17  | 1,650                                                       | EKY-160□□122MJ25S |
|             | 1,500       | 10×30                 | 0.031                      | 0.12  | 1,910                                                       | EKY-160□□152MJ30S |
|             | 1,500       | 12.5×20               | 0.035                      | 0.12  | 1,900                                                       | EKY-160□□152MK20S |
|             | 1,800       | 12.5×25               | 0.027                      | 0.089 | 2,230                                                       | EKY-160□□182MK25S |
|             | 1,800       | 16×20                 | 0.027                      | 0.078 | 2,530                                                       | EKY-160□□182ML20S |
|             | 2,200       | 16×25                 | 0.021                      | 0.060 | 2,930                                                       | EKY-160□□222MK25S |
|             | 2,200       | 18×20                 | 0.026                      | 0.067 | 2,860                                                       | EKY-160□□222MM20S |
| 25          | 1,500       | 12.5×30               | 0.024                      | 0.078 | 2,650                                                       | EKY-250□□152MK30S |
|             | 1,800       | 16×20                 | 0.027                      | 0.078 | 2,530                                                       | EKY-250□□182ML20S |
|             | 2,200       | 12.5×35               | 0.020                      | 0.065 | 2,880                                                       | EKY-250□□222MK35S |
|             | 2,200       | 18×20                 | 0.026                      | 0.067 | 2,860                                                       | EKY-250□□222MM20S |
|             | 2,700       | 12.5×40               | 0.017                      | 0.056 | 3,350                                                       | EKY-250□□272MK40S |
|             | 2,700       | 16×25                 | 0.021                      | 0.060 | 2,930                                                       | EKY-250□□272ML25S |
|             | 3,300       | 16×31.5               | 0.017                      | 0.050 | 3,450                                                       | EKY-250□□332MLN3S |
|             | 3,300       | 18×25                 | 0.019                      | 0.049 | 3,140                                                       | EKY-250□□332MM25S |
|             | 3,900       | 16×35.5               | 0.015                      | 0.044 | 3,610                                                       | EKY-250□□392MLP1S |
|             | 3,900       | 18×31.5               | 0.015                      | 0.040 | 4,170                                                       | EKY-250□□392MMN3S |
|             | 4,700       | 16×40                 | 0.013                      | 0.038 | 4,080                                                       | EKY-250□□472ML40S |
|             | 4,700       | 18×35.5               | 0.014                      | 0.038 | 4,220                                                       | EKY-250□□472MMP1S |
|             | 5,600       | 18×40                 | 0.012                      | 0.032 | 4,280                                                       | EKY-250□□562MM40S |
|             | 33          | 5×11                  | 0.58                       | 2.3   | 210                                                         | EKY-350□□330ME11D |
|             | 56          | 6.3×11                | 0.22                       | 0.87  | 340                                                         | EKY-350□□560MF11D |
|             | 150         | 8×11.5                | 0.13                       | 0.52  | 640                                                         | EKY-350□□151MHB5D |
|             | 220         | 8×15                  | 0.087                      | 0.35  | 840                                                         | EKY-350□□221MK15D |
|             | 220         | 10×12.5               | 0.080                      | 0.32  | 865                                                         | EKY-350□□221MJC5S |
|             | 270         | 8×20                  | 0.069                      | 0.27  | 1,050                                                       | EKY-350□□271MH20D |
|             | 330         | 10×16                 | 0.060                      | 0.24  | 1,210                                                       | EKY-350□□331MJ16S |
|             | 470         | 10×20                 | 0.046                      | 0.18  | 1,400                                                       | EKY-350□□471MJ20S |
|             | 470         | 12.5×15               | 0.049                      | 0.16  | 1,450                                                       | EKY-350□□471MK15S |
|             | 560         | 10×25                 | 0.042                      | 0.17  | 1,650                                                       | EKY-350□□561MJ25S |
|             | 680         | 10×30                 | 0.031                      | 0.12  | 1,910                                                       | EKY-350□□681MJ30S |
|             | 680         | 12.5×20               | 0.035                      | 0.12  | 1,900                                                       | EKY-350□□681MK20S |
|             | 680         | 16×15                 | 0.042                      | 0.12  | 1,940                                                       | EKY-350□□681ML15S |
|             | 1,000       | 12.5×25               | 0.027                      | 0.089 | 2,230                                                       | EKY-350□□102MK25S |
|             | 1,000       | 18×15                 | 0.043                      | 0.11  | 2,210                                                       | EKY-350□□102MM15S |
|             | 1,200       | 12.5×30               | 0.024                      | 0.078 | 2,650                                                       | EKY-350□□122MK30S |
|             | 1,200       | 16×20                 | 0.027                      | 0.078 | 2,530                                                       | EKY-350□□122ML20S |
|             | 1,500       | 12.5×35               | 0.020                      | 0.065 | 2,880                                                       | EKY-350□□152MK35S |
|             | 1,800       | 12.5×40               | 0.017                      | 0.056 | 3,350                                                       | EKY-350□□182MK40S |
|             | 1,800       | 16×25                 | 0.021                      | 0.060 | 2,930                                                       | EKY-350□□182ML25S |
|             | 1,800       | 18×20                 | 0.026                      | 0.067 | 2,860                                                       | EKY-350□□182MM20S |
|             | 2,200       | 16×31.5               | 0.017                      | 0.050 | 3,450                                                       | EKY-350□□222MLN3S |

□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

Upgrade!

KY Series

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 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|-------------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                             |                    |
| 35          | 2,200       | 18×25                 | 0.019                      | 0.049 | 3,140                                                       | EKY-350E□□222MM25S |
|             | 2,700       | 16×35.5               | 0.015                      | 0.044 | 3,610                                                       | EKY-350E□□272MLP1S |
|             | 2,700       | 18×31.5               | 0.015                      | 0.040 | 4,170                                                       | EKY-350E□□272MMN3S |
|             | 3,300       | 16×40                 | 0.013                      | 0.038 | 4,080                                                       | EKY-350E□□332ML40S |
|             | 3,300       | 18×35.5               | 0.014                      | 0.038 | 4,220                                                       | EKY-350E□□332MMP1S |
|             | 3,900       | 18×40                 | 0.012                      | 0.032 | 4,280                                                       | EKY-350E□□392MM40S |
| 50          | 0.47        | 5×11                  | 5.5                        | 22.0  | 17                                                          | EKY-500E□□47ME11D  |
|             | 1.0         | 5×11                  | 4.0                        | 16.0  | 30                                                          | EKY-500E□□1R0ME11D |
|             | 2.2         | 5×11                  | 2.5                        | 10.0  | 43                                                          | EKY-500E□□2R2ME11D |
|             | 3.3         | 5×11                  | 2.2                        | 8.8   | 53                                                          | EKY-500E□□3R3ME11D |
|             | 4.7         | 5×11                  | 1.9                        | 7.6   | 88                                                          | EKY-500E□□4R7ME11D |
|             | 10          | 5×11                  | 1.5                        | 6.0   | 100                                                         | EKY-500E□□100ME11D |
|             | 22          | 5×11                  | 0.70                       | 2.8   | 180                                                         | EKY-500E□□220ME11D |
|             | 56          | 6.3×11                | 0.30                       | 1.2   | 295                                                         | EKY-500E□□560MF11D |
|             | 100         | 8×11.5                | 0.17                       | 0.68  | 555                                                         | EKY-500E□□101MHB5D |
|             | 120         | 8×15                  | 0.12                       | 0.48  | 730                                                         | EKY-500E□□121MH15D |
|             | 150         | 10×12.5               | 0.12                       | 0.48  | 760                                                         | EKY-500E□□151MJC5S |
|             | 180         | 8×20                  | 0.091                      | 0.36  | 910                                                         | EKY-500E□□181MH20D |
|             | 220         | 10×16                 | 0.084                      | 0.34  | 1,050                                                       | EKY-500E□□221MJ16S |
|             | 270         | 10×20                 | 0.060                      | 0.24  | 1,220                                                       | EKY-500E□□271MJ20S |
|             | 270         | 12.5×15               | 0.061                      | 0.20  | 1,260                                                       | EKY-500E□□271MK15S |
|             | 330         | 10×25                 | 0.055                      | 0.22  | 1,440                                                       | EKY-500E□□331MJ25S |
|             | 470         | 10×30                 | 0.043                      | 0.17  | 1,690                                                       | EKY-500E□□471MJ30S |
|             | 470         | 12.5×20               | 0.045                      | 0.15  | 1,660                                                       | EKY-500E□□471MK20S |
|             | 470         | 16×15                 | 0.055                      | 0.17  | 1,690                                                       | EKY-500E□□471ML15S |
|             | 560         | 12.5×25               | 0.034                      | 0.11  | 1,950                                                       | EKY-500E□□561MK25S |
|             | 560         | 18×15                 | 0.054                      | 0.15  | 1,930                                                       | EKY-500E□□561MM15S |
|             | 680         | 12.5×30               | 0.030                      | 0.10  | 2,310                                                       | EKY-500E□□681MK30S |
|             | 820         | 12.5×35               | 0.025                      | 0.083 | 2,510                                                       | EKY-500E□□821MK35S |
|             | 820         | 16×20                 | 0.034                      | 0.10  | 2,210                                                       | EKY-500E□□821ML20S |
|             | 1,000       | 12.5×40               | 0.021                      | 0.069 | 2,920                                                       | EKY-500E□□102MK40S |
|             | 1,000       | 16×25                 | 0.025                      | 0.075 | 2,555                                                       | EKY-500E□□102ML25S |
|             | 1,000       | 18×20                 | 0.036                      | 0.097 | 2,490                                                       | EKY-500E□□102MM20S |
|             | 1,200       | 16×31.5               | 0.022                      | 0.066 | 3,010                                                       | EKY-500E□□122MLN3S |
|             | 1,200       | 18×25                 | 0.026                      | 0.070 | 2,740                                                       | EKY-500E□□122MM25S |
|             | 1,500       | 16×35.5               | 0.019                      | 0.057 | 3,150                                                       | EKY-500E□□152MLP1S |
|             | 1,800       | 16×40                 | 0.016                      | 0.048 | 3,710                                                       | EKY-500E□□182ML40S |
|             | 1,800       | 18×31.5               | 0.021                      | 0.057 | 3,635                                                       | EKY-500E□□182MMN3S |
|             | 2,200       | 18×35.5               | 0.017                      | 0.046 | 3,680                                                       | EKY-500E□□222MMP1S |
|             | 2,700       | 18×40                 | 0.014                      | 0.038 | 3,800                                                       | EKY-500E□□272MM40S |
| 63          | 15          | 5×11                  | 0.88                       | 3.5   | 165                                                         | EKY-630E□□150ME11D |
|             | 33          | 6.3×11                | 0.35                       | 1.4   | 265                                                         | EKY-630E□□330MF11D |
|             | 56          | 8×11.5                | 0.22                       | 0.88  | 500                                                         | EKY-630E□□560MHB5D |
|             | 82          | 8×15                  | 0.16                       | 0.64  | 665                                                         | EKY-630E□□820MH15D |
|             | 82          | 10×12.5               | 0.11                       | 0.44  | 690                                                         | EKY-630E□□820MJC5S |
|             | 120         | 8×20                  | 0.12                       | 0.48  | 820                                                         | EKY-630E□□121MH20D |
|             | 120         | 10×16                 | 0.076                      | 0.31  | 950                                                         | EKY-630E□□121MJ16S |
|             | 180         | 10×20                 | 0.056                      | 0.23  | 1,150                                                       | EKY-630E□□181MJ20S |
|             | 180         | 12.5×16               | 0.072                      | 0.29  | 1,150                                                       | EKY-630E□□181MK16S |
|             | 220         | 10×25                 | 0.046                      | 0.19  | 1,350                                                       | EKY-630E□□221MJ25S |
|             | 270         | 12.5×20               | 0.041                      | 0.13  | 1,500                                                       | EKY-630E□□271MK20S |
|             | 390         | 12.5×25               | 0.031                      | 0.093 | 1,900                                                       | EKY-630E□□391MK25S |
|             | 470         | 12.5×30               | 0.028                      | 0.084 | 2,300                                                       | EKY-630E□□471MK30S |
|             | 470         | 16×20                 | 0.032                      | 0.096 | 2,000                                                       | EKY-630E□□471ML20S |
|             | 560         | 12.5×35               | 0.024                      | 0.072 | 2,500                                                       | EKY-630E□□561MK35S |
| 63          | 680         | 12.5×40               | 0.021                      | 0.063 | 2,800                                                       | EKY-630E□□681MK40S |
|             | 680         | 16×25                 | 0.025                      | 0.075 | 2,600                                                       | EKY-630E□□681ML25S |
|             | 680         | 18×20                 | 0.030                      | 0.090 | 2,500                                                       | EKY-630E□□681MM20S |
|             | 820         | 16×31.5               | 0.021                      | 0.063 | 2,850                                                       | EKY-630E□□821MLN3S |
|             | 820         | 18×25                 | 0.024                      | 0.072 | 2,800                                                       | EKY-630E□□821MM25S |
|             | 1,000       | 16×35.5               | 0.019                      | 0.057 | 2,900                                                       | EKY-630E□□102MLP1S |
|             | 1,200       | 16×40                 | 0.018                      | 0.054 | 3,400                                                       | EKY-630E□□122ML40S |
|             | 1,200       | 18×31.5               | 0.020                      | 0.060 | 3,300                                                       | EKY-630E□□122MMN3S |
|             | 1,500       | 18×35.5               | 0.018                      | 0.054 | 3,400                                                       | EKY-630E□□152MMP1S |
|             | 1,800       | 18×40                 | 0.017                      | 0.051 | 3,500                                                       | EKY-630E□□182MM40S |
|             | 68          | 10×12.5               | 0.17                       | 0.66  | 480                                                         | EKY-800E□□680MJ30S |
|             | 100         | 10×16                 | 0.11                       | 0.47  | 600                                                         | EKY-800E□□101MJ16S |
|             | 120         | 10×20                 | 0.084                      | 0.34  | 800                                                         | EKY-800E□□121MJ20S |
|             | 150         | 10×25                 | 0.069                      | 0.28  | 900                                                         | EKY-800E□□151MJ25S |
|             | 150         | 12.5×16               | 0.11                       | 0.34  | 750                                                         | EKY-800E□□151MK16S |
| 80          | 220         | 12.5×20               | 0.062                      | 0.18  | 1,100                                                       | EKY-800E□□221MK20S |
|             | 330         | 12.5×25               | 0.047                      | 0.14  | 1,250                                                       | EKY-800E□□331MK25S |
|             | 330         | 16×20                 | 0.048                      | 0.15  | 1,350                                                       | EKY-800E□□331ML20S |
|             | 390         | 12.5×30               | 0.042                      | 0.13  | 1,500                                                       | EKY-800E□□391MK30S |
|             | 470         | 12.5×35               | 0.036                      | 0.11  | 1,650                                                       | EKY-800E□□471MK35S |
|             | 470         | 16×25                 | 0.038                      | 0.12  | 1,700                                                       | EKY-800E□□471ML25S |
|             | 470         | 18×20                 | 0.045                      | 0.14  | 1,500                                                       | EKY-800E□□471MM20S |
|             | 560         | 12.5×40               | 0.032                      | 0.095 | 1,800                                                       | EKY-800E□□561MK40S |
|             | 680         | 16×31.5               | 0.032                      | 0.095 | 1,850                                                       | EKY-800E□□681MLN3S |
|             | 680         | 18×25                 | 0.036                      | 0.11  | 1,750                                                       | EKY-800E□□681MM25S |
|             | 820         | 16×35.5               | 0.029                      | 0.086 | 2,000                                                       | EKY-800E□□821MLP1S |
|             | 820         | 18×31.5               | 0.030                      | 0.090 | 1,900                                                       | EKY-800E□□821MMN3S |
|             | 1,000       | 16×40                 | 0.027                      | 0.081 | 2,200                                                       | EKY-800E□□102ML40S |
|             | 1,000       | 18×35.5               | 0.027                      | 0.081 | 2,200                                                       | EKY-800E□□102MMP1S |
|             | 1,200       | 18×40                 | 0.026                      | 0.077 | 2,700                                                       | EKY-800E□□122MM40S |
| 100         | 6.8         | 5×11                  | 1.4                        | 5.6   | 125                                                         | EKY-101E□□6R8ME11D |
|             | 15          | 6.3×11                | 0.57                       | 2.3   | 205                                                         | EKY-101E□□150MF11D |
|             | 27          | 8×11.5                | 0.36                       | 1.4   | 355                                                         | EKY-101E□□270MHB5D |
|             | 39          | 8×15                  | 0.25                       | 1.0   | 450                                                         | EKY-101E□□390MH15D |
|             | 47          | 10×12.5               | 0.17                       | 0.66  | 480                                                         | EKY-101E□□470MJC5S |
|             | 56          | 8×20                  | 0.19                       | 0.76  | 565                                                         | EKY-101E□□560MH20D |
|             | 68          | 10×16                 | 0.11                       | 0.47  | 600                                                         | EKY-101E□□680MJ16S |
|             | 82          | 10×20                 | 0.084                      | 0.34  | 800                                                         | EKY-101E□□820MJ20S |
|             | 100         | 12.5×16               | 0.11                       | 0.34  | 750                                                         | EKY-101E□□101MK16S |
|             | 120         | 10×25                 | 0.069                      | 0.28  | 900                                                         | EKY-101E□□121MJ25S |
|             | 150         | 12.5×20               | 0.062                      | 0.18  | 1,100                                                       | EKY-101E□□151MK20S |
|             | 220         | 12.5×25               | 0.047                      | 0.14  | 1,250                                                       | EKY-101E□□221MK25S |
|             | 220         | 16×20                 | 0.048                      | 0.15  | 1,350                                                       | EKY-101E□□221ML20S |
|             | 270         | 12.5×30               | 0.042                      | 0.13  | 1,500                                                       | EKY-101E□□271MK30S |
|             | 330         | 12.5×35               | 0.036                      | 0.11  | 1,650                                                       | EKY-101E□□331MK35S |
| 100         | 330         | 16×25                 | 0.038                      | 0.12  | 1,700                                                       | EKY-101E□□331ML25S |
|             | 330         | 18×20                 | 0.045                      | 0.14  | 1,500                                                       | EKY-101E□□331MM20S |
|             | 390         | 12.5×40               | 0.032                      | 0.095 | 1,800                                                       | EKY-101E□□391MK40S |
|             | 470         | 16×31.5               | 0.032                      | 0.095 | 1,850                                                       | EKY-101E□□471MLN3S |
|             | 470         | 18×25                 | 0.036                      | 0.11  | 1,750                                                       | EKY-101E□□471MM25S |
|             | 560         | 16×35.5               | 0.029                      | 0.086 | 2,000                                                       | EKY-101E□□561MLP1S |
|             | 560         | 18×31.5               | 0.030                      | 0.090 | 1,900                                                       | EKY-101E□□561MMN3S |
|             | 680         | 16×40                 | 0.027                      | 0.081 | 2,200                                                       | EKY-101E□□681ML40S |
|             | 680         | 18×35.5               | 0.027                      | 0.081 | 2,200                                                       | EKY-101E□□681MMP1S |
|             | 820         | 18×40                 | 0.026                      | 0.077 | 2,700                                                       | EKY-101E□□821MM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|
| 0.47 to 180      |                | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 560       |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800     |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900   |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to         |                | 0.85 | 0.95 | 0.98 | 1.00 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.  
 When long life performance is required in actual use, the rms ripple current has to be reduced.

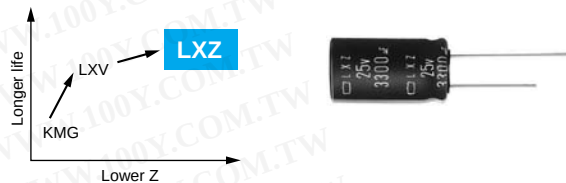


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, Downsized, 105°C

## LXZ Series

- Newly innovative electrolyte and internal architecture are employed
- Very low impedance at high frequency range
- Endurance with ripple current: 2,000 to 8,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

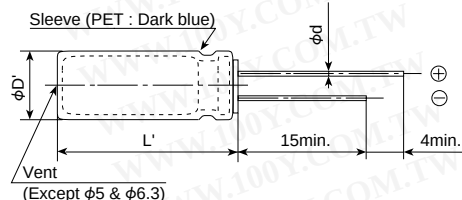
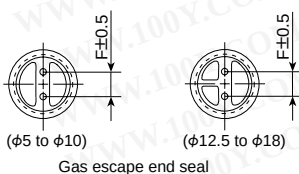


## ◆ SPECIFICATIONS

| Items                     | Characteristics                                                                                                                                                                                            |                                                                                                         |      |      |      |      |      |      |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|
| Category                  |                                                                                                                                                                                                            |                                                                                                         |      |      |      |      |      |      |
| Temperature Range         | -55 to +105°C                                                                                                                                                                                              |                                                                                                         |      |      |      |      |      |      |
| Rated Voltage Range       | 6.3 to 63V <sub>dc</sub>                                                                                                                                                                                   |                                                                                                         |      |      |      |      |      |      |
| Capacitance Tolerance     | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                  |                                                                                                         |      |      |      |      |      |      |
| Leakage Current           | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                              |                                                                                                         |      |      |      |      |      |      |
| Dissipation Factor (tanδ) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 6.3V                                                                                                    | 10V  | 16V  | 25V  | 35V  | 50V  | 63V  |
|                           | tanδ (Max.)                                                                                                                                                                                                | 0.22                                                                                                    | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 |
|                           | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                          |                                                                                                         |      |      |      |      |      |      |
| Endurance                 | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |                                                                                                         |      |      |      |      |      |      |
|                           | Time                                                                                                                                                                                                       | φ5 & 6.3 : 2,000hours   φ8 : 3,000hours   φ10 : 5,000hours   φ12.5 : 7,000hours   φ16 & 18 : 8,000hours |      |      |      |      |      |      |
|                           | Capacitance change                                                                                                                                                                                         | ≤±20% of the initial value                                                                              |      |      |      |      |      |      |
|                           | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                                                    |      |      |      |      |      |      |
|                           | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                                                            |      |      |      |      |      |      |
| Shelf Life                | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                                             |                                                                                                         |      |      |      |      |      |      |
|                           | Capacitance change                                                                                                                                                                                         | ≤±20% of the initial value                                                                              |      |      |      |      |      |      |
|                           | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                                                    |      |      |      |      |      |      |
|                           | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                                                            |      |      |      |      |      |      |

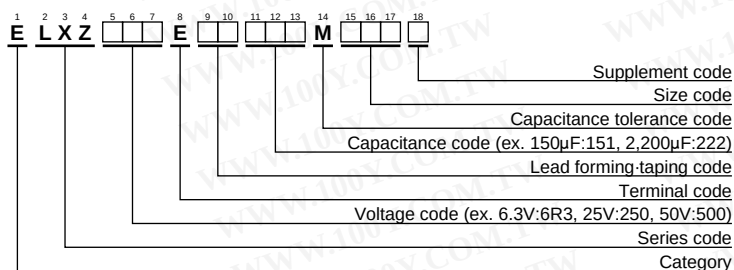
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     |
| L'  | L+1.5max.  |     |     |     |      |     |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, Downsized, 105°C

LXZ Series

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           | WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|----------------------------------------------------------|--------------------|-------------|-------------|-----------------------|----------------------------|-------|----------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                          |                    |             |             |                       | 20°C                       | -10°C |                                                          |                    |
| 6.3         | 150         | 5×11.5                | 0.50                       | 1.0   | 175                                                      | ELXZ6R3E□□151MEB5D | 16          | 3,300       | 12.5×35               | 0.022                      | 0.044 | 2,510                                                    | ELXZ160E□□332MK35S |
|             | 330         | 6.3×11.5              | 0.25                       | 0.50  | 290                                                      | ELXZ6R3E□□331MFB5D |             | 3,900       | 12.5×40               | 0.017                      | 0.034 | 2,870                                                    | ELXZ160E□□392MK40S |
|             | 470         | 6.3×15                | 0.18                       | 0.36  | 400                                                      | ELXZ6R3E□□471MF15D |             | 3,900       | 16×25                 | 0.022                      | 0.044 | 2,560                                                    | ELXZ160E□□392ML25S |
|             | 680         | 8×12                  | 0.12                       | 0.24  | 555                                                      | ELXZ6R3E□□681MH12D |             | 3,900       | 18×20                 | 0.028                      | 0.056 | 2,490                                                    | ELXZ160E□□392MM20S |
|             | 820         | 10×12.5               | 0.090                      | 0.18  | 760                                                      | ELXZ6R3E□□821MJC5S |             | 4,700       | 16×30                 | 0.019                      | 0.038 | 3,010                                                    | ELXZ160E□□472ML30S |
|             | 1,000       | 8×15                  | 0.090                      | 0.18  | 730                                                      | ELXZ6R3E□□102MH15D |             | 4,700       | 18×25                 | 0.020                      | 0.040 | 2,740                                                    | ELXZ160E□□472MM25S |
|             | 1,200       | 8×20                  | 0.080                      | 0.16  | 810                                                      | ELXZ6R3E□□122MH20D |             | 5,600       | 16×35                 | 0.017                      | 0.034 | 3,150                                                    | ELXZ160E□□562ML35S |
|             | 1,200       | 10×16                 | 0.068                      | 0.136 | 1,050                                                    | ELXZ6R3E□□122MJ16S |             | 5,600       | 18×30                 | 0.018                      | 0.036 | 3,330                                                    | ELXZ160E□□562MM30S |
|             | 1,500       | 10×20                 | 0.052                      | 0.104 | 1,220                                                    | ELXZ6R3E□□152MJ20S |             | 6,800       | 16×40                 | 0.015                      | 0.030 | 3,710                                                    | ELXZ160E□□682ML40S |
|             | 2,200       | 10×25                 | 0.045                      | 0.090 | 1,440                                                    | ELXZ6R3E□□222MJ25S |             | 8,200       | 18×35                 | 0.016                      | 0.032 | 3,680                                                    | ELXZ160E□□822MM35S |
|             | 2,700       | 10×30                 | 0.037                      | 0.074 | 1,690                                                    | ELXZ6R3E□□272MJ30S |             | 10,000      | 18×40                 | 0.015                      | 0.030 | 3,800                                                    | ELXZ160E□□103MM40S |
|             | 3,300       | 12.5×20               | 0.038                      | 0.076 | 1,660                                                    | ELXZ6R3E□□332MK20S | 25          | 47          | 5×11.5                | 0.50                       | 1.0   | 175                                                      | ELXZ250E□□470MEB5D |
|             | 3,900       | 12.5×25               | 0.030                      | 0.060 | 1,950                                                    | ELXZ6R3E□□392MK25S |             | 100         | 6.3×11.5              | 0.25                       | 0.50  | 290                                                      | ELXZ250E□□101MFB5D |
|             | 4,700       | 12.5×30               | 0.025                      | 0.050 | 2,310                                                    | ELXZ6R3E□□472MK30S |             | 150         | 6.3×15                | 0.18                       | 0.36  | 400                                                      | ELXZ250E□□151MF15D |
|             | 5,600       | 12.5×35               | 0.022                      | 0.044 | 2,510                                                    | ELXZ6R3E□□562MK35S |             | 220         | 8×12                  | 0.12                       | 0.24  | 555                                                      | ELXZ250E□□221MH12D |
|             | 5,600       | 16×20                 | 0.029                      | 0.058 | 2,210                                                    | ELXZ6R3E□□562ML20S |             | 330         | 8×15                  | 0.090                      | 0.18  | 730                                                      | ELXZ250E□□331MH15D |
|             | 6,800       | 12.5×40               | 0.017                      | 0.034 | 2,870                                                    | ELXZ6R3E□□682MK40S |             | 330         | 10×12.5               | 0.090                      | 0.18  | 760                                                      | ELXZ250E□□331MJC5S |
|             | 6,800       | 16×25                 | 0.022                      | 0.044 | 2,560                                                    | ELXZ6R3E□□682ML25S |             | 390         | 8×20                  | 0.080                      | 0.16  | 810                                                      | ELXZ250E□□391MH20D |
|             | 6,800       | 18×20                 | 0.028                      | 0.056 | 2,490                                                    | ELXZ6R3E□□682MM20S |             | 470         | 10×16                 | 0.068                      | 0.136 | 1,050                                                    | ELXZ250E□□471MJ16S |
|             | 8,200       | 16×30                 | 0.019                      | 0.038 | 3,010                                                    | ELXZ6R3E□□822ML30S |             | 680         | 10×20                 | 0.052                      | 0.104 | 1,220                                                    | ELXZ250E□□681MJ20S |
|             | 10,000      | 16×35                 | 0.017                      | 0.034 | 3,150                                                    | ELXZ6R3E□□103ML35S |             | 820         | 10×25                 | 0.045                      | 0.090 | 1,440                                                    | ELXZ250E□□821MJ25S |
|             | 10,000      | 18×25                 | 0.020                      | 0.040 | 2,740                                                    | ELXZ6R3E□□103MM25S |             | 1,000       | 10×30                 | 0.037                      | 0.074 | 1,690                                                    | ELXZ250E□□102MJ30S |
|             | 12,000      | 16×40                 | 0.015                      | 0.030 | 3,710                                                    | ELXZ6R3E□□123ML40S |             | 1,000       | 12.5×20               | 0.038                      | 0.076 | 1,660                                                    | ELXZ250E□□102MK20S |
|             | 12,000      | 18×30                 | 0.018                      | 0.036 | 3,330                                                    | ELXZ6R3E□□123MM30S |             | 1,500       | 12.5×25               | 0.030                      | 0.060 | 1,950                                                    | ELXZ250E□□152MK25S |
|             | 15,000      | 18×35                 | 0.016                      | 0.032 | 3,680                                                    | ELXZ6R3E□□153MM35S |             | 1,800       | 12.5×30               | 0.025                      | 0.050 | 2,310                                                    | ELXZ250E□□182MK30S |
|             | 18,000      | 18×40                 | 0.015                      | 0.030 | 3,800                                                    | ELXZ6R3E□□183MM40S |             | 1,800       | 16×20                 | 0.029                      | 0.058 | 2,210                                                    | ELXZ250E□□182ML20S |
| 10          | 100         | 5×11.5                | 0.50                       | 1.0   | 175                                                      | ELXZ100E□□101MEB5D |             | 2,200       | 12.5×35               | 0.022                      | 0.044 | 2,510                                                    | ELXZ250E□□222MK35S |
|             | 220         | 6.3×11.5              | 0.25                       | 0.50  | 290                                                      | ELXZ100E□□221MFB5D |             | 2,200       | 18×20                 | 0.028                      | 0.056 | 2,490                                                    | ELXZ250E□□222MM20S |
|             | 330         | 6.3×15                | 0.18                       | 0.36  | 400                                                      | ELXZ100E□□331MF15D |             | 2,700       | 12.5×40               | 0.017                      | 0.034 | 2,870                                                    | ELXZ250E□□272MK40S |
|             | 470         | 8×12                  | 0.12                       | 0.24  | 555                                                      | ELXZ100E□□471MH12D |             | 2,700       | 16×25                 | 0.022                      | 0.044 | 2,560                                                    | ELXZ250E□□272ML25S |
|             | 680         | 8×15                  | 0.090                      | 0.18  | 730                                                      | ELXZ100E□□681MH15D |             | 3,300       | 16×30                 | 0.019                      | 0.038 | 3,010                                                    | ELXZ250E□□332ML30S |
|             | 680         | 10×12.5               | 0.090                      | 0.18  | 760                                                      | ELXZ100E□□681MJC5S |             | 3,300       | 18×25                 | 0.020                      | 0.040 | 2,740                                                    | ELXZ250E□□332MM25S |
|             | 1,000       | 8×20                  | 0.080                      | 0.16  | 810                                                      | ELXZ100E□□102MH20D |             | 3,900       | 16×35                 | 0.017                      | 0.034 | 3,150                                                    | ELXZ250E□□392ML35S |
|             | 1,000       | 10×16                 | 0.068                      | 0.136 | 1,050                                                    | ELXZ100E□□102MJ16S |             | 3,900       | 18×30                 | 0.018                      | 0.036 | 3,330                                                    | ELXZ250E□□392MM30S |
|             | 1,200       | 10×20                 | 0.052                      | 0.104 | 1,220                                                    | ELXZ100E□□122MJ20S |             | 4,700       | 16×40                 | 0.015                      | 0.030 | 3,710                                                    | ELXZ250E□□472ML40S |
|             | 1,500       | 10×25                 | 0.045                      | 0.090 | 1,440                                                    | ELXZ100E□□152MJ25S |             | 4,700       | 18×35                 | 0.016                      | 0.032 | 3,680                                                    | ELXZ250E□□472MM35S |
|             | 1,800       | 10×30                 | 0.037                      | 0.074 | 1,690                                                    | ELXZ100E□□182MJ30S |             | 5,600       | 18×40                 | 0.015                      | 0.030 | 3,800                                                    | ELXZ250E□□562MM40S |
|             | 2,200       | 12.5×20               | 0.038                      | 0.076 | 1,660                                                    | ELXZ100E□□222MK20S | 35          | 33          | 5×11.5                | 0.50                       | 1.0   | 175                                                      | ELXZ350E□□330MEB5D |
|             | 3,300       | 12.5×25               | 0.030                      | 0.060 | 1,950                                                    | ELXZ100E□□332MK25S |             | 56          | 6.3×11.5              | 0.25                       | 0.50  | 290                                                      | ELXZ350E□□560MFB5D |
|             | 3,900       | 12.5×30               | 0.025                      | 0.050 | 2,310                                                    | ELXZ100E□□392MK30S |             | 100         | 6.3×15                | 0.18                       | 0.36  | 400                                                      | ELXZ350E□□101MF15D |
|             | 3,900       | 16×20                 | 0.029                      | 0.058 | 2,210                                                    | ELXZ100E□□392ML20S |             | 150         | 8×12                  | 0.12                       | 0.24  | 555                                                      | ELXZ350E□□151MH12D |
|             | 4,700       | 12.5×35               | 0.022                      | 0.044 | 2,510                                                    | ELXZ100E□□472MK35S |             | 220         | 8×15                  | 0.090                      | 0.18  | 730                                                      | ELXZ350E□□221MH15D |
|             | 5,600       | 12.5×40               | 0.017                      | 0.034 | 2,870                                                    | ELXZ100E□□562MK40S |             | 220         | 10×12.5               | 0.090                      | 0.18  | 760                                                      | ELXZ350E□□221MJC5S |
|             | 5,600       | 16×25                 | 0.022                      | 0.044 | 2,560                                                    | ELXZ100E□□562ML25S |             | 270         | 8×20                  | 0.080                      | 0.16  | 810                                                      | ELXZ350E□□271MH20D |
|             | 5,600       | 18×20                 | 0.028                      | 0.056 | 2,490                                                    | ELXZ100E□□562MM20S |             | 330         | 10×16                 | 0.068                      | 0.136 | 1,050                                                    | ELXZ350E□□331MJ16S |
|             | 6,800       | 16×30                 | 0.019                      | 0.038 | 3,010                                                    | ELXZ100E□□682ML30S |             | 470         | 10×20                 | 0.052                      | 0.104 | 1,220                                                    | ELXZ350E□□471MJ20S |
|             | 6,800       | 18×25                 | 0.020                      | 0.040 | 2,740                                                    | ELXZ100E□□682MM25S |             | 560         | 10×25                 | 0.045                      | 0.090 | 1,440                                                    | ELXZ350E□□561MJ25S |
|             | 8,200       | 16×35                 | 0.017                      | 0.034 | 3,150                                                    | ELXZ100E□□822ML35S |             | 680         | 10×30                 | 0.037                      | 0.074 | 1,690                                                    | ELXZ350E□□681MJ30S |
|             | 8,200       | 18×30                 | 0.018                      | 0.036 | 3,330                                                    | ELXZ100E□□822MM30S |             | 680         | 12.5×20               | 0.038                      | 0.076 | 1,660                                                    | ELXZ350E□□681MK20S |
|             | 10,000      | 16×40                 | 0.015                      | 0.030 | 3,710                                                    | ELXZ100E□□103ML40S |             | 1,000       | 12.5×25               | 0.030                      | 0.060 | 1,950                                                    | ELXZ350E□□102MK25S |
|             | 10,000      | 18×35                 | 0.016                      | 0.032 | 3,680                                                    | ELXZ100E□□103MM35S |             | 1,200       | 12.5×30               | 0.025                      | 0.050 | 2,310                                                    | ELXZ350E□□122MK30S |
|             | 12,000      | 18×40                 | 0.015                      | 0.030 | 3,800                                                    | ELXZ100E□□123MM40S |             | 1,200       | 16×20                 | 0.029                      | 0.058 | 2,210                                                    | ELXZ350E□□122ML20S |
| 16          | 47          | 5×11.5                | 0.50                       | 1.0   | 175                                                      | ELXZ160E□□470MEB5D |             | 1,500       | 12.5×35               | 0.022                      | 0.044 | 2,510                                                    | ELXZ350E□□152MK35S |
|             | 100         | 6.3×11.5              | 0.25                       | 0.50  | 290                                                      | ELXZ160E□□101MFB5D |             | 1,800       | 12.5×40               | 0.017                      | 0.034 | 2,870                                                    | ELXZ350E□□182MK40S |
|             | 220         | 6.3×15                | 0.18                       | 0.36  | 400                                                      | ELXZ160E□□221MF15D |             | 1,800       | 16×25                 | 0.022                      | 0.044 | 2,560                                                    | ELXZ350E□□182ML25S |
|             | 330         | 8×12                  | 0.12                       | 0.24  | 555                                                      | ELXZ160E□□331MH12D |             | 1,800       | 18×20                 | 0.028                      | 0.056 | 2,490                                                    | ELXZ350E□□182MM20S |
|             | 470         | 8×15                  | 0.090                      | 0.18  | 730                                                      | ELXZ160E□□471MH15D |             | 2,200       | 16×30                 | 0.019                      | 0.038 | 3,010                                                    | ELXZ350E□□222ML30S |
|             | 470         | 10×12.5               | 0.090                      | 0.18  | 760                                                      | ELXZ160E□□471MJC5S |             | 2,200       | 18×25                 | 0.020                      | 0.040 | 2,740                                                    | ELXZ350E□□222MM25S |
|             | 560         | 8×20                  | 0.080                      | 0.16  | 810                                                      | ELXZ160E□□561MH20D |             | 2,700       | 16×35                 | 0.017                      | 0.034 | 3,150                                                    | ELXZ350E□□272ML35S |
|             | 680         | 10×16                 | 0.068                      | 0.136 | 1,050                                                    | ELXZ160E□□681MJ16S |             | 2,700       | 18×30                 | 0.018                      | 0.036 | 3,330                                                    | ELXZ350E□□272MM30S |
|             | 1,000       | 10×20                 | 0.052                      | 0.104 | 1,220                                                    | ELXZ160E□□102MJ20S |             | 3,300       | 16×40                 | 0.015                      | 0.030 | 3,710                                                    | ELXZ350E□□332ML40S |
|             | 1,200       | 10×25                 | 0.045                      | 0.090 | 1,440                                                    | ELXZ160E□□122MJ25S |             | 3,300       | 18×35                 | 0.016                      | 0.032 | 3,680                                                    | ELXZ350E□□332MM35S |
|             | 1,500       | 10×30                 | 0.037                      | 0.074 | 1,690                                                    | ELXZ160E□□152MJ30S |             | 3,900       | 18×40                 | 0.015                      | 0.030 | 3,800                                                    | ELXZ350E□□392MM40S |
|             | 1,500       | 12.5×20               | 0.038                      | 0.076 | 1,660                                                    | ELXZ160E□□152MK20S | 50          | 22          | 5×11.5                | 0.90                       | 1.8   | 155                                                      | ELXZ500E□□220MEB5D |
|             | 2,200       | 12.5×25               | 0.030                      | 0.060 | 1,950                                                    | ELXZ160E□□222MK25S |             | 47          | 6.3×11.5              | 0.45                       | 0.90  | 260                                                      | ELXZ500E□□470MFB5D |
|             | 2,700       | 12.5×30               | 0.025                      | 0.050 | 2,310                                                    | ELXZ160E□□272MK30S |             | 68          | 6.3×15                | 0.31                       | 0.62  | 360                                                      | ELXZ500E□□680MF15D |
|             | 2,700       | 16×20                 | 0.029                      | 0.058 | 2,210                                                    | ELXZ160E□□272ML20S |             | 100         | 8×12                  | 0.22                       | 0.44  | 485                                                      | ELXZ500E□□101MH12D |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, Downsized, 105°C

LXZ Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA <sub>rms</sub> /105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|---------------------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                                     |                    |
| 50          | 120         | 8×15                  | 0.16                       | 0.32  | 635                                                                 | ELXZ500E□□121MH15D |
|             | 120         | 10×12.5               | 0.16                       | 0.32  | 620                                                                 | ELXZ500E□□121MJC5S |
|             | 180         | 8×20                  | 0.12                       | 0.24  | 730                                                                 | ELXZ500E□□181MH20D |
|             | 180         | 10×16                 | 0.13                       | 0.26  | 850                                                                 | ELXZ500E□□181MJ16S |
|             | 220         | 10×20                 | 0.088                      | 0.18  | 1,050                                                               | ELXZ500E□□221MJ20S |
|             | 330         | 10×25                 | 0.073                      | 0.15  | 1,250                                                               | ELXZ500E□□331MJ25S |
|             | 390         | 10×30                 | 0.054                      | 0.11  | 1,500                                                               | ELXZ500E□□391MJ30S |
|             | 390         | 12.5×20               | 0.059                      | 0.12  | 1,480                                                               | ELXZ500E□□391MK20S |
|             | 560         | 12.5×25               | 0.044                      | 0.088 | 1,840                                                               | ELXZ500E□□561MK25S |
|             | 680         | 12.5×30               | 0.039                      | 0.078 | 2,220                                                               | ELXZ500E□□681MK30S |
|             | 680         | 16×20                 | 0.048                      | 0.096 | 1,840                                                               | ELXZ500E□□681ML20S |
|             | 820         | 12.5×35               | 0.033                      | 0.066 | 2,290                                                               | ELXZ500E□□821MK35S |
|             | 820         | 18×20                 | 0.042                      | 0.084 | 1,980                                                               | ELXZ500E□□821MM20S |
|             | 1,000       | 12.5×40               | 0.029                      | 0.058 | 2,500                                                               | ELXZ500E□□102MK40S |
|             | 1,000       | 16×25                 | 0.034                      | 0.068 | 2,240                                                               | ELXZ500E□□102ML25S |
|             | 1,200       | 16×30                 | 0.028                      | 0.056 | 2,700                                                               | ELXZ500E□□122ML30S |
|             | 1,200       | 18×25                 | 0.029                      | 0.058 | 2,610                                                               | ELXZ500E□□122MM25S |
|             | 1,500       | 16×35                 | 0.025                      | 0.050 | 2,800                                                               | ELXZ500E□□152ML35S |
|             | 1,800       | 16×40                 | 0.021                      | 0.042 | 3,200                                                               | ELXZ500E□□182ML40S |
|             | 1,800       | 18×30                 | 0.025                      | 0.050 | 3,000                                                               | ELXZ500E□□182MM30S |
|             | 2,200       | 18×35                 | 0.023                      | 0.046 | 3,100                                                               | ELXZ500E□□222MM35S |
|             | 2,700       | 18×40                 | 0.020                      | 0.040 | 3,400                                                               | ELXZ500E□□272MM40S |
| 63          | 12          | 5×11.5                | 1.9                        | 4.0   | 145                                                                 | ELXZ630E□□120MEB5D |
|             | 22          | 6.3×11.5              | 1.0                        | 2.0   | 240                                                                 | ELXZ630E□□220MFB5D |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) |      |      |      |
|------------------|----------------|------|------|------|
|                  | 120            | 1k   | 10k  | 100k |
| 12 to 180        | 0.40           | 0.75 | 0.90 | 1.00 |
| 220 to 560       | 0.50           | 0.85 | 0.94 | 1.00 |
| 680 to 1,800     | 0.60           | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900   | 0.75           | 0.90 | 0.95 | 1.00 |
| 4,700 to 18,000  | 0.85           | 0.95 | 0.98 | 1.00 |

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[Http://www.100y.com.tw](http://www.100y.com.tw)

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

High reliability, Low impedance, 105°C

## LXY Series

- Newly innovative electrolyte and internal architecture are employed
- Endurance with ripple current : 2,000 to 8,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

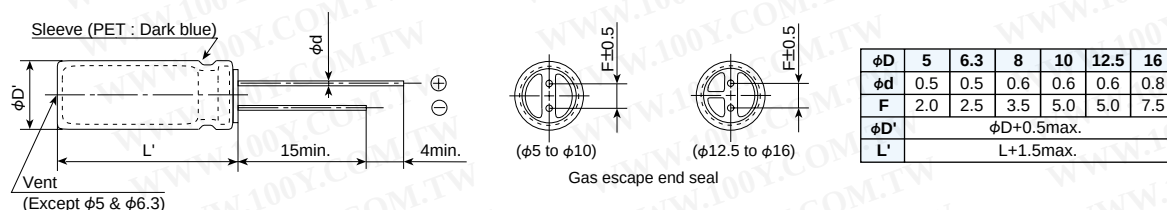


## ◆ SPECIFICATIONS

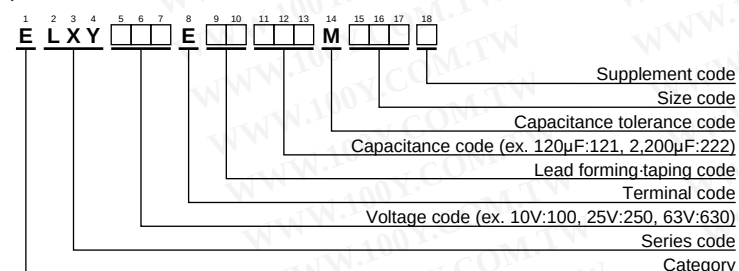
| Items                                                  | Characteristics                                                                                                                                                                                            |                                                                                                 |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Category                                               | -55 to +105°C                                                                                                                                                                                              |                                                                                                 |
| Temperature Range                                      |                                                                                                                                                                                                            |                                                                                                 |
| Rated Voltage Range                                    | 10 to 63V <sub>dc</sub>                                                                                                                                                                                    |                                                                                                 |
| Capacitance Tolerance                                  | ±20% (M)                                                                                                                                                                                                   |                                                                                                 |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                                        |                                                                                                 |
|                                                        | (at 20°C after 2 minutes)                                                                                                                                                                                  |                                                                                                 |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 10V 16V 25V 35V 50V 63V                                                                         |
|                                                        | tanδ (Max.)                                                                                                                                                                                                | 0.19 0.16 0.14 0.12 0.10 0.10                                                                   |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.                                                                                                           |                                                                                                 |
|                                                        | (at 20°C, 120Hz)                                                                                                                                                                                           |                                                                                                 |
| Low Temperature Characteristics (Max. Impedance Ratio) | Z(-55°C)/Z(+20°C)                                                                                                                                                                                          | 10V <sub>dc</sub> to 50V <sub>dc</sub> : 3max.<br>63V <sub>dc</sub> : 6max.                     |
|                                                        | (at 120Hz)                                                                                                                                                                                                 |                                                                                                 |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |                                                                                                 |
|                                                        | Time                                                                                                                                                                                                       | φ5 & 6.3 : 2,000hours φ8 : 3,000hours φ10 : 5,000hours φ12.5 : 7,000hours φ16 & 18 : 8,000hours |
|                                                        | Capacitance change                                                                                                                                                                                         | ≤±20% of the initial value                                                                      |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                                            |
|                                                        | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                                                    |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                                             |                                                                                                 |
|                                                        | Capacitance change                                                                                                                                                                                         | ≤±20% of the initial value                                                                      |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                                            |
|                                                        | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                                                    |

## ◆ DIMENSIONS [mm]

- Terminal Code : E



## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆ RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|
| 10 to 180        |                | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 560       |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800     |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900   |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to 8,200   |                | 0.85 | 0.95 | 0.98 | 1.00 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.  
 When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

High reliability, Low impedance, 105°C

LXY Series

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## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.            |
|-------------|-------------|-----------------------|----------------------------|-------|-------------------------------------------------------------|---------------------|
|             |             |                       | 20°C                       | -10°C |                                                             |                     |
| 10          | 82          | 5×11.5                | 0.75                       | 1.5   | 163                                                         | ELXY100E□□820MEB5D  |
|             | 180         | 6.3×11.5              | 0.35                       | 0.70  | 273                                                         | ELXY100E□□181MFB5D  |
|             | 220         | 6.3×15                | 0.25                       | 0.50  | 390                                                         | ELXY100E□□221MF15D  |
|             | 330         | 8×12                  | 0.17                       | 0.34  | 445                                                         | ELXY100E□□331MH12D  |
|             | 390         | 10×12.5               | 0.12                       | 0.24  | 625                                                         | ELXY100E□□391MJC5S  |
|             | 470         | 8×15                  | 0.13                       | 0.26  | 555                                                         | ELXY100E□□471MH15D  |
|             | 680         | 8×20                  | 0.095                      | 0.19  | 740                                                         | ELXY100E□□681MH20D  |
|             | 680         | 10×16                 | 0.084                      | 0.17  | 825                                                         | ELXY100E□□681MJ16S  |
|             | 1,000       | 10×20                 | 0.062                      | 0.13  | 1,040                                                       | ELXY100E□□1021MK20S |
|             | 1,200       | 10×25                 | 0.052                      | 0.11  | 1,260                                                       | ELXY100E□□1221MJ25S |
|             | 1,500       | 10×30                 | 0.044                      | 0.088 | 1,440                                                       | ELXY100E□□1521MJ30S |
|             | 1,800       | 12.5×20               | 0.046                      | 0.092 | 1,340                                                       | ELXY100E□□182MK20S  |
|             | 2,200       | 12.5×25               | 0.034                      | 0.068 | 1,690                                                       | ELXY100E□□222MK25S  |
|             | 2,700       | 12.5×30               | 0.030                      | 0.060 | 1,950                                                       | ELXY100E□□272MK30S  |
|             | 3,300       | 12.5×35               | 0.024                      | 0.048 | 2,220                                                       | ELXY100E□□332MK35S  |
|             | 3,300       | 16×20                 | 0.038                      | 0.076 | 1,630                                                       | ELXY100E□□332ML20S  |
|             | 3,900       | 12.5×40               | 0.022                      | 0.044 | 2,390                                                       | ELXY100E□□392MK40S  |
|             | 3,900       | 16×25                 | 0.028                      | 0.056 | 2,070                                                       | ELXY100E□□392ML25S  |
|             | 5,600       | 16×30                 | 0.025                      | 0.050 | 2,350                                                       | ELXY100E□□562ML30S  |
|             | 6,800       | 16×35                 | 0.022                      | 0.044 | 2,550                                                       | ELXY100E□□682ML35S  |
|             | 8,200       | 16×40                 | 0.018                      | 0.036 | 2,900                                                       | ELXY100E□□822ML40S  |
| 16          | 56          | 5×11.5                | 0.75                       | 1.5   | 163                                                         | ELXY160E□□560MEB5D  |
|             | 120         | 6.3×11.5              | 0.35                       | 0.70  | 273                                                         | ELXY160E□□121MFB5D  |
|             | 180         | 6.3×15                | 0.25                       | 0.50  | 390                                                         | ELXY160E□□181MF15D  |
|             | 270         | 8×12                  | 0.17                       | 0.34  | 445                                                         | ELXY160E□□271MH12D  |
|             | 270         | 10×12.5               | 0.12                       | 0.24  | 625                                                         | ELXY160E□□271MJC5S  |
|             | 330         | 8×15                  | 0.13                       | 0.26  | 555                                                         | ELXY160E□□331MH15D  |
|             | 470         | 8×20                  | 0.095                      | 0.19  | 740                                                         | ELXY160E□□471MH20D  |
|             | 470         | 10×16                 | 0.084                      | 0.17  | 825                                                         | ELXY160E□□471MJ16S  |
|             | 680         | 10×20                 | 0.062                      | 0.13  | 1,040                                                       | ELXY160E□□681MJ20S  |
|             | 820         | 10×25                 | 0.052                      | 0.11  | 1,260                                                       | ELXY160E□□821MJ25S  |
|             | 1,200       | 10×30                 | 0.044                      | 0.088 | 1,440                                                       | ELXY160E□□1221MJ30S |
|             | 1,200       | 12.5×20               | 0.046                      | 0.092 | 1,340                                                       | ELXY160E□□1221MK20S |
|             | 1,500       | 12.5×25               | 0.034                      | 0.068 | 1,690                                                       | ELXY160E□□1521MK25S |
|             | 2,200       | 12.5×30               | 0.030                      | 0.060 | 1,950                                                       | ELXY160E□□222MK30S  |
|             | 2,200       | 16×20                 | 0.038                      | 0.076 | 1,630                                                       | ELXY160E□□222ML20S  |
|             | 2,700       | 12.5×35               | 0.024                      | 0.048 | 2,220                                                       | ELXY160E□□272MK35S  |
|             | 2,700       | 16×25                 | 0.028                      | 0.056 | 2,070                                                       | ELXY160E□□272ML25S  |
|             | 3,300       | 12.5×40               | 0.022                      | 0.044 | 2,390                                                       | ELXY160E□□332MK40S  |
|             | 3,900       | 16×30                 | 0.025                      | 0.050 | 2,350                                                       | ELXY160E□□392ML30S  |
|             | 4,700       | 16×35                 | 0.022                      | 0.044 | 2,550                                                       | ELXY160E□□472ML35S  |
|             | 5,600       | 16×40                 | 0.018                      | 0.036 | 2,900                                                       | ELXY160E□□562ML40S  |
| 25          | 39          | 5×11.5                | 0.75                       | 1.5   | 163                                                         | ELXY250E□□390MEB5D  |
|             | 82          | 6.3×11.5              | 0.35                       | 0.70  | 273                                                         | ELXY250E□□820MFB5D  |
|             | 120         | 6.3×15                | 0.25                       | 0.50  | 390                                                         | ELXY250E□□121MF15D  |
|             | 150         | 8×12                  | 0.17                       | 0.34  | 445                                                         | ELXY250E□□151MH12D  |
|             | 180         | 10×12.5               | 0.12                       | 0.24  | 625                                                         | ELXY250E□□181MJC5S  |
|             | 220         | 8×15                  | 0.13                       | 0.26  | 555                                                         | ELXY250E□□221MH15D  |
|             | 330         | 8×20                  | 0.095                      | 0.19  | 740                                                         | ELXY250E□□331MH20D  |
|             | 330         | 10×16                 | 0.084                      | 0.17  | 825                                                         | ELXY250E□□331MJ16S  |
|             | 470         | 10×20                 | 0.062                      | 0.13  | 1,040                                                       | ELXY250E□□471MJ20S  |
|             | 560         | 10×25                 | 0.052                      | 0.11  | 1,260                                                       | ELXY250E□□561MJ25S  |
|             | 820         | 10×30                 | 0.044                      | 0.088 | 1,440                                                       | ELXY250E□□821MJ30S  |
|             | 820         | 12.5×20               | 0.046                      | 0.092 | 1,340                                                       | ELXY250E□□821MK20S  |
|             | 1,000       | 12.5×25               | 0.034                      | 0.068 | 1,690                                                       | ELXY250E□□1021MK25S |
|             | 1,500       | 12.5×30               | 0.030                      | 0.060 | 1,950                                                       | ELXY250E□□1521MK30S |
|             | 1,500       | 16×20                 | 0.038                      | 0.076 | 1,630                                                       | ELXY250E□□152ML20S  |
|             | 1,800       | 12.5×35               | 0.024                      | 0.048 | 2,220                                                       | ELXY250E□□182MK35S  |
|             | 1,800       | 16×25                 | 0.028                      | 0.056 | 2,070                                                       | ELXY250E□□182ML25S  |
|             | 2,200       | 12.5×40               | 0.022                      | 0.044 | 2,390                                                       | ELXY250E□□222MK40S  |
|             | 2,700       | 16×30                 | 0.025                      | 0.050 | 2,350                                                       | ELXY250E□□272ML30S  |
|             | 3,300       | 16×35                 | 0.022                      | 0.044 | 2,550                                                       | ELXY250E□□332ML35S  |
|             | 3,900       | 16×40                 | 0.018                      | 0.036 | 2,900                                                       | ELXY250E□□392ML40S  |
| 35          | 27          | 5×11.5                | 0.75                       | 1.5   | 163                                                         | ELXY350E□□270MEB5D  |
|             | 56          | 6.3×11.5              | 0.35                       | 0.70  | 273                                                         | ELXY350E□□560MFB5D  |
|             | 82          | 6.3×15                | 0.25                       | 0.50  | 390                                                         | ELXY350E□□820MF15D  |
|             | 120         | 8×12                  | 0.17                       | 0.34  | 445                                                         | ELXY350E□□121MH12D  |
|             | 120         | 10×12.5               | 0.12                       | 0.24  | 625                                                         | ELXY350E□□121MJC5S  |
|             | 180         | 8×15                  | 0.13                       | 0.26  | 555                                                         | ELXY350E□□181MH15D  |
|             | 220         | 8×20                  | 0.095                      | 0.19  | 740                                                         | ELXY350E□□221MH20D  |
|             | 220         | 10×16                 | 0.084                      | 0.17  | 825                                                         | ELXY350E□□221MJ16S  |
|             | 330         | 10×20                 | 0.062                      | 0.13  | 1,040                                                       | ELXY350E□□331MJ20S  |
|             | 390         | 10×25                 | 0.052                      | 0.11  | 1,260                                                       | ELXY350E□□391MJ25S  |
|             | 560         | 10×30                 | 0.044                      | 0.088 | 1,440                                                       | ELXY350E□□561MJ30S  |
|             | 560         | 12.5×20               | 0.046                      | 0.092 | 1,340                                                       | ELXY350E□□561MK20S  |
|             | 680         | 12.5×25               | 0.034                      | 0.068 | 1,690                                                       | ELXY350E□□681MK25S  |
|             | 1,000       | 12.5×30               | 0.030                      | 0.060 | 1,950                                                       | ELXY350E□□1021MK30S |
|             | 1,000       | 16×20                 | 0.038                      | 0.076 | 1,630                                                       | ELXY350E□□1021ML20S |
|             | 1,200       | 12.5×35               | 0.024                      | 0.048 | 2,220                                                       | ELXY350E□□1221MK35S |
|             | 1,200       | 16×25                 | 0.028                      | 0.056 | 2,070                                                       | ELXY350E□□1221ML25S |
|             | 1,500       | 12.5×40               | 0.022                      | 0.044 | 2,390                                                       | ELXY350E□□1521MK40S |
|             | 1,800       | 16×30                 | 0.025                      | 0.050 | 2,350                                                       | ELXY350E□□1821ML30S |
|             | 2,200       | 16×35                 | 0.022                      | 0.044 | 2,550                                                       | ELXY350E□□2221ML35S |
|             | 2,700       | 16×40                 | 0.018                      | 0.036 | 2,900                                                       | ELXY350E□□2721ML40S |
| 50          | 18          | 5×11.5                | 1.2                        | 2.4   | 129                                                         | ELXY500E□□180MEB5D  |
|             | 39          | 6.3×11.5              | 0.54                       | 1.1   | 219                                                         | ELXY500E□□390MFB5D  |
|             | 56          | 6.3×15                | 0.34                       | 0.68  | 310                                                         | ELXY500E□□560MF15D  |
|             | 68          | 8×12                  | 0.30                       | 0.60  | 340                                                         | ELXY500E□□680MH12D  |
|             | 82          | 8×15                  | 0.20                       | 0.40  | 470                                                         | ELXY500E□□820MH15D  |
|             | 82          | 10×12.5               | 0.20                       | 0.40  | 480                                                         | ELXY500E□□820MJC5S  |
|             | 120         | 8×20                  | 0.14                       | 0.28  | 610                                                         | ELXY500E□□121MH20D  |
|             | 120         | 10×16                 | 0.13                       | 0.26  | 755                                                         | ELXY500E□□121MJ16S  |
|             | 180         | 10×20                 | 0.088                      | 0.18  | 945                                                         | ELXY500E□□181MJ20S  |
|             | 220         | 10×25                 | 0.073                      | 0.15  | 1,150                                                       | ELXY500E□□221MJ25S  |
|             | 330         | 10×30                 | 0.054                      | 0.11  | 1,260                                                       | ELXY500E□□331MJ30S  |
|             | 330         | 12.5×20               | 0.059                      | 0.12  | 1,190                                                       | ELXY500E□□331MK20S  |
|             | 470         | 12.5×25               | 0.044                      | 0.088 | 1,490                                                       | ELXY500E□□471MK25S  |
|             | 560         | 12.5×30               | 0.039                      | 0.078 | 1,720                                                       | ELXY500E□□561MK30S  |
|             | 680         | 12.5×35               | 0.033                      | 0.066 | 1,890                                                       | ELXY500E□□681MK35S  |
|             | 680         | 16×20                 | 0.050                      | 0.10  | 1,420                                                       | ELXY500E□□681ML20S  |
|             | 820         | 12.5×40               | 0.029                      | 0.058 | 2,030                                                       | ELXY500E□□821MK40S  |
|             | 820         | 16×25                 | 0.034                      | 0.068 | 1,880                                                       | ELXY500E□□821ML25S  |
|             | 1,000       | 16×30                 | 0.030                      | 0.060 | 2,150                                                       | ELXY500E□□1021ML30S |
|             | 1,200       | 16×35                 | 0.027                      | 0.054 | 2,320                                                       | ELXY500E□□1221ML35S |
|             | 1,500       | 16×40                 | 0.024                      | 0.048 | 2,540                                                       | ELXY500E□□1521ML40S |
| 63          | 10          | 5×11.5                | 1.9                        | 4.8   | 103                                                         | ELXY630E□□100MEB5D  |
|             | 18          | 6.3×11.5              | 1.0                        | 2.5   | 161                                                         | ELXY630E□□180MFB5D  |
|             | 33          | 6.3×15                | 0.61                       | 1.6   | 233                                                         | ELXY630E□□330MF15D  |
|             | 47          | 8×12                  | 0.47                       | 1.2   | 274                                                         | ELXY630E□□470MH12D  |
|             | 56          | 10×12.5               | 0.27                       | 0.68  | 418                                                         | ELXY630E□□560MJC5S  |
|             | 68          | 8×15                  | 0.34                       | 0.85  | 360                                                         | ELXY630E□□680MH15D  |
|             | 68          | 10×16                 | 0.21                       | 0.53  | 525                                                         | ELXY630E□□680MJ16S  |
|             | 82          | 8×20                  | 0.21                       | 0.53  | 500                                                         | ELXY630E□□820MH20D  |
|             | 120         | 10×20                 | 0.16                       | 0.40  | 650                                                         | ELXY630E□□121MJ20S  |
|             | 150         | 10×25                 | 0.13                       | 0.33  | 783                                                         | ELXY630E□□151MJ25S  |
|             | 180         | 10×30                 | 0.10                       | 0.25  | 960                                                         | ELXY630E□□181MJ30S  |
|             | 220         | 12.5×20               | 0.11                       | 0.28  | 870                                                         | ELXY630E□□221MK20S  |
|             | 270         | 12.5×25               | 0.074                      | 0.19  | 1,150                                                       | ELXY630E□□271MK25S  |
|             | 330         | 16×20                 | 0.085                      | 0.22  | 1,100                                                       | ELXY630E□□331ML20S  |
|             | 390         | 12.5×30               | 0.068                      | 0.17  | 1,280                                                       | ELXY630E□□391MK30S  |
|             | 470         | 12.5×35               | 0.063                      | 0.16  | 1,390                                                       | ELXY630E□□471MK35S  |
|             | 470         | 16×25                 | 0.055                      | 0.14  | 1,480                                                       | ELXY630E□□471ML25S  |
|             | 560         | 12.5×40               | 0.051                      | 0.13  | 1,530                                                       | ELXY630E□□561MK40S  |
|             | 680         | 16×30                 | 0.046                      | 0.12  | 1,720                                                       | ELXY630E□□681ML30S  |
|             | 820         | 16×35                 | 0.040                      | 0.10  | 1,910                                                       | ELXY630E□□821ML35S  |
|             | 1,000       | 16×40                 | 0.036                      | 0.09  | 2,070                                                       | ELXY630E□□1021ML40S |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

## LXV Series

- Low impedance
- Endurance with ripple current : 2,000 to 5,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

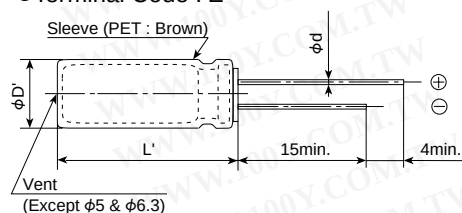
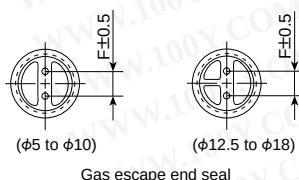


## ◆ SPECIFICATIONS

| Items                           | Characteristics                                                                                                                                                                                            |                                                                           |      |      |                                   |      |            |      |      |      |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------|------|-----------------------------------|------|------------|------|------|------|
| Category Temperature Range      | -55 to +105°C                                                                                                                                                                                              |                                                                           |      |      |                                   |      |            |      |      |      |
| Rated Voltage Range             | 6.3 to 100V <sub>dc</sub>                                                                                                                                                                                  |                                                                           |      |      |                                   |      |            |      |      |      |
| Capacitance Tolerance           | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                  |                                                                           |      |      |                                   |      |            |      |      |      |
| Leakage Current                 | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                              |                                                                           |      |      |                                   |      |            |      |      |      |
| Dissipation Factor (tanδ)       | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                           | 6.3V                                                                      | 10V  | 16V  | 25V                               | 35V  | 50V        | 63V  | 80V  | 100V |
|                                 | tanδ (Max.)                                                                                                                                                                                                | 0.22                                                                      | 0.19 | 0.16 | 0.14                              | 0.12 | 0.10       | 0.10 | 0.09 | 0.08 |
|                                 | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                          |                                                                           |      |      |                                   |      |            |      |      |      |
| Low Temperature Characteristics | Capacitance change ΔC (-55°C /+20°C)                                                                                                                                                                       |                                                                           |      |      | 0.7min.                           |      | (at 120Hz) |      |      |      |
|                                 | Max. impedance ratio (-55°C /+20°C)                                                                                                                                                                        |                                                                           |      |      | 3max.(6.3V <sub>dc</sub> : 4max.) |      |            |      |      |      |
| Endurance                       | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C. |                                                                           |      |      |                                   |      |            |      |      |      |
|                                 | Time                                                                                                                                                                                                       | φ5 to 6.3 : 2,000hours   φ8 & 10 : 3,000hours   φ12.5 to φ18 : 5,000hours |      |      |                                   |      |            |      |      |      |
|                                 | Capacitance change                                                                                                                                                                                         | ≤±20% of the initial value                                                |      |      |                                   |      |            |      |      |      |
|                                 | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                      |      |      |                                   |      |            |      |      |      |
|                                 | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                              |      |      |                                   |      |            |      |      |      |
| Shelf Life                      | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                                             |                                                                           |      |      |                                   |      |            |      |      |      |
|                                 | Capacitance change                                                                                                                                                                                         | ≤±20% of the initial value                                                |      |      |                                   |      |            |      |      |      |
|                                 | D.F. (tanδ)                                                                                                                                                                                                | ≤200% of the initial specified value                                      |      |      |                                   |      |            |      |      |      |
|                                 | Leakage current                                                                                                                                                                                            | ≤The initial specified value                                              |      |      |                                   |      |            |      |      |      |

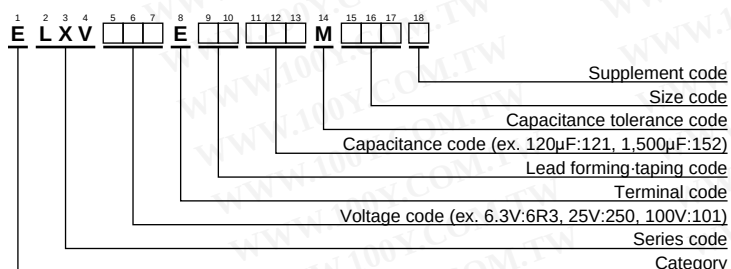
### ◆ DIMENSIONS [mm]

- Terminal Code : E



|           |                      |     |     |     |      |     |     |
|-----------|----------------------|-----|-----|-----|------|-----|-----|
| $\phi D$  | 5                    | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
| $\phi d$  | 0.5                  | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F         | 2.0                  | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| $\phi D'$ | $\phi D + 0.5 \max.$ |     |     |     |      |     |     |
| L'        | $L + 1.5 \max.$      |     |     |     |      |     |     |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

勝特力材料 886-3-5753170  
勝特力電子(上海) 86-21-54151736  
勝特力電子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

LXV Series

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           | WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|-------------------------------------------------------------|--------------------|-------------|-------------|-----------------------|----------------------------|-------|-------------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                             |                    |             |             |                       | 20°C                       | -10°C |                                                             |                    |
| 6.3         | 120         | 5×11.5                | 0.72                       | 1.8   | 165                                                         | ELXV6R3E□□121MEB5D | 16          | 2,700       | 12.5×35               | 0.027                      | 0.068 | 2,230                                                       | ELXV160E□□272MK35S |
|             | 220         | 6.3×11.5              | 0.38                       | 0.95  | 255                                                         | ELXV6R3E□□221MFB5D |             | 2,700       | 16×25                 | 0.028                      | 0.070 | 2,190                                                       | ELXV160E□□272ML25S |
|             | 330         | 6.3×15                | 0.27                       | 0.68  | 330                                                         | ELXV6R3E□□331MF15D |             | 3,300       | 12.5×40               | 0.024                      | 0.060 | 2,460                                                       | ELXV160E□□332MK40S |
|             | 390         | 8×12                  | 0.20                       | 0.50  | 415                                                         | ELXV6R3E□□391MH12D |             | 3,300       | 18×20                 | 0.036                      | 0.090 | 1,940                                                       | ELXV160E□□332MM20S |
|             | 470         | 10×12.5               | 0.12                       | 0.30  | 635                                                         | ELXV6R3E□□471MJC5S |             | 3,900       | 16×30                 | 0.025                      | 0.063 | 2,510                                                       | ELXV160E□□392ML30S |
|             | 560         | 8×15                  | 0.16                       | 0.40  | 495                                                         | ELXV6R3E□□561MH15D |             | 3,900       | 18×25                 | 0.027                      | 0.068 | 2,350                                                       | ELXV160E□□392MM25S |
|             | 680         | 10×16                 | 0.084                      | 0.21  | 825                                                         | ELXV6R3E□□681MJ16S |             | 4,700       | 16×35                 | 0.022                      | 0.055 | 2,770                                                       | ELXV160E□□472ML35S |
|             | 820         | 8×20                  | 0.11                       | 0.28  | 640                                                         | ELXV6R3E□□821MH20D |             | 4,700       | 18×30                 | 0.024                      | 0.060 | 2,720                                                       | ELXV160E□□472MM30S |
|             | 1,200       | 10×20                 | 0.062                      | 0.16  | 1,060                                                       | ELXV6R3E□□122MJ20S |             | 5,600       | 16×40                 | 0.018                      | 0.045 | 3,110                                                       | ELXV160E□□562ML40S |
|             | 1,500       | 10×25                 | 0.052                      | 0.13  | 1,260                                                       | ELXV6R3E□□152MJ25S |             | 6,800       | 18×35                 | 0.021                      | 0.053 | 3,050                                                       | ELXV160E□□682MM35S |
|             | 2,200       | 10×30                 | 0.044                      | 0.11  | 1,450                                                       | ELXV6R3E□□222MJ30S |             | 8,200       | 18×40                 | 0.017                      | 0.043 | 3,300                                                       | ELXV160E□□822MM40S |
|             | 2,200       | 12.5×20               | 0.046                      | 0.12  | 1,360                                                       | ELXV6R3E□□222MK20S | 25          | 39          | 5×11.5                | 0.72                       | 1.8   | 165                                                         | ELXV250E□□390MEB5D |
|             | 2,700       | 12.5×25               | 0.034                      | 0.085 | 1,700                                                       | ELXV6R3E□□272MK25S |             | 82          | 6.3×11.5              | 0.38                       | 0.95  | 255                                                         | ELXV250E□□820MFB5D |
|             | 3,900       | 12.5×30               | 0.030                      | 0.075 | 1,980                                                       | ELXV6R3E□□392MK30S |             | 120         | 6.3×15                | 0.27                       | 0.68  | 330                                                         | ELXV250E□□121MF15D |
|             | 3,900       | 16×20                 | 0.038                      | 0.095 | 1,770                                                       | ELXV6R3E□□392ML20S |             | 150         | 8×12                  | 0.20                       | 0.50  | 415                                                         | ELXV250E□□151MH12D |
|             | 4,700       | 12.5×35               | 0.027                      | 0.068 | 2,230                                                       | ELXV6R3E□□472MK35S |             | 180         | 10×12.5               | 0.12                       | 0.30  | 635                                                         | ELXV250E□□181MJC5S |
|             | 5,600       | 12.5×40               | 0.024                      | 0.060 | 2,460                                                       | ELXV6R3E□□562MK40S |             | 220         | 8×15                  | 0.16                       | 0.40  | 495                                                         | ELXV250E□□221MH15D |
|             | 5,600       | 16×25                 | 0.028                      | 0.070 | 2,190                                                       | ELXV6R3E□□562ML25S |             | 330         | 8×20                  | 0.11                       | 0.28  | 640                                                         | ELXV250E□□331MH20D |
|             | 5,600       | 18×20                 | 0.036                      | 0.090 | 1,940                                                       | ELXV6R3E□□562MM20S |             | 330         | 10×16                 | 0.084                      | 0.21  | 825                                                         | ELXV250E□□331MJ16S |
|             | 6,800       | 16×30                 | 0.025                      | 0.063 | 2,510                                                       | ELXV6R3E□□682ML30S |             | 470         | 10×20                 | 0.062                      | 0.16  | 1,060                                                       | ELXV250E□□471MJ20S |
|             | 6,800       | 18×25                 | 0.027                      | 0.068 | 2,350                                                       | ELXV6R3E□□682MM25S |             | 560         | 10×25                 | 0.052                      | 0.13  | 1,260                                                       | ELXV250E□□561MJ25S |
|             | 8,200       | 16×35                 | 0.022                      | 0.055 | 2,770                                                       | ELXV6R3E□□822ML35S |             | 820         | 10×30                 | 0.044                      | 0.11  | 1,450                                                       | ELXV250E□□821MJ30S |
|             | 10,000      | 16×40                 | 0.018                      | 0.045 | 3,110                                                       | ELXV6R3E□□103ML40S |             | 820         | 12.5×20               | 0.046                      | 0.12  | 1,360                                                       | ELXV250E□□821MK20S |
|             | 10,000      | 18×30                 | 0.024                      | 0.060 | 2,720                                                       | ELXV6R3E□□103MM30S |             | 1,000       | 12.5×25               | 0.034                      | 0.085 | 1,700                                                       | ELXV250E□□102MK25S |
|             | 12,000      | 18×35                 | 0.021                      | 0.053 | 3,050                                                       | ELXV6R3E□□123MM35S |             | 1,500       | 12.5×30               | 0.030                      | 0.075 | 1,980                                                       | ELXV250E□□152MK30S |
|             | 15,000      | 18×40                 | 0.017                      | 0.043 | 3,300                                                       | ELXV6R3E□□153MM40S |             | 1,500       | 16×20                 | 0.038                      | 0.095 | 1,770                                                       | ELXV250E□□152ML20S |
|             | 82          | 5×11.5                | 0.72                       | 1.8   | 165                                                         | ELXV100E□□820MEB5D |             | 1,800       | 12.5×35               | 0.027                      | 0.068 | 2,230                                                       | ELXV250E□□182MK35S |
|             | 180         | 6.3×11.5              | 0.38                       | 0.95  | 255                                                         | ELXV100E□□181MFB5D |             | 1,800       | 16×25                 | 0.028                      | 0.070 | 2,190                                                       | ELXV250E□□182ML25S |
|             | 270         | 6.3×15                | 0.27                       | 0.68  | 330                                                         | ELXV100E□□271MF15D |             | 2,200       | 12.5×40               | 0.024                      | 0.060 | 2,460                                                       | ELXV250E□□222MK40S |
|             | 330         | 8×12                  | 0.20                       | 0.50  | 415                                                         | ELXV100E□□331MH12D |             | 2,200       | 18×20                 | 0.036                      | 0.090 | 1,940                                                       | ELXV250E□□222MM20S |
| 10          | 390         | 10×12.5               | 0.12                       | 0.30  | 635                                                         | ELXV100E□□391MJC5S |             | 2,700       | 16×30                 | 0.025                      | 0.063 | 2,510                                                       | ELXV250E□□272ML30S |
|             | 470         | 8×15                  | 0.16                       | 0.40  | 495                                                         | ELXV100E□□471MH15D |             | 2,700       | 18×25                 | 0.027                      | 0.068 | 2,350                                                       | ELXV250E□□272MM25S |
|             | 680         | 8×20                  | 0.11                       | 0.28  | 640                                                         | ELXV100E□□681MH20D |             | 3,300       | 16×35                 | 0.022                      | 0.055 | 2,770                                                       | ELXV250E□□332ML35S |
|             | 680         | 10×16                 | 0.084                      | 0.21  | 825                                                         | ELXV100E□□681MJ16S |             | 3,300       | 18×30                 | 0.024                      | 0.060 | 2,720                                                       | ELXV250E□□332MM30S |
|             | 1,000       | 10×20                 | 0.062                      | 0.16  | 1,060                                                       | ELXV100E□□102MJ20S |             | 3,900       | 16×40                 | 0.018                      | 0.045 | 3,110                                                       | ELXV250E□□392ML40S |
|             | 1,200       | 10×25                 | 0.052                      | 0.13  | 1,260                                                       | ELXV100E□□122MJ25S |             | 3,900       | 18×35                 | 0.021                      | 0.053 | 3,050                                                       | ELXV250E□□392MM35S |
|             | 1,500       | 10×30                 | 0.044                      | 0.11  | 1,450                                                       | ELXV100E□□152MJ30S |             | 4,700       | 18×40                 | 0.017                      | 0.043 | 3,300                                                       | ELXV250E□□472MM40S |
|             | 1,800       | 12.5×20               | 0.046                      | 0.12  | 1,360                                                       | ELXV100E□□182MK20S | 35          | 27          | 5×11.5                | 0.72                       | 1.8   | 165                                                         | ELXV350E□□270MEB5D |
|             | 2,200       | 12.5×25               | 0.034                      | 0.085 | 1,700                                                       | ELXV100E□□222MK25S |             | 56          | 6.3×11.5              | 0.38                       | 0.95  | 255                                                         | ELXV350E□□560MFB5D |
|             | 2,700       | 12.5×30               | 0.030                      | 0.075 | 1,980                                                       | ELXV100E□□272MK30S |             | 82          | 6.3×15                | 0.27                       | 0.68  | 330                                                         | ELXV350E□□820MF15D |
|             | 3,300       | 12.5×35               | 0.027                      | 0.068 | 2,230                                                       | ELXV100E□□332MK35S |             | 120         | 8×12                  | 0.20                       | 0.50  | 415                                                         | ELXV350E□□121MH12D |
|             | 3,300       | 16×20                 | 0.038                      | 0.095 | 1,770                                                       | ELXV100E□□332ML20S |             | 120         | 10×12.5               | 0.12                       | 0.30  | 635                                                         | ELXV350E□□121MJC5S |
|             | 3,900       | 12.5×40               | 0.024                      | 0.060 | 2,460                                                       | ELXV100E□□392MK40S |             | 180         | 8×15                  | 0.16                       | 0.40  | 495                                                         | ELXV350E□□181MH15D |
|             | 3,900       | 16×25                 | 0.028                      | 0.070 | 2,190                                                       | ELXV100E□□392ML25S |             | 220         | 8×20                  | 0.11                       | 0.28  | 640                                                         | ELXV350E□□221MH20D |
|             | 3,900       | 18×20                 | 0.036                      | 0.090 | 1,940                                                       | ELXV100E□□392MM20S |             | 220         | 10×16                 | 0.084                      | 0.21  | 825                                                         | ELXV350E□□221MJ16S |
|             | 4,700       | 18×25                 | 0.027                      | 0.068 | 2,350                                                       | ELXV100E□□472MM25S |             | 330         | 10×20                 | 0.062                      | 0.16  | 1,060                                                       | ELXV350E□□331MJ20S |
|             | 5,600       | 16×30                 | 0.025                      | 0.063 | 2,510                                                       | ELXV100E□□562ML30S |             | 390         | 10×25                 | 0.052                      | 0.13  | 1,260                                                       | ELXV350E□□391MJ25S |
|             | 6,800       | 16×35                 | 0.022                      | 0.055 | 2,770                                                       | ELXV100E□□682ML35S |             | 560         | 10×30                 | 0.044                      | 0.11  | 1,450                                                       | ELXV350E□□561MJ30S |
|             | 6,800       | 18×30                 | 0.024                      | 0.060 | 2,720                                                       | ELXV100E□□682MM30S |             | 560         | 12.5×20               | 0.046                      | 0.12  | 1,360                                                       | ELXV350E□□561MK20S |
|             | 8,200       | 16×40                 | 0.018                      | 0.045 | 3,110                                                       | ELXV100E□□822ML40S |             | 680         | 12.5×25               | 0.034                      | 0.085 | 1,700                                                       | ELXV350E□□681MK25S |
|             | 8,200       | 18×35                 | 0.021                      | 0.053 | 3,050                                                       | ELXV100E□□822MM35S |             | 1,000       | 12.5×30               | 0.030                      | 0.075 | 1,980                                                       | ELXV350E□□102MK30S |
|             | 10,000      | 18×40                 | 0.017                      | 0.043 | 3,300                                                       | ELXV100E□□103MM40S |             | 1,000       | 16×20                 | 0.038                      | 0.095 | 1,770                                                       | ELXV350E□□102ML20S |
|             | 56          | 5×11.5                | 0.72                       | 1.8   | 165                                                         | ELXV160E□□560MEB5D |             | 1,200       | 12.5×35               | 0.027                      | 0.068 | 2,230                                                       | ELXV350E□□122MK35S |
|             | 120         | 6.3×11.5              | 0.38                       | 0.95  | 255                                                         | ELXV160E□□121MFB5D |             | 1,200       | 16×25                 | 0.028                      | 0.070 | 2,190                                                       | ELXV350E□□122ML25S |
|             | 180         | 6.3×15                | 0.27                       | 0.68  | 330                                                         | ELXV160E□□181MF15D |             | 1,500       | 12.5×40               | 0.024                      | 0.060 | 2,460                                                       | ELXV350E□□152MK40S |
|             | 270         | 8×12                  | 0.20                       | 0.50  | 415                                                         | ELXV160E□□271MH12D |             | 1,500       | 18×20                 | 0.036                      | 0.090 | 1,940                                                       | ELXV350E□□152MM20S |
|             | 270         | 10×12.5               | 0.12                       | 0.30  | 635                                                         | ELXV160E□□271MJC5S |             | 1,800       | 16×30                 | 0.025                      | 0.063 | 2,510                                                       | ELXV350E□□182ML30S |
| 16          | 330         | 8×15                  | 0.16                       | 0.40  | 495                                                         | ELXV160E□□331MH15D |             | 1,800       | 18×25                 | 0.027                      | 0.068 | 2,350                                                       | ELXV350E□□182MM25S |
|             | 470         | 8×20                  | 0.11                       | 0.28  | 640                                                         | ELXV160E□□471MH20D | 50          | 2,200       | 16×35                 | 0.022                      | 0.055 | 2,770                                                       | ELXV350E□□222ML35S |
|             | 470         | 10×16                 | 0.084                      | 0.21  | 825                                                         | ELXV160E□□471MJ16S |             | 2,200       | 18×30                 | 0.024                      | 0.060 | 2,720                                                       | ELXV350E□□222MM30S |
|             | 680         | 10×20                 | 0.062                      | 0.16  | 1,060                                                       | ELXV160E□□681MJ20S |             | 2,700       | 16×40                 | 0.018                      | 0.045 | 3,110                                                       | ELXV350E□□272ML40S |
|             | 820         | 10×25                 | 0.052                      | 0.13  | 1,260                                                       | ELXV160E□□821MJ25S |             | 2,700       | 18×35                 | 0.021                      | 0.053 | 3,050                                                       | ELXV350E□□272MM35S |
|             | 1,200       | 10×30                 | 0.044                      | 0.11  | 1,450                                                       | ELXV160E□□122MJ30S |             | 3,300       | 18×40                 | 0.017                      | 0.043 | 3,300                                                       | ELXV350E□□332MM40S |
|             | 1,200       | 12.5×20               | 0.046                      | 0.12  | 1,360                                                       | ELXV160E□□122MK20S |             | 18          | 5×11.5                | 1.1                        | 3.3   | 165                                                         | ELXV500E□□180MEB5D |
|             | 1,500       | 12.5×25               | 0.034                      | 0.085 | 1,700                                                       | ELXV160E□□152MK25S |             | 39          | 6.3×11.5              | 0.56                       | 1.6   | 255                                                         | ELXV500E□□390MFB5D |
|             | 2,200       | 12.5×30               | 0.030                      | 0.075 | 1,980                                                       | ELXV160E□□222MK30S |             | 56          | 6.3×15                | 0.41                       | 1.2   | 310                                                         | ELXV500E□□560MF15D |
|             | 2,200       | 16×20                 | 0.038                      | 0.095 | 1,770                                                       | ELXV160E□□222ML20S |             | 68          | 8×12                  | 0.29                       | 0.84  | 415                                                         | ELXV500E□□680MH12D |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low impedance, 105°C

LXV Series

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/100kHz) |       | Rated ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------------|-------|----------------------------------------------------------|--------------------|
|             |             |                       | 20°C                       | -10°C |                                                          |                    |
| 50          | 82          | 8×15                  | 0.24                       | 0.72  | 505                                                      | ELXV500E□□820MH15D |
|             | 82          | 10×12.5               | 0.16                       | 0.40  | 530                                                      | ELXV500E□□820MJC5S |
|             | 120         | 8×20                  | 0.18                       | 0.52  | 610                                                      | ELXV500E□□121MH20D |
|             | 120         | 10×16                 | 0.12                       | 0.30  | 755                                                      | ELXV500E□□121MJ16S |
|             | 180         | 10×20                 | 0.088                      | 0.22  | 945                                                      | ELXV500E□□181MJ20S |
|             | 220         | 10×25                 | 0.068                      | 0.17  | 1,150                                                    | ELXV500E□□221MJ25S |
|             | 330         | 10×30                 | 0.059                      | 0.15  | 1,260                                                    | ELXV500E□□331MJ30S |
|             | 330         | 12.5×20               | 0.059                      | 0.15  | 1,190                                                    | ELXV500E□□331MK20S |
|             | 470         | 12.5×25               | 0.045                      | 0.11  | 1,500                                                    | ELXV500E□□471MK25S |
|             | 560         | 12.5×30               | 0.039                      | 0.098 | 1,720                                                    | ELXV500E□□561MK30S |
|             | 680         | 12.5×35               | 0.033                      | 0.083 | 1,900                                                    | ELXV500E□□681MK35S |
|             | 680         | 16×20                 | 0.043                      | 0.11  | 1,500                                                    | ELXV500E□□681ML20S |
|             | 820         | 12.5×40               | 0.029                      | 0.073 | 2,120                                                    | ELXV500E□□821MK40S |
|             | 820         | 16×25                 | 0.033                      | 0.083 | 1,880                                                    | ELXV500E□□821ML25S |
|             | 820         | 18×20                 | 0.039                      | 0.098 | 1,660                                                    | ELXV500E□□821MM20S |
|             | 1,000       | 16×30                 | 0.029                      | 0.073 | 2,150                                                    | ELXV500E□□102ML30S |
|             | 1,000       | 18×25                 | 0.030                      | 0.075 | 2,020                                                    | ELXV500E□□102MM25S |
|             | 1,200       | 16×35                 | 0.025                      | 0.063 | 2,320                                                    | ELXV500E□□122ML35S |
|             | 1,500       | 16×40                 | 0.021                      | 0.053 | 2,650                                                    | ELXV500E□□152ML40S |
|             | 1,500       | 18×30                 | 0.026                      | 0.065 | 2,340                                                    | ELXV500E□□152MM30S |
|             | 1,800       | 18×35                 | 0.023                      | 0.058 | 2,620                                                    | ELXV500E□□182MM35S |
|             | 2,200       | 18×40                 | 0.020                      | 0.050 | 2,790                                                    | ELXV500E□□222MM40S |
| 63          | 12          | 5×11.5                | 1.9                        | 4.8   | 100                                                      | ELXV630E□□120MEB5D |
|             | 27          | 6.3×11.5              | 1.1                        | 2.8   | 160                                                      | ELXV630E□□270MFB5D |
|             | 39          | 6.3×15                | 0.62                       | 1.6   | 230                                                      | ELXV630E□□390MF15D |
|             | 47          | 8×12                  | 0.49                       | 1.3   | 275                                                      | ELXV630E□□470MH12D |
|             | 56          | 10×12.5               | 0.27                       | 0.68  | 420                                                      | ELXV630E□□560MJC5S |
|             | 68          | 8×15                  | 0.34                       | 0.85  | 360                                                      | ELXV630E□□680MH15D |
|             | 68          | 10×16                 | 0.21                       | 0.53  | 523                                                      | ELXV630E□□680MJ16S |
|             | 82          | 8×20                  | 0.21                       | 0.53  | 500                                                      | ELXV630E□□820MH20D |
|             | 120         | 10×20                 | 0.16                       | 0.40  | 650                                                      | ELXV630E□□121MJ20S |
|             | 150         | 10×25                 | 0.13                       | 0.33  | 780                                                      | ELXV630E□□151MJ25S |
|             | 180         | 10×30                 | 0.10                       | 0.25  | 960                                                      | ELXV630E□□181MJ30S |
|             | 220         | 12.5×20               | 0.11                       | 0.28  | 870                                                      | ELXV630E□□221MK20S |
|             | 270         | 12.5×25               | 0.074                      | 0.19  | 1,150                                                    | ELXV630E□□271MK25S |
|             | 390         | 12.5×30               | 0.068                      | 0.17  | 1,280                                                    | ELXV630E□□391MK30S |
|             | 390         | 16×20                 | 0.085                      | 0.22  | 1,100                                                    | ELXV630E□□391ML20S |
|             | 470         | 12.5×35               | 0.063                      | 0.16  | 1,390                                                    | ELXV630E□□471MK35S |
|             | 470         | 16×25                 | 0.055                      | 0.14  | 1,480                                                    | ELXV630E□□471ML25S |
|             | 560         | 12.5×40               | 0.051                      | 0.13  | 1,530                                                    | ELXV630E□□561MK40S |
|             | 560         | 18×20                 | 0.085                      | 0.22  | 1,170                                                    | ELXV630E□□561MM20S |
|             | 680         | 16×30                 | 0.046                      | 0.12  | 1,720                                                    | ELXV630E□□681ML30S |
|             | 680         | 18×25                 | 0.055                      | 0.14  | 1,520                                                    | ELXV630E□□681MM25S |
|             | 820         | 16×35                 | 0.040                      | 0.10  | 1,910                                                    | ELXV630E□□821ML35S |
|             | 820         | 18×30                 | 0.046                      | 0.12  | 1,770                                                    | ELXV630E□□821MM30S |
|             | 1,000       | 16×40                 | 0.036                      | 0.09  | 2,070                                                    | ELXV630E□□102ML40S |
|             | 1,000       | 18×35                 | 0.040                      | 0.10  | 1,970                                                    | ELXV630E□□102MM35S |
|             | 1,200       | 18×40                 | 0.036                      | 0.09  | 2,130                                                    | ELXV630E□□122MM40S |
| 80          | 8.2         | 5×11.5                | 1.9                        | 5.1   | 100                                                      | ELXV800E□□8R2MEB5D |
|             | 18          | 6.3×11.5              | 1.1                        | 3.0   | 150                                                      | ELXV800E□□180MFB5D |
| 80          | 27          | 6.3×15                | 0.62                       | 1.7   | 220                                                      | ELXV800E□□270MF15D |
|             | 33          | 8×12                  | 0.53                       | 1.5   | 275                                                      | ELXV800E□□330MH12D |
|             | 39          | 10×12.5               | 0.47                       | 1.3   | 380                                                      | ELXV800E□□390MJC5S |
|             | 47          | 8×15                  | 0.35                       | 0.97  | 360                                                      | ELXV800E□□470MH15D |
|             | 56          | 8×20                  | 0.27                       | 0.74  | 490                                                      | ELXV800E□□560MH20D |
|             | 56          | 10×16                 | 0.33                       | 0.90  | 500                                                      | ELXV800E□□560MJ16S |
|             | 82          | 10×20                 | 0.26                       | 0.70  | 620                                                      | ELXV800E□□820MJ20S |
|             | 100         | 10×25                 | 0.19                       | 0.52  | 795                                                      | ELXV800E□□101MJ25S |
|             | 150         | 10×30                 | 0.15                       | 0.41  | 955                                                      | ELXV800E□□151MJ30S |
|             | 150         | 12.5×20               | 0.15                       | 0.41  | 890                                                      | ELXV800E□□151MK20S |
|             | 180         | 12.5×25               | 0.11                       | 0.30  | 1,040                                                    | ELXV800E□□181MK25S |
|             | 270         | 12.5×30               | 0.094                      | 0.26  | 1,270                                                    | ELXV800E□□271MK30S |
|             | 270         | 16×20                 | 0.11                       | 0.30  | 1,240                                                    | ELXV800E□□271ML20S |
|             | 330         | 12.5×35               | 0.087                      | 0.24  | 1,450                                                    | ELXV800E□□331MK35S |
|             | 330         | 16×25                 | 0.081                      | 0.22  | 1,440                                                    | ELXV800E□□331ML25S |
|             | 390         | 12.5×40               | 0.060                      | 0.17  | 1,610                                                    | ELXV800E□□391MK40S |
|             | 390         | 18×20                 | 0.085                      | 0.23  | 1,450                                                    | ELXV800E□□391MM20S |
|             | 470         | 16×30                 | 0.058                      | 0.16  | 1,790                                                    | ELXV800E□□471ML30S |
|             | 470         | 18×25                 | 0.070                      | 0.19  | 1,650                                                    | ELXV800E□□471MM25S |
|             | 560         | 16×35                 | 0.052                      | 0.14  | 2,000                                                    | ELXV800E□□561ML35S |
|             | 680         | 16×40                 | 0.041                      | 0.11  | 2,200                                                    | ELXV800E□□681ML40S |
|             | 680         | 18×30                 | 0.058                      | 0.16  | 1,850                                                    | ELXV800E□□681MM30S |
|             | 820         | 18×35                 | 0.052                      | 0.14  | 1,990                                                    | ELXV800E□□821MM35S |
|             | 1,000       | 18×40                 | 0.041                      | 0.11  | 2,370                                                    | ELXV800E□□102MM40S |
| 100         | 5.6         | 5×11.5                | 1.9                        | 5.1   | 100                                                      | ELXV101E□□5R6MEB5D |
|             | 12          | 6.3×11.5              | 1.1                        | 3.0   | 150                                                      | ELXV101E□□120MFB5D |
|             | 18          | 6.3×15                | 0.62                       | 1.7   | 220                                                      | ELXV101E□□180MF15D |
|             | 22          | 8×12                  | 0.53                       | 1.5   | 275                                                      | ELXV101E□□220MH12D |
|             | 27          | 10×12.5               | 0.47                       | 1.3   | 380                                                      | ELXV101E□□270MJC5S |
|             | 33          | 8×15                  | 0.35                       | 0.97  | 360                                                      | ELXV101E□□330MH15D |
|             | 33          | 10×16                 | 0.33                       | 0.90  | 500                                                      | ELXV101E□□330MJ16S |
|             | 39          | 8×20                  | 0.27                       | 0.74  | 490                                                      | ELXV101E□□390MH20D |
|             | 56          | 10×20                 | 0.26                       | 0.70  | 620                                                      | ELXV101E□□560MJ20S |
|             | 68          | 10×25                 | 0.19                       | 0.52  | 795                                                      | ELXV101E□□680MJ25S |
|             | 100         | 10×30                 | 0.15                       | 0.41  | 955                                                      | ELXV101E□□101MJ30S |
|             | 100         | 12.5×20               | 0.15                       | 0.41  | 890                                                      | ELXV101E□□101MK20S |
|             | 120         | 12.5×25               | 0.11                       | 0.30  | 1,040                                                    | ELXV101E□□121MK25S |
|             | 180         | 12.5×30               | 0.094                      | 0.26  | 1,270                                                    | ELXV101E□□181MK30S |
|             | 180         | 16×20                 | 0.11                       | 0.30  | 1,240                                                    | ELXV101E□□181ML20S |
|             | 220         | 12.5×35               | 0.087                      | 0.24  | 1,450                                                    | ELXV101E□□221MK35S |
|             | 220         | 16×25                 | 0.081                      | 0.22  | 1,440                                                    | ELXV101E□□221ML25S |
|             | 270         | 12.5×40               | 0.060                      | 0.17  | 1,610                                                    | ELXV101E□□271MK40S |
|             | 270         | 18×20                 | 0.085                      | 0.23  | 1,450                                                    | ELXV101E□□271MM20S |
|             | 330         | 16×30                 | 0.058                      | 0.16  | 1,790                                                    | ELXV101E□□331ML30S |
|             | 330         | 18×25                 | 0.070                      | 0.19  | 1,650                                                    | ELXV101E□□331MM25S |
|             | 390         | 16×35                 | 0.052                      | 0.14  | 2,000                                                    | ELXV101E□□391ML35S |
|             | 390         | 18×30                 | 0.058                      | 0.16  | 1,850                                                    | ELXV101E□□391MM30S |
|             | 470         | 16×40                 | 0.041                      | 0.11  | 2,200                                                    | ELXV101E□□471ML40S |
|             | 560         | 18×35                 | 0.052                      | 0.14  | 1,990                                                    | ELXV101E□□561MM35S |
|             | 680         | 18×40                 | 0.041                      | 0.11  | 2,370                                                    | ELXV101E□□681MM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Rated voltage<br>(Vdc) | Case size<br>φD (mm) | Frequency (Hz) |      |      |      | Rated voltage<br>(Vdc) | Case size<br>φD (mm) | Frequency (Hz) |      |      |      |
|------------------------|----------------------|----------------|------|------|------|------------------------|----------------------|----------------|------|------|------|
|                        |                      | 120            | 1k   | 10k  | 100k |                        |                      | 120            | 1k   | 10k  | 100k |
| 6.3 & 10               | 5 to 8               | 0.65           | 0.83 | 0.95 | 1.00 | 35 & 50                | 5 to 8               | 0.40           | 0.66 | 0.85 | 1.00 |
|                        | 10 & 12.5            | 0.70           | 0.85 | 0.96 | 1.00 |                        | 10 & 12.5            | 0.50           | 0.73 | 0.89 | 1.00 |
|                        | 16 & 18              | 0.85           | 0.92 | 0.97 | 1.00 |                        | 16 & 18              | 0.60           | 0.81 | 0.94 | 1.00 |
| 16 & 25                | 5 to 8               | 0.55           | 0.76 | 0.91 | 1.00 | 63 to 100              | 5 to 8               | 0.20           | 0.55 | 0.80 | 1.00 |
|                        | 10 & 12.5            | 0.65           | 0.83 | 0.93 | 1.00 |                        | 10 & 12.5            | 0.35           | 0.65 | 0.85 | 1.00 |
|                        | 16 & 18              | 0.70           | 0.87 | 0.96 | 1.00 |                        | 16 & 18              | 0.50           | 0.75 | 0.90 | 1.00 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.

When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

160 to 400V<sub>dc</sub> long life, 105°C

New!

KXJ Series

- Downsized and Longer life from current KXG series
- Endurance with ripple current : 10,000 to 12,000 hours at 105°C
- Rated voltage range : 160 to 400V<sub>dc</sub>, Capacitance range : 10 to 680μF
- For electronic ballast circuits and other long life required applications
- Non solvent-proof type
- RoHS Compliant

KXJ

Downsized

KXG

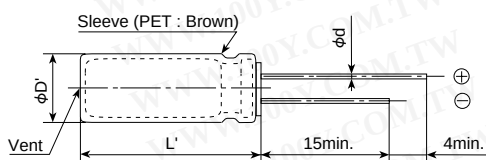
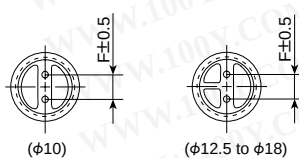


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                        |                                      |                 |                  |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------|------------------|
| Category                                               | —40 to +105°C (160 to 400V <sub>dc</sub> )                                                                                                                                                                             |                                      |                 |                  |
| Temperature Range                                      |                                                                                                                                                                                                                        |                                      |                 |                  |
| Rated Voltage Range                                    | 160 to 400V <sub>dc</sub>                                                                                                                                                                                              |                                      |                 |                  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                              |                                      |                 |                  |
| Leakage Current                                        |                                                                                                                                                                                                                        | After 1 minute                       | After 5 minutes |                  |
|                                                        | CV≤1000                                                                                                                                                                                                                | I=0.1CV+40                           | I=0.03CV+15     |                  |
|                                                        | CV>1000                                                                                                                                                                                                                | I=0.04CV+100                         | I=0.02CV+25     |                  |
|                                                        | Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                                                                                              |                                      |                 | (at 20°C)        |
|                                                        |                                                                                                                                                                                                                        |                                      |                 |                  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                       | 160 to 250V                          | 350 & 400V      | (at 20°C, 120Hz) |
|                                                        | tanδ (Max.)                                                                                                                                                                                                            | 0.20                                 | 0.24            |                  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                       | 160 to 250V                          | 350 & 400V      | (at 120Hz)       |
|                                                        | Z(−25°C)/Z(+20°C)                                                                                                                                                                                                      | 3                                    | 5               |                  |
|                                                        | Z(−40°C)/Z(+20°C)                                                                                                                                                                                                      | 6                                    | 6               |                  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 12,000 hours (10,000 hours for 20L max.) at 105°C. |                                      |                 |                  |
|                                                        | Capacitance change                                                                                                                                                                                                     | ≤±20% of the initial value           |                 |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                            | ≤200% of the initial specified value |                 |                  |
|                                                        | Leakage current                                                                                                                                                                                                        | ≤The initial specified value         |                 |                  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours at 105°C without voltage applied.                                                          |                                      |                 |                  |
|                                                        | Capacitance change                                                                                                                                                                                                     | ≤±20% of the initial value           |                 |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                            | ≤200% of the initial specified value |                 |                  |
|                                                        | Leakage current                                                                                                                                                                                                        | ≤500% of the initial specified value |                 |                  |

## ◆DIMENSIONS [mm]

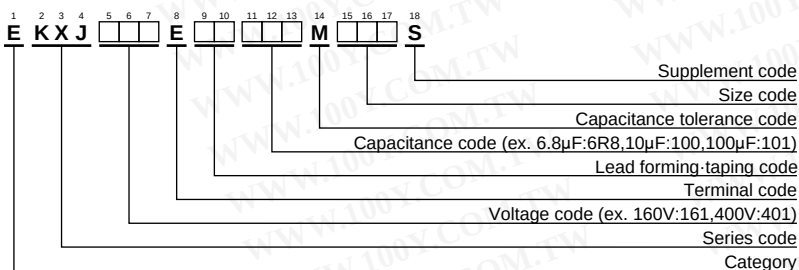
- Terminal Code : E



Gas escaped end seal

| φD  | 10         | 12.5 | 14.5 | 16  | 18  |
|-----|------------|------|------|-----|-----|
| φd  | 0.6        | 0.6  | 0.8  | 0.8 | 0.8 |
| F   | 5.0        | 5.0  | 7.5  | 7.5 | 7.5 |
| φD' | φD+0.5max. |      |      |     |     |
| L'  | L+1.5max.  |      |      |     |     |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

160 to 400V<sub>dc</sub> long life, 105°C

New!  
**KXJ** Series

勝特力材料 886-3-5753170  
 胜特力电子(上海) 86-21-54151736  
 胜特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size ϕDXL(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size ϕDXL(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|-----------------------------------------|--------------------|----------|----------|--------------------|------|-----------------------------------------|--------------------|
| 160      | 39       | 10×16              | 0.20 | 245                                     | EKXJ161E□□390MJ16S | 200      | 560      | 18×50              | 0.20 | 1,945                                   | EKXJ201E□□561MM50S |
|          | 56       | 10×20              | 0.20 | 315                                     | EKXJ161E□□560MJ20S |          | 27       | 10×16              | 0.20 | 200                                     | EKXJ221E□□270MJ16S |
|          | 68       | 10×25              | 0.20 | 380                                     | EKXJ161E□□680MJ25S |          | 39       | 10×20              | 0.20 | 265                                     | EKXJ221E□□390MJ20S |
|          | 82       | 10×30              | 0.20 | 445                                     | EKXJ161E□□820MJ30S |          | 47       | 10×25              | 0.20 | 315                                     | EKXJ221E□□470MJ25S |
|          | 100      | 12.5×20            | 0.20 | 575                                     | EKXJ161E□□101MK20S |          | 56       | 10×30              | 0.20 | 370                                     | EKXJ221E□□560MJ30S |
|          | 120      | 10×35              | 0.20 | 570                                     | EKXJ161E□□121MJ35S |          | 68       | 12.5×20            | 0.20 | 475                                     | EKXJ221E□□680MK20S |
|          | 120      | 12.5×25            | 0.20 | 680                                     | EKXJ161E□□121MK25S |          | 82       | 10×35              | 0.20 | 470                                     | EKXJ221E□□820MJ35S |
|          | 120      | 14.5×20            | 0.20 | 675                                     | EKXJ161E□□121MU20S |          | 82       | 12.5×25            | 0.20 | 565                                     | EKXJ221E□□820MK25S |
|          | 150      | 10×45              | 0.20 | 695                                     | EKXJ161E□□151MJ45S |          | 82       | 14.5×20            | 0.20 | 555                                     | EKXJ221E□□820MU20S |
|          | 150      | 12.5×30            | 0.20 | 810                                     | EKXJ161E□□151MK30S |          | 100      | 10×45              | 0.20 | 565                                     | EKXJ221E□□101MJ45S |
|          | 150      | 16×20              | 0.20 | 780                                     | EKXJ161E□□151ML20S |          | 100      | 12.5×30            | 0.20 | 660                                     | EKXJ221E□□101MK30S |
|          | 180      | 10×50              | 0.20 | 785                                     | EKXJ161E□□181MJ50S |          | 100      | 16×20              | 0.20 | 635                                     | EKXJ221E□□101ML20S |
|          | 180      | 12.5×35            | 0.20 | 940                                     | EKXJ161E□□181MK35S |          | 120      | 10×50              | 0.20 | 645                                     | EKXJ221E□□121MJ50S |
|          | 180      | 14.5×25            | 0.20 | 890                                     | EKXJ161E□□181MU25S |          | 120      | 12.5×35            | 0.20 | 770                                     | EKXJ221E□□121MK35S |
|          | 220      | 12.5×40            | 0.20 | 1,075                                   | EKXJ161E□□221MK40S |          | 120      | 14.5×25            | 0.20 | 725                                     | EKXJ221E□□121MU25S |
|          | 220      | 16×25              | 0.20 | 1,020                                   | EKXJ161E□□221ML25S |          | 150      | 12.5×40            | 0.20 | 890                                     | EKXJ221E□□151MK40S |
|          | 220      | 18×20              | 0.20 | 990                                     | EKXJ161E□□221MM20S |          | 150      | 16×25              | 0.20 | 845                                     | EKXJ221E□□151ML25S |
|          | 270      | 12.5×45            | 0.20 | 1,230                                   | EKXJ161E□□271MK45S |          | 150      | 18×20              | 0.20 | 815                                     | EKXJ221E□□151MM20S |
|          | 270      | 14.5×31.5          | 0.20 | 1,170                                   | EKXJ161E□□271MUN3S |          | 180      | 12.5×45            | 0.20 | 1,005                                   | EKXJ221E□□181MK45S |
|          | 330      | 12.5×50            | 0.20 | 1,400                                   | EKXJ161E□□331MK50S |          | 180      | 14.5×31.5          | 0.20 | 955                                     | EKXJ221E□□181MUN3S |
|          | 330      | 14.5×40            | 0.20 | 1,385                                   | EKXJ161E□□331MU40S |          | 180      | 18×25              | 0.20 | 950                                     | EKXJ221E□□181MM25S |
|          | 330      | 16×31.5            | 0.20 | 1,350                                   | EKXJ161E□□331MLN3S |          | 220      | 12.5×50            | 0.20 | 1,145                                   | EKXJ221E□□221MK50S |
|          | 330      | 18×25              | 0.20 | 1,290                                   | EKXJ161E□□331MM25S |          | 220      | 14.5×35.5          | 0.20 | 1,095                                   | EKXJ221E□□221MUP1S |
|          | 390      | 14.5×45            | 0.20 | 1,545                                   | EKXJ161E□□391MU45S |          | 270      | 14.5×45            | 0.20 | 1,285                                   | EKXJ221E□□271MU45S |
|          | 390      | 16×40              | 0.20 | 1,545                                   | EKXJ161E□□391ML40S |          | 270      | 16×40              | 0.20 | 1,285                                   | EKXJ221E□□271ML40S |
|          | 390      | 18×31.5            | 0.20 | 1,515                                   | EKXJ161E□□391MMN3S |          | 270      | 18×31.5            | 0.20 | 1,260                                   | EKXJ221E□□271MMN3S |
| 200      | 470      | 14.5×50            | 0.20 | 1,735                                   | EKXJ161E□□471MU50S | 250      | 330      | 16×50              | 0.20 | 1,480                                   | EKXJ221E□□331ML50S |
|          | 470      | 16×45              | 0.20 | 1,730                                   | EKXJ161E□□471ML45S |          | 330      | 18×35.5            | 0.20 | 1,440                                   | EKXJ221E□□331MMP1S |
|          | 470      | 18×35.5            | 0.20 | 1,715                                   | EKXJ161E□□471MMP1S |          | 390      | 18×45              | 0.20 | 1,620                                   | EKXJ221E□□391MM45S |
|          | 560      | 16×50              | 0.20 | 1,920                                   | EKXJ161E□□561ML50S |          | 470      | 18×50              | 0.20 | 1,785                                   | EKXJ221E□□471MM50S |
|          | 560      | 18×40              | 0.20 | 1,905                                   | EKXJ161E□□561MM40S |          | 22       | 10×16              | 0.20 | 185                                     | EKXJ251E□□220MJ16S |
|          | 680      | 18×50              | 0.20 | 2,145                                   | EKXJ161E□□681MM50S |          | 33       | 10×20              | 0.20 | 240                                     | EKXJ251E□□330MJ20S |
|          | 27       | 10×16              | 0.20 | 200                                     | EKXJ201E□□270MJ16S |          | 39       | 10×25              | 0.20 | 285                                     | EKXJ251E□□390MJ25S |
|          | 47       | 10×20              | 0.20 | 290                                     | EKXJ201E□□470MJ20S |          | 47       | 10×30              | 0.20 | 340                                     | EKXJ251E□□470MJ30S |
|          | 56       | 10×25              | 0.20 | 345                                     | EKXJ201E□□560MJ25S |          | 56       | 12.5×20            | 0.20 | 430                                     | EKXJ251E□□560MK20S |
|          | 68       | 10×30              | 0.20 | 405                                     | EKXJ201E□□680MJ30S |          | 68       | 10×35              | 0.20 | 430                                     | EKXJ251E□□680MJ35S |
|          | 68       | 12.5×20            | 0.20 | 475                                     | EKXJ201E□□680MK20S |          | 68       | 12.5×25            | 0.20 | 515                                     | EKXJ251E□□680MK25S |
|          | 82       | 10×35              | 0.20 | 470                                     | EKXJ201E□□820MJ35S |          | 68       | 14.5×20            | 0.20 | 505                                     | EKXJ251E□□680MU20S |
|          | 100      | 10×40              | 0.20 | 545                                     | EKXJ201E□□101MJ40S |          | 82       | 10×45              | 0.20 | 515                                     | EKXJ251E□□820MJ45S |
|          | 100      | 12.5×25            | 0.20 | 625                                     | EKXJ201E□□101MK25S |          | 82       | 12.5×30            | 0.20 | 600                                     | EKXJ251E□□820MK30S |
|          | 100      | 14.5×20            | 0.20 | 615                                     | EKXJ201E□□101MU20S |          | 82       | 16×20              | 0.20 | 575                                     | EKXJ251E□□820ML20S |
|          | 120      | 10×45              | 0.20 | 620                                     | EKXJ201E□□121MJ45S |          | 100      | 10×50              | 0.20 | 585                                     | EKXJ251E□□101MJ50S |
|          | 120      | 12.5×30            | 0.20 | 725                                     | EKXJ201E□□121MK30S |          | 100      | 12.5×35            | 0.20 | 700                                     | EKXJ251E□□101MK35S |
|          | 120      | 16×20              | 0.20 | 695                                     | EKXJ201E□□121ML20S |          | 100      | 14.5×25            | 0.20 | 665                                     | EKXJ251E□□101MU25S |
|          | 150      | 10×50              | 0.20 | 720                                     | EKXJ201E□□151MJ50S |          | 120      | 12.5×40            | 0.20 | 795                                     | EKXJ251E□□121MK40S |
|          | 150      | 12.5×35            | 0.20 | 860                                     | EKXJ201E□□151MK35S |          | 120      | 16×25              | 0.20 | 755                                     | EKXJ251E□□121ML25S |
|          | 150      | 14.5×25            | 0.20 | 810                                     | EKXJ201E□□151MU25S |          | 120      | 18×20              | 0.20 | 730                                     | EKXJ251E□□121MM20S |
|          | 150      | 18×20              | 0.20 | 815                                     | EKXJ201E□□151MM20S |          | 150      | 12.5×45            | 0.20 | 920                                     | EKXJ251E□□151MK45S |
|          | 180      | 12.5×40            | 0.20 | 975                                     | EKXJ201E□□181MK40S |          | 150      | 14.5×31.5          | 0.20 | 870                                     | EKXJ251E□□151MUN3S |
|          | 180      | 14.5×31.5          | 0.20 | 955                                     | EKXJ201E□□181MUN3S |          | 150      | 18×25              | 0.20 | 870                                     | EKXJ251E□□151MM25S |
|          | 180      | 16×25              | 0.20 | 925                                     | EKXJ201E□□181ML25S |          | 180      | 12.5×50            | 0.20 | 1,035                                   | EKXJ251E□□181MK50S |
|          | 220      | 12.5×45            | 0.20 | 1,110                                   | EKXJ201E□□221MK45S |          | 180      | 14.5×40            | 0.20 | 1,020                                   | EKXJ251E□□181MU40S |
|          | 220      | 14.5×35.5          | 0.20 | 1,095                                   | EKXJ201E□□221MUP1S |          | 180      | 16×31.5            | 0.20 | 995                                     | EKXJ251E□□181MLN3S |
|          | 220      | 16×31.5            | 0.20 | 1,100                                   | EKXJ201E□□221MLN3S |          | 220      | 14.5×45            | 0.20 | 1,160                                   | EKXJ251E□□221MU45S |
|          | 220      | 18×25              | 0.20 | 1,050                                   | EKXJ201E□□221MM25S |          | 220      | 16×40              | 0.20 | 1,160                                   | EKXJ251E□□221ML40S |
| 200      | 270      | 14.5×40            | 0.20 | 1,250                                   | EKXJ201E□□271MU40S | 350      | 220      | 18×31.5            | 0.20 | 1,135                                   | EKXJ251E□□221MMN3S |
|          | 270      | 16×35.5            | 0.20 | 1,250                                   | EKXJ201E□□271MLP1S |          | 270      | 16×50              | 0.20 | 1,330                                   | EKXJ251E□□271ML50S |
|          | 330      | 14.5×50            | 0.20 | 1,450                                   | EKXJ201E□□331MU50S |          | 270      | 18×35.5            | 0.20 | 1,300                                   | EKXJ251E□□271MMP1S |
|          | 330      | 16×40              | 0.20 | 1,425                                   | EKXJ201E□□331ML40S |          | 330      | 18×45              | 0.20 | 1,485                                   | EKXJ251E□□331MM45S |
|          | 330      | 18×31.5            | 0.20 | 1,395                                   | EKXJ201E□□331MMN3S |          | 390      | 18×50              | 0.20 | 1,625                                   | EKXJ251E□□391MM50S |
|          | 390      | 16×50              | 0.20 | 1,600                                   | EKXJ201E□□391ML50S |          | 12       | 10×16              | 0.24 | 135                                     | EKXJ351E□□120MJ16S |
|          | 390      | 18×40              | 0.20 | 1,590                                   | EKXJ201E□□391MM40S |          | 18       | 10×20              | 0.24 | 180                                     | EKXJ351E□□180MJ20S |
|          | 470      | 18×45              | 0.20 | 1,770                                   | EKXJ201E□□471MM45S |          | 22       | 10×25              | 0.24 | 215                                     | EKXJ351E□□220MJ25S |

□□ : Lead forming / Taping code



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

160 to 400V<sub>dc</sub> long life, 105°C

New!  
**KXJ** Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|-----------------------------------------|--------------------|----------|----------|--------------------|------|-----------------------------------------|--------------------|
| 350      | 27       | 10×30              | 0.24 | 255                                     | EKXJ351E□□270MJ30S | 400      | 10       | 10×16              | 0.24 | 125                                     | EKXJ401E□□100MJ16S |
|          | 33       | 12.5×20            | 0.24 | 330                                     | EKXJ351E□□330MK20S |          | 15       | 10×20              | 0.24 | 165                                     | EKXJ401E□□150MJ20S |
|          | 39       | 10×35              | 0.24 | 325                                     | EKXJ351E□□390MJ35S |          | 18       | 10×25              | 0.24 | 195                                     | EKXJ401E□□180MJ25S |
|          | 47       | 10×40              | 0.24 | 375                                     | EKXJ351E□□470MJ40S |          | 22       | 10×30              | 0.24 | 230                                     | EKXJ401E□□220MJ30S |
|          | 47       | 12.5×25            | 0.24 | 425                                     | EKXJ351E□□470MK25S |          | 27       | 12.5×20            | 0.24 | 300                                     | EKXJ401E□□270MK20S |
|          | 47       | 14.5×20            | 0.24 | 420                                     | EKXJ351E□□470MU20S |          | 33       | 10×35              | 0.24 | 300                                     | EKXJ401E□□330MJ35S |
|          | 56       | 12.5×30            | 0.24 | 495                                     | EKXJ351E□□560MK30S |          | 39       | 10×40              | 0.24 | 340                                     | EKXJ401E□□390MJ40S |
|          | 56       | 16×20              | 0.24 | 475                                     | EKXJ351E□□560ML20S |          | 39       | 12.5×25            | 0.24 | 390                                     | EKXJ401E□□390MK25S |
|          | 68       | 10×50              | 0.24 | 485                                     | EKXJ351E□□680MJ50S |          | 39       | 14.5×20            | 0.24 | 385                                     | EKXJ401E□□390MU20S |
|          | 68       | 12.5×35            | 0.24 | 580                                     | EKXJ351E□□680MK35S |          | 47       | 16×20              | 0.24 | 435                                     | EKXJ401E□□470ML20S |
|          | 68       | 14.5×25            | 0.24 | 545                                     | EKXJ351E□□680MU25S |          | 56       | 10×50              | 0.24 | 440                                     | EKXJ401E□□560MJ50S |
|          | 68       | 18×20              | 0.24 | 550                                     | EKXJ351E□□680MM20S |          | 56       | 12.5×35            | 0.24 | 525                                     | EKXJ401E□□560MK35S |
|          | 82       | 12.5×40            | 0.24 | 655                                     | EKXJ351E□□820MK40S |          | 56       | 14.5×25            | 0.24 | 495                                     | EKXJ401E□□560MU25S |
|          | 82       | 14.5×31.5          | 0.24 | 645                                     | EKXJ351E□□820MUN3S |          | 56       | 18×20              | 0.24 | 500                                     | EKXJ401E□□560MM20S |
|          | 100      | 12.5×50            | 0.24 | 770                                     | EKXJ351E□□101MK50S |          | 68       | 12.5×40            | 0.24 | 600                                     | EKXJ401E□□680MK40S |
|          | 100      | 14.5×35.5          | 0.24 | 740                                     | EKXJ351E□□101MUP1S |          | 68       | 14.5×31.5          | 0.24 | 585                                     | EKXJ401E□□680MUN3S |
|          | 100      | 16×31.5            | 0.24 | 740                                     | EKXJ351E□□101MLN3S |          | 82       | 12.5×50            | 0.24 | 700                                     | EKXJ401E□□820MK50S |
|          | 100      | 18×25              | 0.24 | 710                                     | EKXJ351E□□101MM25S |          | 82       | 14.5×35.5          | 0.24 | 670                                     | EKXJ401E□□820MUP1S |
|          | 120      | 14.5×40            | 0.24 | 835                                     | EKXJ351E□□121MU40S |          | 82       | 16×31.5            | 0.24 | 670                                     | EKXJ401E□□820MLN3S |
|          | 120      | 16×35.5            | 0.24 | 830                                     | EKXJ351E□□121MLP1S |          | 82       | 18×25              | 0.24 | 640                                     | EKXJ401E□□820MM25S |
|          | 120      | 18×31.5            | 0.24 | 840                                     | EKXJ351E□□121MMN3S |          | 100      | 14.5×40            | 0.24 | 760                                     | EKXJ401E□□101MU40S |
| 350      | 150      | 14.5×50            | 0.24 | 980                                     | EKXJ351E□□151MU50S |          | 100      | 16×35.5            | 0.24 | 760                                     | EKXJ401E□□101MLP1S |
|          | 150      | 16×45              | 0.24 | 975                                     | EKXJ351E□□151ML45S |          | 120      | 14.5×50            | 0.24 | 875                                     | EKXJ401E□□121MU50S |
|          | 150      | 18×35.5            | 0.24 | 970                                     | EKXJ351E□□151MMP1S |          | 120      | 16×45              | 0.24 | 875                                     | EKXJ401E□□121ML45S |
|          | 180      | 16×50              | 0.24 | 1,090                                   | EKXJ351E□□181ML50S |          | 120      | 18×31.5            | 0.24 | 840                                     | EKXJ401E□□121MMN3S |
|          | 180      | 18×40              | 0.24 | 1,080                                   | EKXJ351E□□181MM40S |          | 150      | 16×50              | 0.24 | 995                                     | EKXJ401E□□151ML50S |
|          | 220      | 18×50              | 0.24 | 1,220                                   | EKXJ351E□□221MM50S |          | 150      | 18×40              | 0.24 | 985                                     | EKXJ401E□□151MM40S |
|          |          |                    |      |                                         |                    |          | 180      | 18×50              | 0.24 | 1,105                                   | EKXJ401E□□181MM50S |
|          |          |                    |      |                                         |                    |          |          |                    |      |                                         |                    |
|          |          |                    |      |                                         |                    |          |          |                    |      |                                         |                    |
|          |          |                    |      |                                         |                    |          |          |                    |      |                                         |                    |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Frequency (Hz)  | 120 | 1k   | 10k  | 100k |
|-----------------|-----|------|------|------|
| Less than 100μF | 1.0 | 1.75 | 2.25 | 2.50 |
| 100μF or more   | 1.0 | 1.67 | 1.75 | 2.25 |

The ripple current gives aluminum electrolytic capacitors higher internal heat, the increased temperature accelerate the deterioration of the capacitors.

The lifetime is approximately halved with every 5°C rise.

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 胜特力电子(上海) 86-21-54151736  
 胜特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

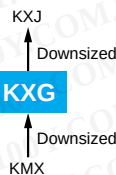


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

160 to 450V<sub>dc</sub> long life, 105°C

## KXG Series

- Downsized from current KM series
- For electronic ballast circuits and other long life required applications
- Endurance with ripple current : 8,000 to 10,000 hours at 105°C
- Non solvent-proof type
- RoHS Compliant

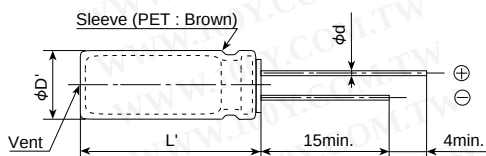
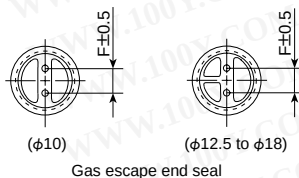


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                |                                      |                 |                      |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------|----------------------|
| Category                                               | —40 to +105℃ (160 to 400V <sub>dc</sub> ) —25 to+105℃ (450V <sub>dc</sub> )                                                                                                                                    |                                      |                 |                      |
| Temperature Range                                      |                                                                                                                                                                                                                |                                      |                 |                      |
| Rated Voltage Range                                    | 160 to 450V <sub>dc</sub>                                                                                                                                                                                      |                                      |                 |                      |
| Capacitance Tolerance                                  | ±20% (M) (at 20℃, 120Hz)                                                                                                                                                                                       |                                      |                 |                      |
| Leakage Current                                        |                                                                                                                                                                                                                | After 1 minute                       | After 5 minutes |                      |
|                                                        | CV≤1,000                                                                                                                                                                                                       | I=0.1CV+40                           | I=0.03CV+15     |                      |
|                                                        | CV>1,000                                                                                                                                                                                                       | I=0.04CV+100                         | I=0.02CV+25     |                      |
|                                                        | Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃)                                                                                                             |                                      |                 |                      |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                               | 160 to 250V                          | 350 & 400V      | 450V                 |
|                                                        | tanδ (Max.)                                                                                                                                                                                                    | 0.20                                 | 0.24            | 0.24 (at 20℃, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                               | 160 to 250V                          | 350 & 400V      | 450V                 |
|                                                        | Z(−25℃)/Z(+20℃)                                                                                                                                                                                                | 3                                    | 5               | 6                    |
|                                                        | Z(−40℃)/Z(+20℃)                                                                                                                                                                                                | 6                                    | 6               | — (at 120Hz)         |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied for 10,000 hours (8,000 hours for φ10) at 105℃. |                                      |                 |                      |
|                                                        | Capacitance change                                                                                                                                                                                             | ≤±20% of the initial value           |                 |                      |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                    | ≤200% of the initial specified value |                 |                      |
|                                                        | Leakage current                                                                                                                                                                                                | ≤The initial specified value         |                 |                      |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied.                                                   |                                      |                 |                      |
|                                                        | Capacitance change                                                                                                                                                                                             | ≤±20% of the initial value           |                 |                      |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                    | ≤200% of the initial specified value |                 |                      |
|                                                        | Leakage current                                                                                                                                                                                                | ≤500% of the initial specified value |                 |                      |

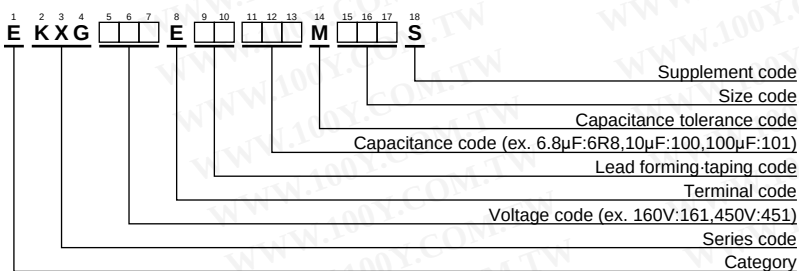
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| φD  | 10         | 12.5 | 16  | 18  |
|-----|------------|------|-----|-----|
| φd  | 0.6        | 0.6  | 0.8 | 0.8 |
| F   | 5.0        | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |      |     |     |
| L'  | L+1.5max.  |      |     |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

## ◆ RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) |      |      |      |
|------------------|----------------|------|------|------|
|                  | 120            | 1k   | 10k  | 100k |
| 6.8 to 82        | 1.0            | 1.75 | 2.25 | 2.50 |
| 100 to 330       | 1.0            | 1.67 | 1.75 | 2.25 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

160 to 450V<sub>dc</sub> long life, 105°C

KXG Series

## ◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tanδ | Rated ripple current(mArms/105°C) |        | Part No.           |
|--------------------------|-------------|-----------------------|------|-----------------------------------|--------|--------------------|
|                          |             |                       |      | 120Hz                             | 100kHz |                    |
| 160                      | 10          | 10 × 16               | 0.20 | 125                               | 315    | EKXG161E□□100MJ16S |
|                          | 22          | 10 × 20               | 0.20 | 200                               | 500    | EKXG161E□□220MJ20S |
|                          | 33          | 10 × 20               | 0.20 | 250                               | 625    | EKXG161E□□330MJ20S |
|                          | 47          | 10 × 20               | 0.20 | 300                               | 750    | EKXG161E□□470MJ20S |
|                          | 68          | 12.5 × 20             | 0.20 | 470                               | 1,175  | EKXG161E□□680MK20S |
|                          | 82          | 12.5 × 20             | 0.20 | 510                               | 1,275  | EKXG161E□□820MK20S |
|                          | 100         | 12.5 × 25             | 0.20 | 620                               | 1,395  | EKXG161E□□101MK25S |
|                          | 100         | 16 × 20               | 0.20 | 630                               | 1,420  | EKXG161E□□101ML20S |
|                          | 150         | 16 × 20               | 0.20 | 770                               | 1,735  | EKXG161E□□151ML20S |
|                          | 220         | 16 × 25               | 0.20 | 1,020                             | 2,295  | EKXG161E□□221ML25S |
| 200                      | 330         | 18 × 31.5             | 0.20 | 1,390                             | 3,130  | EKXG161E□□331MMN3S |
|                          | 10          | 10 × 16               | 0.20 | 125                               | 315    | EKXG201E□□100MJ16S |
|                          | 22          | 10 × 20               | 0.20 | 200                               | 500    | EKXG201E□□220MJ20S |
|                          | 33          | 10 × 20               | 0.20 | 260                               | 650    | EKXG201E□□330MJ20S |
|                          | 47          | 12.5 × 20             | 0.20 | 390                               | 975    | EKXG201E□□470MK20S |
|                          | 68          | 12.5 × 20             | 0.20 | 470                               | 1,175  | EKXG201E□□680MK20S |
|                          | 82          | 16 × 20               | 0.20 | 550                               | 1,375  | EKXG201E□□820ML20S |
|                          | 100         | 16 × 20               | 0.20 | 630                               | 1,420  | EKXG201E□□101ML20S |
|                          | 150         | 16 × 25               | 0.20 | 840                               | 1,890  | EKXG201E□□151ML25S |
|                          | 220         | 18 × 25               | 0.20 | 1,050                             | 2,365  | EKXG201E□□221MM25S |
| 250                      | 330         | 18 × 35.5             | 0.20 | 1,430                             | 3,220  | EKXG201E□□331MMP1S |
|                          | 10          | 10 × 20               | 0.20 | 140                               | 350    | EKXG251E□□100MJ20S |
|                          | 22          | 10 × 20               | 0.20 | 200                               | 500    | EKXG251E□□220MJ20S |
|                          | 33          | 12.5 × 20             | 0.20 | 320                               | 800    | EKXG251E□□330MK20S |
|                          | 47          | 12.5 × 20             | 0.20 | 390                               | 975    | EKXG251E□□470MK20S |
|                          | 68          | 16 × 20               | 0.20 | 520                               | 1,300  | EKXG251E□□680ML20S |
|                          | 82          | 16 × 20               | 0.20 | 550                               | 1,375  | EKXG251E□□820ML20S |
|                          | 100         | 16 × 25               | 0.20 | 680                               | 1,530  | EKXG251E□□101ML25S |
|                          | 150         | 18 × 25               | 0.20 | 860                               | 1,935  | EKXG251E□□151MM25S |
|                          | 220         | 18 × 31.5             | 0.20 | 1,130                             | 2,545  | EKXG251E□□221MMN3S |
| 350                      | 6.8         | 10 × 16               | 0.24 | 110                               | 275    | EKXG351E□□6R8MJ16S |
|                          | 10          | 10 × 20               | 0.24 | 140                               | 350    | EKXG351E□□100MJ20S |
|                          | 22          | 12.5 × 20             | 0.24 | 260                               | 650    | EKXG351E□□220MK20S |
|                          | 33          | 16 × 20               | 0.24 | 360                               | 900    | EKXG351E□□330ML20S |
|                          | 47          | 16 × 20               | 0.24 | 430                               | 1,075  | EKXG351E□□470ML20S |
|                          | 68          | 16 × 25               | 0.24 | 560                               | 1,400  | EKXG351E□□680ML25S |
|                          | 68          | 18 × 20               | 0.24 | 550                               | 1,375  | EKXG351E□□680MM20S |
|                          | 82          | 18 × 25               | 0.24 | 610                               | 1,525  | EKXG351E□□820MM25S |
|                          | 100         | 18 × 25               | 0.24 | 700                               | 1,575  | EKXG351E□□101MM25S |
|                          | 120         | 18 × 31.5             | 0.24 | 830                               | 1,865  | EKXG351E□□121MMN3S |
| 400                      | 150         | 18 × 35.5             | 0.24 | 960                               | 2,160  | EKXG351E□□151MMP1S |
|                          | 6.8         | 10 × 16               | 0.24 | 110                               | 275    | EKXG401E□□6R8MJ16S |
|                          | 10          | 10 × 20               | 0.24 | 140                               | 350    | EKXG401E□□100MJ20S |
|                          | 15          | 12.5 × 20             | 0.24 | 220                               | 550    | EKXG401E□□150MK20S |
|                          | 22          | 12.5 × 20             | 0.24 | 260                               | 650    | EKXG401E□□220MK20S |
|                          | 33          | 16 × 20               | 0.24 | 360                               | 900    | EKXG401E□□330ML20S |
|                          | 47          | 16 × 25               | 0.24 | 470                               | 1,175  | EKXG401E□□470ML25S |
|                          | 47          | 18 × 20               | 0.24 | 450                               | 1,125  | EKXG401E□□470MM20S |
|                          | 68          | 18 × 25               | 0.24 | 585                               | 1,465  | EKXG401E□□680MM25S |
|                          | 82          | 18 × 25               | 0.24 | 610                               | 1,525  | EKXG401E□□820MM25S |
| 450                      | 100         | 18 × 31.5             | 0.24 | 765                               | 1,720  | EKXG401E□□101MMN3S |
|                          | 120         | 18 × 35.5             | 0.24 | 865                               | 1,945  | EKXG401E□□121MMP1S |
|                          | 150         | 18 × 40               | 0.24 | 985                               | 2,215  | EKXG401E□□151MM40S |
|                          | 6.8         | 10 × 20               | 0.24 | 110                               | 275    | EKXG451E□□6R8MJ20S |
|                          | 10          | 12.5 × 20             | 0.24 | 180                               | 450    | EKXG451E□□100MK20S |
|                          | 15          | 12.5 × 25             | 0.24 | 240                               | 600    | EKXG451E□□150MK25S |
|                          | 22          | 16 × 20               | 0.24 | 290                               | 725    | EKXG451E□□220ML20S |
|                          | 33          | 16 × 25               | 0.24 | 390                               | 975    | EKXG451E□□330ML25S |
|                          | 33          | 18 × 20               | 0.24 | 380                               | 950    | EKXG451E□□330MM20S |
|                          | 47          | 18 × 25               | 0.24 | 480                               | 1,200  | EKXG451E□□470MM25S |
| 450                      | 68          | 18 × 31.5             | 0.24 | 630                               | 1,575  | EKXG451E□□680MMN3S |
|                          | 82          | 18 × 35.5             | 0.24 | 715                               | 1,785  | EKXG451E□□820MMP1S |
|                          | 100         | 18 × 40               | 0.24 | 800                               | 1,800  | EKXG451E□□101MM40S |

□□ : Lead forming / Taping code

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

φ20 &amp; 22 radial lead, 85°C

## SMH Series

- Downsized from current standard SMG series
- Endurance with ripple current : 2,000 hours at 85°C
- For input filtering of power supplies
- Non solvent-proof type
- RoHS Compliant

SMH

↑  
Downsized  
Higher ripple  
Low profile  
SMG

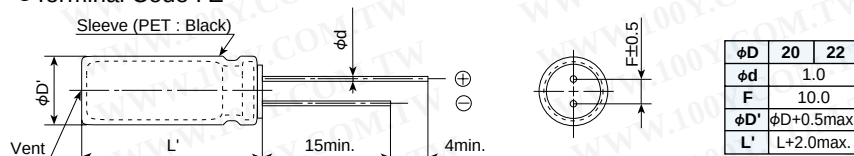


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                          |                                      |            |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------|
| Category                                               | -25 to +85°C                                                                                                                                                                             |                                      |            |
| Temperature Range                                      |                                                                                                                                                                                          |                                      |            |
| Rated Voltage Range                                    | 160 to 450V <sub>dc</sub>                                                                                                                                                                |                                      |            |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                |                                      |            |
| Leakage Current                                        | I=0.03CV or 3 mA, whichever is smaller.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 5 minutes)                           |                                      |            |
| Dissipation Factor (tanδ)                              | 0.15max. (at 20°C, 120Hz)                                                                                                                                                                |                                      |            |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                         | 160 to 250V                          | 400 & 450V |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                        | 4                                    | 6          |
| Endurance                                              | (at 120Hz)                                                                                                                                                                               |                                      |            |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 85°C. |                                      |            |
|                                                        | Capacitance change                                                                                                                                                                       | ≤±20% of the initial value           |            |
|                                                        | D.F. (tanδ)                                                                                                                                                                              | ≤200% of the initial specified value |            |
| Shelf Life                                             | Leakage current                                                                                                                                                                          | ≤The initial specified value         |            |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied.                            |                                      |            |
|                                                        | Capacitance change                                                                                                                                                                       | ≤±20% of the initial value           |            |
|                                                        | D.F. (tanδ)                                                                                                                                                                              | ≤200% of the initial specified value |            |
|                                                        | Leakage current                                                                                                                                                                          | ≤500% of the initial specified value |            |

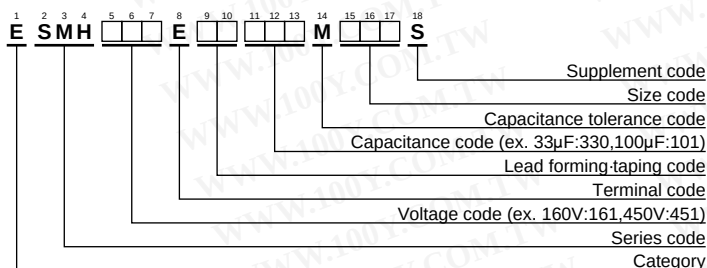
## ◆DIMENSIONS [mm]

- Terminal Code : E



\*Note : The snap-in forming type, RC-type, is available upon request, RC-type fits two φ2mm holes and 10.5mm spacing.

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

φ20 &amp; 22 radial lead, 85°C

SMH Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C, 120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|-------------------------------------------------------|--------------------|----------|----------|--------------------|------|-------------------------------------------------------|--------------------|
| 160      | 180      | 20×20              | 0.15 | 900                                                   | ESMH161E□□181MN20S | 250      | 330      | 22×35              | 0.15 | 1,710                                                 | ESMH251E□□331MP35S |
|          | 180      | 22×20              | 0.15 | 950                                                   | ESMH161E□□181MP20S |          | 390      | 20×45              | 0.15 | 1,930                                                 | ESMH251E□□391MN45S |
|          | 220      | 20×25              | 0.15 | 1,070                                                 | ESMH161E□□221MN25S |          | 390      | 22×40              | 0.15 | 2,000                                                 | ESMH251E□□391MP40S |
|          | 220      | 22×25              | 0.15 | 1,160                                                 | ESMH161E□□221MP25S |          | 470      | 20×50              | 0.15 | 2,190                                                 | ESMH251E□□471MN50S |
|          | 270      | 20×30              | 0.15 | 1,290                                                 | ESMH161E□□271MN30S |          | 470      | 22×45              | 0.15 | 2,290                                                 | ESMH251E□□471MP45S |
|          | 270      | 22×25              | 0.15 | 1,290                                                 | ESMH161E□□271MP25S | 400      | 47       | 20×20              | 0.15 | 480                                                   | ESMH401E□□470MN20S |
|          | 330      | 20×30              | 0.15 | 1,430                                                 | ESMH161E□□331MN30S |          | 56       | 20×25              | 0.15 | 570                                                   | ESMH401E□□560MN25S |
|          | 330      | 22×30              | 0.15 | 1,530                                                 | ESMH161E□□331MP30S |          | 56       | 22×25              | 0.15 | 620                                                   | ESMH401E□□560MP25S |
|          | 390      | 20×30              | 0.15 | 1,550                                                 | ESMH161E□□391MN30S |          | 68       | 20×25              | 0.15 | 640                                                   | ESMH401E□□680MN25S |
|          | 390      | 22×30              | 0.15 | 1,670                                                 | ESMH161E□□391MP30S |          | 68       | 22×25              | 0.15 | 690                                                   | ESMH401E□□680MP25S |
|          | 470      | 20×35              | 0.15 | 1,780                                                 | ESMH161E□□471MN35S |          | 82       | 20×30              | 0.15 | 750                                                   | ESMH401E□□820MN30S |
| 200      | 470      | 22×30              | 0.15 | 1,830                                                 | ESMH161E□□471MP30S |          | 82       | 22×25              | 0.15 | 780                                                   | ESMH401E□□820MP25S |
|          | 150      | 20×20              | 0.15 | 820                                                   | ESMH201E□□151MN20S |          | 100      | 20×35              | 0.15 | 870                                                   | ESMH401E□□101MN35S |
|          | 150      | 22×20              | 0.15 | 870                                                   | ESMH201E□□151MP20S |          | 100      | 22×30              | 0.15 | 900                                                   | ESMH401E□□101MP30S |
|          | 180      | 20×25              | 0.15 | 970                                                   | ESMH201E□□181MN25S |          | 120      | 20×40              | 0.15 | 1,020                                                 | ESMH401E□□121MN40S |
|          | 180      | 22×25              | 0.15 | 1,050                                                 | ESMH201E□□181MP25S |          | 120      | 22×35              | 0.15 | 1,030                                                 | ESMH401E□□121MP35S |
|          | 220      | 20×25              | 0.15 | 1,070                                                 | ESMH201E□□221MN25S |          | 150      | 20×45              | 0.15 | 1,200                                                 | ESMH401E□□151MN45S |
|          | 220      | 22×25              | 0.15 | 1,160                                                 | ESMH201E□□221MP25S |          | 150      | 22×40              | 0.15 | 1,240                                                 | ESMH401E□□151MP40S |
|          | 270      | 20×30              | 0.15 | 1,290                                                 | ESMH201E□□271MN30S |          | 180      | 20×50              | 0.15 | 1,360                                                 | ESMH401E□□181MN50S |
|          | 270      | 22×30              | 0.15 | 1,390                                                 | ESMH201E□□271MP30S |          | 180      | 22×45              | 0.15 | 1,410                                                 | ESMH401E□□181MP45S |
|          | 330      | 20×35              | 0.15 | 1,490                                                 | ESMH201E□□331MN35S |          | 220      | 22×50              | 0.15 | 1,590                                                 | ESMH401E□□221MP50S |
|          | 330      | 22×30              | 0.15 | 1,530                                                 | ESMH201E□□331MP30S | 450      | 33       | 20×20              | 0.15 | 400                                                   | ESMH451E□□330MN20S |
|          | 390      | 20×35              | 0.15 | 1,620                                                 | ESMH201E□□391MN35S |          | 47       | 20×25              | 0.15 | 520                                                   | ESMH451E□□470MN25S |
| 250      | 390      | 22×30              | 0.15 | 1,670                                                 | ESMH201E□□391MP30S |          | 47       | 22×25              | 0.15 | 570                                                   | ESMH451E□□470MP25S |
|          | 470      | 20×40              | 0.15 | 1,900                                                 | ESMH201E□□471MN40S |          | 56       | 20×30              | 0.15 | 620                                                   | ESMH451E□□560MN30S |
|          | 470      | 22×35              | 0.15 | 1,920                                                 | ESMH201E□□471MP35S |          | 56       | 22×25              | 0.15 | 650                                                   | ESMH451E□□560MP25S |
|          | 100      | 20×20              | 0.15 | 670                                                   | ESMH251E□□101MN20S |          | 68       | 20×35              | 0.15 | 720                                                   | ESMH451E□□680MN35S |
|          | 120      | 20×25              | 0.15 | 850                                                   | ESMH251E□□121MN25S |          | 68       | 22×30              | 0.15 | 690                                                   | ESMH451E□□680MP30S |
|          | 120      | 22×20              | 0.15 | 830                                                   | ESMH251E□□121MP20S |          | 82       | 20×35              | 0.15 | 790                                                   | ESMH451E□□820MN35S |
|          | 150      | 20×25              | 0.15 | 940                                                   | ESMH251E□□151MN25S |          | 82       | 22×30              | 0.15 | 800                                                   | ESMH451E□□820MP30S |
|          | 150      | 22×25              | 0.15 | 1,030                                                 | ESMH251E□□151MP25S |          | 100      | 20×40              | 0.15 | 920                                                   | ESMH451E□□101MN40S |
|          | 180      | 20×30              | 0.15 | 1,120                                                 | ESMH251E□□181MN30S |          | 100      | 22×35              | 0.15 | 940                                                   | ESMH451E□□101MP35S |
|          | 180      | 22×25              | 0.15 | 1,120                                                 | ESMH251E□□181MP25S |          | 120      | 20×45              | 0.15 | 1,070                                                 | ESMH451E□□121MN45S |
|          | 220      | 20×30              | 0.15 | 1,240                                                 | ESMH251E□□221MN30S |          | 120      | 22×40              | 0.15 | 1,110                                                 | ESMH451E□□121MP40S |
|          | 220      | 22×30              | 0.15 | 1,330                                                 | ESMH251E□□221MP30S |          | 150      | 20×50              | 0.15 | 1,240                                                 | ESMH451E□□151MN50S |
|          | 270      | 20×35              | 0.15 | 1,440                                                 | ESMH251E□□271MN35S |          | 150      | 22×45              | 0.15 | 1,290                                                 | ESMH451E□□151MP45S |
|          | 270      | 22×30              | 0.15 | 1,470                                                 | ESMH251E□□271MP30S |          | 180      | 22×50              | 0.15 | 1,440                                                 | ESMH451E□□181MP50S |
|          | 330      | 20×40              | 0.15 | 1,700                                                 | ESMH251E□□331MN40S |          |          |                    |      |                                                       |                    |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Frequency (Hz)            | 50   | 120  | 300  | 1k   | 10k  | 50k  |
|---------------------------|------|------|------|------|------|------|
| 160 to 250V <sub>dc</sub> | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| 400 & 450V <sub>dc</sub>  | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

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The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

φ20 &amp; 22 radial lead, 105°C

# KMH Series

- Radial lead type ranging from φ20×20 to φ22×50mm
- For input filtering of power supplies
- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent-proof type
- RoHS Compliant

KMh

Downsized  
Higher ripple

KMG

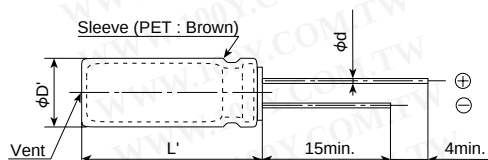
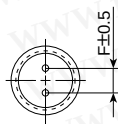


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                           |                                      |                           |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------|
| Category                                               | -25 to +105°C                                                                                                                                                                             |                                      |                           |
| Temperature Range                                      |                                                                                                                                                                                           |                                      |                           |
| Rated Voltage Range                                    | 160 to 450V <sub>dc</sub>                                                                                                                                                                 |                                      |                           |
| Capacitance Tolerance                                  | ±20% (M)                                                                                                                                                                                  |                                      | (at 20°C, 120Hz)          |
| Leakage Current                                        | I=0.03CV or 3 mA, whichever is smaller.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                      |                                      | (at 20°C after 5 minutes) |
| Dissipation Factor (tanδ)                              | 0.15max.                                                                                                                                                                                  |                                      | (at 20°C, 120Hz)          |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 160 to 250V                          | 400 & 450V                |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                         | 4                                    | 6                         |
| Endurance                                              |                                                                                                                                                                                           |                                      |                           |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C. |                                      |                           |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |                           |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |                           |
| Shelf Life                                             | Leakage current                                                                                                                                                                           | ≤The initial specified value         |                           |
|                                                        | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                            |                                      |                           |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |                           |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |                           |
|                                                        | Leakage current                                                                                                                                                                           | ≤500% of the initial specified value |                           |

## ◆DIMENSIONS [mm]

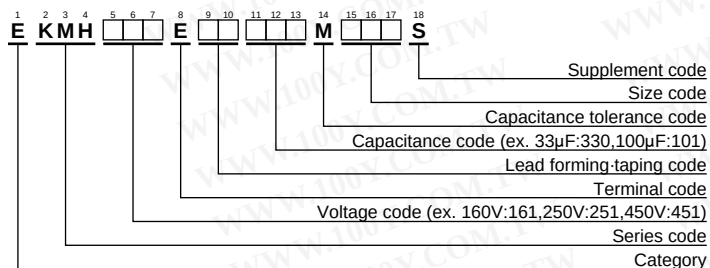
- Terminal Code : E



|     |            |    |
|-----|------------|----|
| φD  | 20         | 22 |
| φd  | 1.0        |    |
| F   | 10.0       |    |
| φD' | φD+0.5max. |    |
| L'  | L+2.0max.  |    |

\*Note : The snap-in forming type, RC-type, is available upon request, RC-type fits two φ2mm holes and 10.5mm spacing.

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

φ20 &amp; 22 radial lead, 105°C

KMH Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.          | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA rms/105°C, 120Hz) | Part No.          |
|----------|----------|--------------------|------|--------------------------------------------|-------------------|----------|----------|--------------------|------|--------------------------------------------|-------------------|
| 160      | 150      | 20×20              | 0.15 | 580                                        | EKM161E□□151MN20S | 250      | 220      | 22×30              | 0.15 | 950                                        | EKM251E□□221MP30S |
|          | 180      | 20×25              | 0.15 | 690                                        | EKM161E□□181MN25S |          | 270      | 20×40              | 0.15 | 1,090                                      | EKM251E□□271MN40S |
|          | 180      | 22×20              | 0.15 | 680                                        | EKM161E□□181MP20S |          | 270      | 22×35              | 0.15 | 1,140                                      | EKM251E□□271MP35S |
|          | 220      | 20×25              | 0.15 | 760                                        | EKM161E□□221MN25S |          | 330      | 20×45              | 0.15 | 1,260                                      | EKM251E□□331MN45S |
|          | 220      | 22×25              | 0.15 | 820                                        | EKM161E□□221MP25S |          | 330      | 22×40              | 0.15 | 1,300                                      | EKM251E□□331MP40S |
|          | 270      | 20×30              | 0.15 | 910                                        | EKM161E□□271MN30S |          | 390      | 20×50              | 0.15 | 1,410                                      | EKM251E□□391MN50S |
|          | 270      | 22×25              | 0.15 | 910                                        | EKM161E□□271MP25S |          | 390      | 22×45              | 0.15 | 1,490                                      | EKM251E□□391MP45S |
|          | 330      | 20×30              | 0.15 | 1,010                                      | EKM161E□□331MN30S |          | 470      | 22×50              | 0.15 | 1,650                                      | EKM251E□□471MP50S |
|          | 330      | 22×30              | 0.15 | 1,160                                      | EKM161E□□331MP30S | 400      | 33       | 20×20              | 0.15 | 290                                        | EKM401E□□330MN20S |
|          | 390      | 20×35              | 0.15 | 1,150                                      | EKM161E□□391MN35S |          | 47       | 22×20              | 0.15 | 370                                        | EKM401E□□470MP20S |
|          | 390      | 22×30              | 0.15 | 1,270                                      | EKM161E□□391MP30S |          | 56       | 20×25              | 0.15 | 410                                        | EKM401E□□560MN25S |
|          | 470      | 20×40              | 0.15 | 1,340                                      | EKM161E□□471MN40S |          | 68       | 20×30              | 0.15 | 490                                        | EKM401E□□680MN30S |
| 200      | 120      | 20×20              | 0.15 | 520                                        | EKM201E□□121MN20S |          | 68       | 22×25              | 0.15 | 510                                        | EKM401E□□680MP25S |
|          | 150      | 20×25              | 0.15 | 630                                        | EKM201E□□151MN25S |          | 100      | 20×35              | 0.15 | 620                                        | EKM401E□□101MN35S |
|          | 150      | 22×20              | 0.15 | 620                                        | EKM201E□□151MP20S |          | 100      | 22×30              | 0.15 | 640                                        | EKM401E□□101MP30S |
|          | 180      | 20×25              | 0.15 | 690                                        | EKM201E□□181MN25S |          | 120      | 20×40              | 0.15 | 720                                        | EKM401E□□121MN40S |
|          | 180      | 22×25              | 0.15 | 750                                        | EKM201E□□181MP25S |          | 120      | 22×35              | 0.15 | 730                                        | EKM401E□□121MP35S |
|          | 220      | 20×30              | 0.15 | 820                                        | EKM201E□□221MN30S |          | 150      | 20×45              | 0.15 | 850                                        | EKM401E□□151MN45S |
|          | 220      | 22×25              | 0.15 | 820                                        | EKM201E□□221MP25S |          | 150      | 22×40              | 0.15 | 880                                        | EKM401E□□151MP40S |
|          | 270      | 20×30              | 0.15 | 910                                        | EKM201E□□271MN30S |          | 180      | 20×50              | 0.15 | 960                                        | EKM401E□□181MN50S |
|          | 270      | 22×30              | 0.15 | 980                                        | EKM201E□□271MP30S |          | 180      | 22×45              | 0.15 | 990                                        | EKM401E□□181MP45S |
|          | 330      | 20×35              | 0.15 | 1,050                                      | EKM201E□□331MN35S |          | 220      | 22×50              | 0.15 | 1,130                                      | EKM401E□□221MP50S |
|          | 330      | 22×35              | 0.15 | 1,200                                      | EKM201E□□331MP35S | 450      | 33       | 20×25              | 0.15 | 310                                        | EKM451E□□330MN25S |
|          | 390      | 20×40              | 0.15 | 1,220                                      | EKM201E□□391MN40S |          | 47       | 22×25              | 0.15 | 420                                        | EKM451E□□470MP25S |
|          | 390      | 22×35              | 0.15 | 1,310                                      | EKM201E□□391MP35S |          | 56       | 20×30              | 0.15 | 440                                        | EKM451E□□560MN30S |
| 250      | 470      | 20×45              | 0.15 | 1,340                                      | EKM201E□□471MN45S |          | 68       | 20×35              | 0.15 | 510                                        | EKM451E□□680MN35S |
|          | 470      | 22×40              | 0.15 | 1,450                                      | EKM201E□□471MP40S |          | 68       | 22×30              | 0.15 | 520                                        | EKM451E□□680MP30S |
|          | 82       | 20×20              | 0.15 | 460                                        | EKM251E□□820MN20S |          | 82       | 20×40              | 0.15 | 600                                        | EKM451E□□820MN40S |
|          | 120      | 20×25              | 0.15 | 600                                        | EKM251E□□121MN25S |          | 82       | 22×35              | 0.15 | 600                                        | EKM451E□□820MP35S |
|          | 120      | 22×20              | 0.15 | 590                                        | EKM251E□□121MP20S |          | 100      | 20×45              | 0.15 | 690                                        | EKM451E□□101MN45S |
|          | 180      | 20×30              | 0.15 | 790                                        | EKM251E□□181MN30S |          | 100      | 22×40              | 0.15 | 710                                        | EKM451E□□101MP40S |
| 250      | 180      | 22×25              | 0.15 | 790                                        | EKM251E□□181MP25S |          | 120      | 20×50              | 0.15 | 780                                        | EKM451E□□121MN50S |
|          | 220      | 20×35              | 0.15 | 920                                        | EKM251E□□221MN35S |          | 120      | 22×45              | 0.15 | 810                                        | EKM451E□□121MP45S |
| 250      | 220      | 20×35              | 0.15 | 920                                        | EKM251E□□221MN35S |          | 150      | 22×50              | 0.15 | 930                                        | EKM451E□□151MP50S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Frequency (Hz)            | 50   | 120  | 300  | 1k   | 10k  | 50k  |
|---------------------------|------|------|------|------|------|------|
| 160 to 250V <sub>dc</sub> | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| 400 & 450V <sub>dc</sub>  | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

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The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

200 to 450V<sub>dc</sub>, Downsized, 105°C

# PAG Series

- Downsize, high ripple design (φ10 to 18)
- Rated voltage range : 200 to 450V<sub>dc</sub>, Capacitance range : 18 to 560μF
- Endurance with ripple current : 2,000 hours at 105°C
- Ideal for low profile power supply application
- Non solvent-proof type
- RoHS Compliant

PAG

↓  
Downsized  
Higher ripple  
KMG

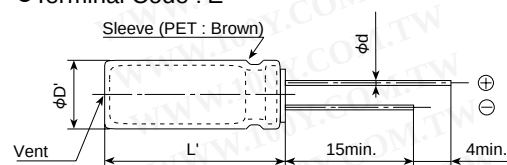
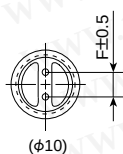
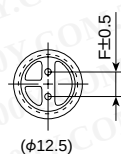


## ◆SPECIFICATIONS

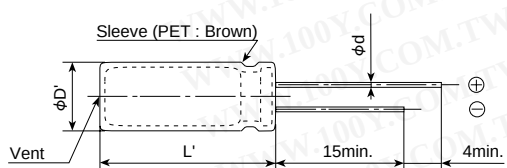
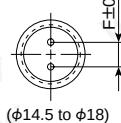
| Items                                                  | Characteristics                                                                                                                                                                         |                                      |      |                 |                      |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|-----------------|----------------------|
| Category                                               | —40 to +105℃ (200, 400V <sub>dc</sub> ) —25 to +105℃ (420, 450V <sub>dc</sub> )                                                                                                         |                                      |      |                 |                      |
| Temperature Range                                      |                                                                                                                                                                                         |                                      |      |                 |                      |
| Rated Voltage Range                                    | 200 to 450V <sub>dc</sub>                                                                                                                                                               |                                      |      |                 |                      |
| Capacitance Tolerance                                  | ±20% (M) (at 20℃, 120Hz)                                                                                                                                                                |                                      |      |                 |                      |
| Leakage Current                                        |                                                                                                                                                                                         | After 1 minute                       |      | After 5 minutes |                      |
|                                                        | CV≤1,000                                                                                                                                                                                | I=0.1CV+40                           |      | I=0.03CV+15     |                      |
|                                                        | CV>1,000                                                                                                                                                                                | I=0.04CV+100                         |      | I=0.02CV+25     |                      |
|                                                        | Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃)                                                                                      |                                      |      |                 |                      |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                        | 200V                                 | 400V | 420V            | 450V                 |
|                                                        | tanδ (Max.)                                                                                                                                                                             | 0.12                                 | 0.15 | 0.20            | 0.20 (at 20℃, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                        | 200V                                 | 400V | 420V            | 450V                 |
|                                                        | Z(−25℃)/Z(+20℃)                                                                                                                                                                         | 3                                    | 5    | 6               | 6                    |
|                                                        | Z(−40℃)/Z(+20℃)                                                                                                                                                                         | 6                                    | 6    | —               | — (at 120Hz)         |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105℃. |                                      |      |                 |                      |
|                                                        | Capacitance change                                                                                                                                                                      | ≤±20% of the initial value           |      |                 |                      |
|                                                        | D.F. (tanδ)                                                                                                                                                                             | ≤200% of the initial specified value |      |                 |                      |
|                                                        | Leakage current                                                                                                                                                                         | ≤The initial specified value         |      |                 |                      |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied.                            |                                      |      |                 |                      |
|                                                        | Capacitance change                                                                                                                                                                      | ≤±20% of the initial value           |      |                 |                      |
|                                                        | D.F. (tanδ)                                                                                                                                                                             | ≤200% of the initial specified value |      |                 |                      |
|                                                        | Leakage current                                                                                                                                                                         | ≤500% of the initial specified value |      |                 |                      |

## ◆DIMENSIONS [mm]

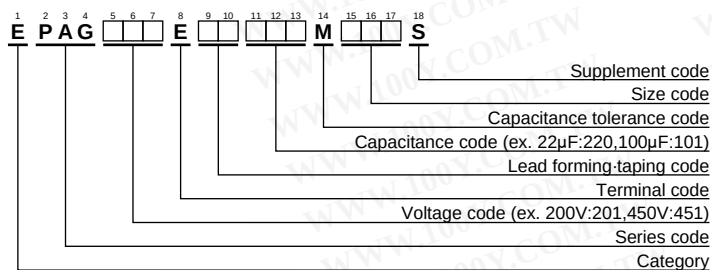
- Terminal Code : E



| φD  | 10          | 12.5 | 14.5 | 16  | 18  |
|-----|-------------|------|------|-----|-----|
| φd  | 0.6         | 0.6  | 0.8  | 0.8 | 0.8 |
| F   | 5.0         | 5.0  | 7.5  | 7.5 | 7.5 |
| φD' | φD+0.5 max. |      |      |     |     |
| L'  | L+2.0 max.  |      |      |     |     |



## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

200 to 450V<sub>dc</sub>, Downsized, 105°C

PAG Series

## ◆STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           | WV (V <sub>dc</sub> ) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           |
|-----------------------|----------|--------------------|------|-------------------------------------------------------|--------------------|-----------------------|----------|--------------------|------|-------------------------------------------------------|--------------------|
| 200                   | 82       | 10×30              | 0.12 | 440                                                   | EPAG201E□□820MJ30S | 420                   | 22       | 10×30              | 0.20 | 230                                                   | EPAG421E□□220MJ30S |
|                       | 100      | 10×35              | 0.12 | 510                                                   | EPAG201E□□101MJ35S |                       | 27       | 10×35              | 0.20 | 270                                                   | EPAG421E□□270MJ35S |
|                       | 120      | 10×40              | 0.12 | 590                                                   | EPAG201E□□121MJ40S |                       | 33       | 10×40              | 0.20 | 310                                                   | EPAG421E□□330MJ40S |
|                       | 150      | 12.5×30            | 0.12 | 650                                                   | EPAG201E□□151MK30S |                       | 39       | 12.5×30            | 0.20 | 330                                                   | EPAG421E□□390MK30S |
|                       | 180      | 12.5×35            | 0.12 | 750                                                   | EPAG201E□□181MK35S |                       | 47       | 12.5×35            | 0.20 | 390                                                   | EPAG421E□□470MK35S |
|                       | 220      | 12.5×40            | 0.12 | 830                                                   | EPAG201E□□221MK40S |                       | 56       | 12.5×40            | 0.20 | 430                                                   | EPAG421E□□560MK40S |
|                       | 220      | 14.5×30            | 0.12 | 830                                                   | EPAG201E□□221MU30S |                       | 56       | 14.5×30            | 0.20 | 430                                                   | EPAG421E□□560MU30S |
|                       | 270      | 14.5×35            | 0.12 | 960                                                   | EPAG201E□□271MU35S |                       | 68       | 14.5×35            | 0.20 | 510                                                   | EPAG421E□□680MU35S |
|                       | 270      | 16×30              | 0.12 | 960                                                   | EPAG201E□□271ML30S |                       | 68       | 16×30              | 0.20 | 510                                                   | EPAG421E□□680ML30S |
|                       | 330      | 16×35              | 0.12 | 1,100                                                 | EPAG201E□□331ML35S |                       | 82       | 14.5×40            | 0.20 | 570                                                   | EPAG421E□□820MU40S |
|                       | 330      | 18×30              | 0.12 | 1,100                                                 | EPAG201E□□331MM30S |                       | 82       | 16×35              | 0.20 | 570                                                   | EPAG421E□□820ML35S |
|                       | 390      | 16×40              | 0.12 | 1,240                                                 | EPAG201E□□391ML40S |                       | 100      | 16×40              | 0.20 | 610                                                   | EPAG421E□□101ML40S |
|                       | 390      | 18×35              | 0.12 | 1,240                                                 | EPAG201E□□391MM35S |                       | 100      | 18×30              | 0.20 | 610                                                   | EPAG421E□□101MM30S |
|                       | 470      | 18×40              | 0.12 | 1,390                                                 | EPAG201E□□471MM40S |                       | 120      | 18×35              | 0.20 | 690                                                   | EPAG421E□□121MM35S |
|                       | 560      | 18×45              | 0.12 | 1,560                                                 | EPAG201E□□561MM45S |                       | 150      | 18×40              | 0.20 | 790                                                   | EPAG421E□□151MM40S |
| 400                   | 27       | 10×30              | 0.15 | 260                                                   | EPAG401E□□270MJ30S | 450                   | 18       | 10×30              | 0.20 | 210                                                   | EPAG451E□□180MJ30S |
|                       | 33       | 10×35              | 0.15 | 300                                                   | EPAG401E□□330MJ35S |                       | 22       | 10×35              | 0.20 | 240                                                   | EPAG451E□□220MJ35S |
|                       | 39       | 10×40              | 0.15 | 340                                                   | EPAG401E□□390MJ40S |                       | 27       | 10×40              | 0.20 | 280                                                   | EPAG451E□□270MJ40S |
|                       | 47       | 12.5×30            | 0.15 | 370                                                   | EPAG401E□□470MK30S |                       | 33       | 12.5×30            | 0.20 | 310                                                   | EPAG451E□□330MK30S |
|                       | 56       | 12.5×35            | 0.15 | 420                                                   | EPAG401E□□560MK35S |                       | 39       | 12.5×35            | 0.20 | 350                                                   | EPAG451E□□390MK35S |
|                       | 68       | 12.5×40            | 0.15 | 480                                                   | EPAG401E□□680MK40S |                       | 47       | 12.5×40            | 0.20 | 390                                                   | EPAG451E□□470MK40S |
|                       | 68       | 14.5×30            | 0.15 | 480                                                   | EPAG401E□□680MU30S |                       | 47       | 14.5×30            | 0.20 | 390                                                   | EPAG451E□□470MU30S |
|                       | 82       | 14.5×35            | 0.15 | 530                                                   | EPAG401E□□820MU35S |                       | 56       | 14.5×35            | 0.20 | 440                                                   | EPAG451E□□560MU35S |
|                       | 100      | 14.5×40            | 0.15 | 580                                                   | EPAG401E□□101MU40S |                       | 56       | 16×30              | 0.20 | 440                                                   | EPAG451E□□560ML30S |
|                       | 100      | 16×30              | 0.15 | 580                                                   | EPAG401E□□101ML30S |                       | 68       | 14.5×40            | 0.20 | 500                                                   | EPAG451E□□680MU40S |
|                       | 120      | 16×35              | 0.15 | 670                                                   | EPAG401E□□121ML35S |                       | 68       | 16×35              | 0.20 | 500                                                   | EPAG451E□□680ML35S |
|                       | 120      | 18×30              | 0.15 | 670                                                   | EPAG401E□□121MM30S |                       | 82       | 16×40              | 0.20 | 550                                                   | EPAG451E□□820ML40S |
|                       | 150      | 16×40              | 0.15 | 770                                                   | EPAG401E□□151ML40S |                       | 82       | 18×30              | 0.20 | 550                                                   | EPAG451E□□820MM30S |
|                       | 150      | 18×35              | 0.15 | 770                                                   | EPAG401E□□151MM35S |                       | 100      | 18×35              | 0.20 | 650                                                   | EPAG451E□□101MM35S |
|                       | 180      | 18×40              | 0.15 | 880                                                   | EPAG401E□□181MM40S |                       | 120      | 18×40              | 0.20 | 740                                                   | EPAG451E□□121MM40S |
|                       | 220      | 18×45              | 0.15 | 1,000                                                 | EPAG401E□□221MM45S |                       | 150      | 18×45              | 0.20 | 810                                                   | EPAG451E□□151MM45S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|
| 18 to 82         |                | 1.00 | 1.50 | 1.75 | 1.80 |
| 100 to 560       |                | 1.00 | 1.30 | 1.40 | 1.50 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Overvoltage-proof design, 105°C

New!

KLJ Series

- No sparks against DC over-voltage
- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent-proof type
- Prescribe the ESR value
- RoHS Compliant

KLJ

Downsized

KLG

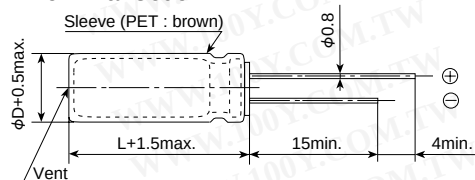
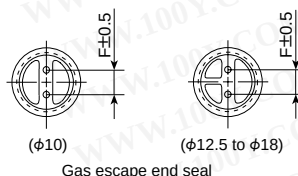


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                           |                                      |                       |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------|
| Category                                               | -25 to +105°C                                                                                                                                                                             |                                      |                       |
| Temperature Range                                      |                                                                                                                                                                                           |                                      |                       |
| Rated Voltage Range                                    | 200 & 400V <sub>dc</sub>                                                                                                                                                                  |                                      |                       |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                 |                                      |                       |
| Leakage Current                                        | I=0.04CV+100<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 1 minute)                                                        |                                      |                       |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 200V                                 | 400V                  |
|                                                        | tanδ (Max.)                                                                                                                                                                               | 0.20                                 | 0.24 (at 20°C, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 200V                                 | 400V                  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                         | 4                                    | 6 (at 120Hz)          |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C. |                                      |                       |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |                       |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |                       |
|                                                        | Leakage current                                                                                                                                                                           | ≤The initial specified value         |                       |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                            |                                      |                       |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |                       |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |                       |
|                                                        | Leakage current                                                                                                                                                                           | ≤500% of the initial specified value |                       |

## ◆ DIMENSIONS [mm]

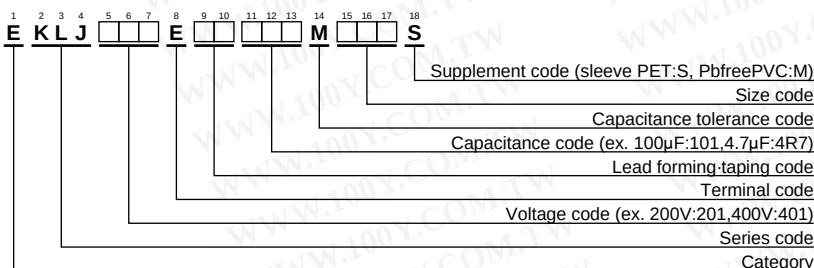
## ● Terminal Code : E



Gas escape end seal

| φD  | 10         | 12.5 | 16  | 18  |
|-----|------------|------|-----|-----|
| φd  | 0.6        | 0.6  | 0.8 | 0.8 |
| F   | 5.0        | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |      |     |     |
| L'  | L+1.5max.  |      |     |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Overvoltage-proof design, 105°C

New!  
**KLJ Series**

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勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | ESR (Ωmax/20°C, 100kHz) | Rated ripple current (mA rms/105°C, 120Hz) | Part No.           |
|----------|----------|--------------------|------|-------------------------|--------------------------------------------|--------------------|
| 200      | 33       | 10×20              | 0.20 | 1.8                     | 165                                        | EKLJ201E□□330MJ20S |
|          | 39       | 10×25              | 0.20 | 1.4                     | 200                                        | EKLJ201E□□390MJ25S |
|          | 56       | 12.5×20            | 0.20 | 1.0                     | 265                                        | EKLJ201E□□560MK20S |
|          | 82       | 12.5×25            | 0.20 | 0.72                    | 350                                        | EKLJ201E□□820MK25S |
|          | 100      | 16×20              | 0.20 | 0.63                    | 390                                        | EKLJ201E□□101ML20S |
|          | 120      | 16×25              | 0.20 | 0.44                    | 465                                        | EKLJ201E□□121ML25S |
|          | 150      | 18×20              | 0.20 | 0.31                    | 505                                        | EKLJ201E□□151MM20S |
|          | 180      | 16×31.5            | 0.20 | 0.36                    | 615                                        | EKLJ201E□□181MLN3S |
|          | 180      | 18×25              | 0.20 | 0.30                    | 585                                        | EKLJ201E□□181MM25S |
|          | 220      | 16×35.5            | 0.20 | 0.30                    | 695                                        | EKLJ201E□□221MLP1S |
|          | 220      | 18×31.5            | 0.20 | 0.28                    | 700                                        | EKLJ201E□□221MMN3S |
|          | 270      | 18×35.5            | 0.20 | 0.24                    | 805                                        | EKLJ201E□□271MMP1S |
| 400      | 330      | 18×40              | 0.20 | 0.21                    | 900                                        | EKLJ201E□□331MM40S |
|          | 4.7      | 10×12.5            | 0.24 | 8.4                     | 36                                         | EKLJ401E□□477MJC5S |
|          | 10       | 10×16              | 0.24 | 5.7                     | 64                                         | EKLJ401E□□100MJ16S |
|          | 15       | 10×20              | 0.24 | 4.0                     | 105                                        | EKLJ401E□□150MJ20S |
|          | 18       | 10×25              | 0.24 | 3.2                     | 110                                        | EKLJ401E□□180MJ25S |
|          | 22       | 12.5×20            | 0.24 | 2.7                     | 165                                        | EKLJ401E□□220MK20S |
|          | 27       | 12.5×25            | 0.24 | 1.9                     | 200                                        | EKLJ401E□□270MK25S |
|          | 33       | 16×20              | 0.24 | 1.5                     | 225                                        | EKLJ401E□□330ML20S |
|          | 39       | 18×20              | 0.24 | 1.2                     | 255                                        | EKLJ401E□□390MM20S |
|          | 39       | 18×25              | 0.24 | 0.72                    | 270                                        | EKLJ401E□□390MM25S |
|          | 47       | 16×25              | 0.24 | 1.1                     | 290                                        | EKLJ401E□□470ML25S |
|          | 47       | 18×20              | 0.24 | 1.2                     | 280                                        | EKLJ401E□□470MM20S |
|          | 56       | 16×31.5            | 0.24 | 0.84                    | 340                                        | EKLJ401E□□560MLN3S |
|          | 68       | 16×35.5            | 0.24 | 0.72                    | 385                                        | EKLJ401E□□680MLP1S |
|          | 68       | 18×25              | 0.24 | 0.88                    | 360                                        | EKLJ401E□□680MM25S |
|          | 82       | 16×40              | 0.24 | 0.65                    | 435                                        | EKLJ401E□□820ML40S |
|          | 82       | 18×31.5            | 0.24 | 0.64                    | 425                                        | EKLJ401E□□820MMN3S |
|          | 100      | 18×35.5            | 0.24 | 0.54                    | 490                                        | EKLJ401E□□101MMP1S |
|          | 120      | 18×40              | 0.24 | 0.49                    | 540                                        | EKLJ401E□□121MM40S |

□□ : Lead forming / Taping code

Sleeve PET : suffix is S, PbfreePVC : suffix is M

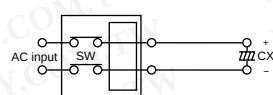
## ◆DC OVERVOLTAGE TEST CONDITIONS

The vent will be operated and the capacitor shall become an open circuit without burning materials when the following excess DC voltage is applied.

## ●Test DC voltage

| Rated voltage | Current limit | Test DC voltage |
|---------------|---------------|-----------------|
| 200Vdc        | 4A            | 300/375Vdc      |
| 400Vdc        | 2A            | 500/600Vdc      |

## ●Test circuit



Constant DC voltage/current power supply

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Frequency (Hz) | 50   | 120  | 300  | 1k   | 10k  | 50k  | 100k |
|----------------|------|------|------|------|------|------|------|
| 4.7 to 10μF    | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 | 2.70 |
| 15 to 47μF     | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 | 1.85 |
| 56 to 330μF    | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 | 1.60 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.

When long life performance is required in actual use, the rms ripple current has to be reduced.

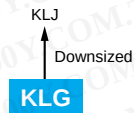


## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Overvoltage-proof design, 105°C

# KLG Series

- No sparks against DC over-voltage
- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent-proof type
- RoHS Compliant

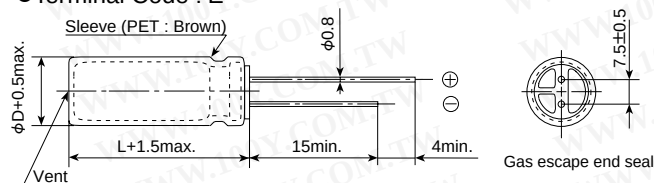


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                           |                                      |                  |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|
| Category                                               | -25 to +105°C                                                                                                                                                                             |                                      |                  |
| Temperature Range                                      |                                                                                                                                                                                           |                                      |                  |
| Rated Voltage Range                                    | 200 & 400V <sub>dc</sub>                                                                                                                                                                  |                                      |                  |
| Capacitance Tolerance                                  | ±20% (M)                                                                                                                                                                                  |                                      | (at 20°C, 120Hz) |
| Leakage Current                                        | I=0.04CV+100<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)<br>(at 20°C after 1 minute)                                                     |                                      |                  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 200V                                 | 400V             |
|                                                        | tanδ (Max.)                                                                                                                                                                               | 0.20                                 | 0.24             |
|                                                        | (at 20°C, 120Hz)                                                                                                                                                                          |                                      |                  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 200V                                 | 400V             |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                         | 4                                    | 6                |
|                                                        | (at 120Hz)                                                                                                                                                                                |                                      |                  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C. |                                      |                  |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |                  |
|                                                        | Leakage current                                                                                                                                                                           | ≤The initial specified value         |                  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                            |                                      |                  |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |                  |
|                                                        | Leakage current                                                                                                                                                                           | ≤500% of the initial specified value |                  |

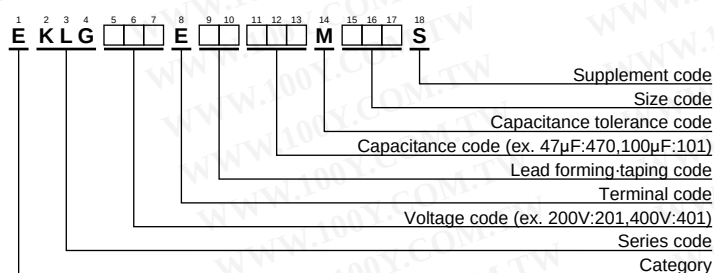
## ◆ DIMENSIONS [mm]

- Terminal Code : E



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## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Overvoltage-proof design, 105°C

KLG Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|-------------------------------------------------------|--------------------|
| 200      | 82       | 16×20              | 0.20 | 230                                                   | EKLG201E□□820ML20S |
|          | 100      | 16×25              | 0.20 | 425                                                   | EKLG201E□□101ML25S |
|          | 100      | 18×20              | 0.20 | 250                                                   | EKLG201E□□101MM20S |
|          | 120      | 16×31.5            | 0.20 | 500                                                   | EKLG201E□□121MLN3S |
|          | 120      | 18×25              | 0.20 | 475                                                   | EKLG201E□□121MM25S |
|          | 130      | 18×20              | 0.20 | 285                                                   | EKLG201E□□131MM20S |
|          | 150      | 16×31.5            | 0.20 | 560                                                   | EKLG201E□□151MLN3S |
|          | 150      | 18×20              | 0.20 | 315                                                   | EKLG201E□□151MM20S |
|          | 150      | 18×25              | 0.20 | 530                                                   | EKLG201E□□151MM25S |
|          | 180      | 16×40              | 0.20 | 645                                                   | EKLG201E□□181ML40S |
|          | 180      | 18×31.5            | 0.20 | 630                                                   | EKLG201E□□181MMN3S |
|          | 220      | 18×35.5            | 0.20 | 725                                                   | EKLG201E□□221MMP1S |
|          | 220      | 18×40              | 0.20 | 735                                                   | EKLG201E□□221MM40S |
|          | 270      | 18×45              | 0.20 | 830                                                   | EKLG201E□□271MM45S |
|          | 330      | 18×45              | 0.20 | 920                                                   | EKLG201E□□331MM45S |

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           |
|----------|----------|--------------------|------|-------------------------------------------------------|--------------------|
| 400      | 22       | 16×20              | 0.24 | 145                                                   | EKLG401E□□220ML20S |
|          | 22       | 16×25              | 0.24 | 200                                                   | EKLG401E□□220ML25S |
|          | 33       | 16×25              | 0.24 | 220                                                   | EKLG401E□□330ML25S |
|          | 33       | 18×20              | 0.24 | 225                                                   | EKLG401E□□330MM20S |
|          | 39       | 16×31.5            | 0.24 | 245                                                   | EKLG401E□□390MLN3S |
|          | 39       | 18×25              | 0.24 | 250                                                   | EKLG401E□□390MM25S |
|          | 47       | 16×31.5            | 0.24 | 275                                                   | EKLG401E□□470MLN3S |
|          | 47       | 18×25              | 0.24 | 280                                                   | EKLG401E□□470MM25S |
|          | 56       | 16×40              | 0.24 | 350                                                   | EKLG401E□□560ML40S |
|          | 56       | 18×31.5            | 0.24 | 315                                                   | EKLG401E□□560MMN3S |
|          | 68       | 18×35.5            | 0.24 | 350                                                   | EKLG401E□□680MMP1S |
|          | 82       | 18×40              | 0.24 | 395                                                   | EKLG401E□□820MM40S |
|          | 100      | 18×40              | 0.24 | 450                                                   | EKLG401E□□101MM40S |

□□ : Lead forming / Taping code

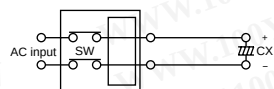
## ◆DC OVERVOLTAGE TEST CONDITIONS

The vent will be operated and the capacitor shall become an open circuit without burning materials when the following excess DC voltage is applied.

## ●Test DC voltage

| Rated voltage      | Current limit | Test DC voltage        |
|--------------------|---------------|------------------------|
| 200V <sub>dc</sub> | 4A            | 300/375V <sub>dc</sub> |
| 400V <sub>dc</sub> | 2A            | 500/600V <sub>dc</sub> |

## ●Test circuit



Constant DC voltage/current power supply

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Frequency (Hz) | 50   | 120  | 300  | 1k   | 10k  | 50k  | 100k |
|----------------|------|------|------|------|------|------|------|
| 22 to 47μF     | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 | 1.85 |
| 56 to 330μF    | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 | 1.60 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Long life for  $\phi 4$  to  $\phi 8$  product, 105°C

## FL Series

- Long life and high reliability for  $\phi 4 \times 5L$  to  $\phi 8 \times 7L$  mm range
- Endurance with ripple current : 3,000 hours at 105°C
- Suitable for long life and high reliability required products
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

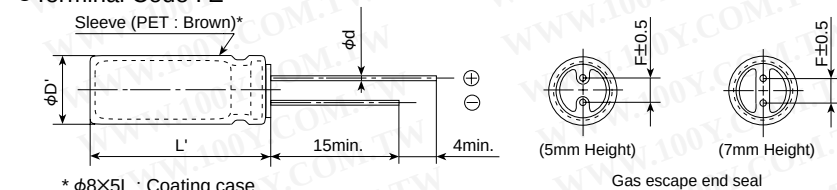


### ◆SPECIFICATIONS

| Items                     | Characteristics                                                                                                                                                                           |                                                |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Category                  | -40 to +105°C                                                                                                                                                                             |                                                |
| Temperature Range         |                                                                                                                                                                                           |                                                |
| Rated Voltage Range       | 6.3 to 50V <sub>dc</sub>                                                                                                                                                                  |                                                |
| Capacitance Tolerance     | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                 |                                                |
| Leakage Current           | I=0.03CV or 3µA, whichever is greater.<br>Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 2 minutes)                             |                                                |
| Dissipation Factor (tanδ) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 6.3V 10V 16V 25V 35V 50V                       |
|                           | tanδ (Max.)                                                                                                                                                                               | 0.50 0.40 0.35 0.30 0.25 0.25 (at 20°C, 120Hz) |
| Endurance                 | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 3,000 hours at 105°C. |                                                |
|                           | Capacitance change                                                                                                                                                                        | ≤±30% of the initial value                     |
|                           | D.F. (tanδ)                                                                                                                                                                               | ≤300% of the initial specified value           |
|                           | Leakage current                                                                                                                                                                           | ≤The initial specified value                   |
| Shelf Life                | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                            |                                                |
|                           | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value                     |
|                           | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value           |
|                           | Leakage current                                                                                                                                                                           | ≤The initial specified value                   |

### ◆DIMENSIONS [mm]

- Terminal Code : E

\*  $\phi 8 \times 5L$  : Coating case

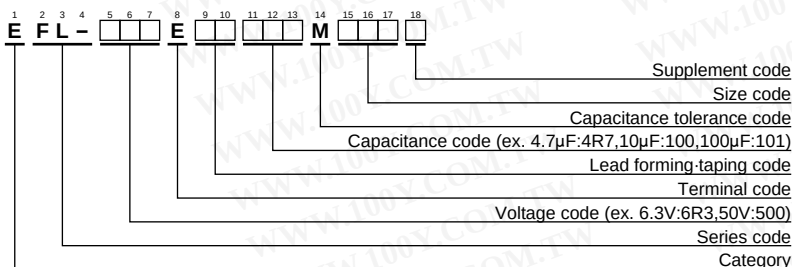
5mm Height

| φD  | 4          | 5    | 6.3  | 8    |
|-----|------------|------|------|------|
| φd  | 0.45       | 0.45 | 0.45 | 0.45 |
| F   | 1.5        | 2.0  | 2.5  | 2.5  |
| φD' | φD+0.5max. |      |      |      |
| L'  | L+1.0max.  |      |      |      |

7mm Height

| φD  | 4          | 5    | 6.3  | 8    |
|-----|------------|------|------|------|
| φd  | 0.45       | 0.45 | 0.45 | 0.45 |
| F   | 1.5        | 2.0  | 2.5  | 3.5  |
| φD' | φD+0.5max. |      |      |      |
| L'  | L+1.0max.  |      |      |      |

### ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Long life for  $\phi 4$  to  $\phi 8$  product, 105°C

FL Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size $\phi \times L$ (mm) | $\tan \delta$ | Impedance ( $\Omega_{\max}/20^\circ\text{C}, 100\text{kHz}$ ) | Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz) | Part No.           |
|----------|----------|--------------------------------|---------------|---------------------------------------------------------------|---------------------------------------------------------|--------------------|
| 6.3      | 33       | 4×5                            | 0.50          | 5.4                                                           | 37                                                      | EFL-6R3E□□330MD05D |
|          | 47       | 4×7                            | 0.50          | 4.5                                                           | 44                                                      | EFL-6R3E□□470MD07D |
|          | 56       | 5×5                            | 0.50          | 3.1                                                           | 57                                                      | EFL-6R3E□□560ME05D |
|          | 82       | 5×7                            | 0.50          | 2.5                                                           | 70                                                      | EFL-6R3E□□820ME07D |
|          | 100      | 6.3×5                          | 0.50          | 1.7                                                           | 82                                                      | EFL-6R3E□□101MF05D |
|          | 150      | 6.3×7                          | 0.50          | 1.3                                                           | 116                                                     | EFL-6R3E□□151MF07D |
|          | 220      | 8×5                            | 0.50          | 1.5                                                           | 110                                                     | EFL-6R3E□□221MH05G |
| 10       | 270      | 8×7                            | 0.50          | 0.90                                                          | 162                                                     | EFL-6R3E□□271MH07D |
|          | 22       | 4×5                            | 0.40          | 5.4                                                           | 37                                                      | EFL-100E□□220MD05D |
|          | 33       | 4×7                            | 0.40          | 4.5                                                           | 44                                                      | EFL-100E□□330MD07D |
|          | 33       | 5×5                            | 0.40          | 3.1                                                           | 57                                                      | EFL-100E□□330ME05D |
|          | 47       | 5×7                            | 0.40          | 2.5                                                           | 70                                                      | EFL-100E□□470ME07D |
|          | 68       | 6.3×5                          | 0.40          | 1.7                                                           | 82                                                      | EFL-100E□□680MF05D |
|          | 100      | 6.3×7                          | 0.40          | 1.3                                                           | 116                                                     | EFL-100E□□101MF07D |
| 16       | 150      | 8×5                            | 0.40          | 1.5                                                           | 110                                                     | EFL-100E□□151MH05G |
|          | 220      | 8×7                            | 0.40          | 0.90                                                          | 162                                                     | EFL-100E□□221MH07D |
|          | 15       | 4×5                            | 0.35          | 5.4                                                           | 37                                                      | EFL-160E□□150MD05D |
|          | 22       | 4×7                            | 0.35          | 4.5                                                           | 44                                                      | EFL-160E□□220MD07D |
|          | 22       | 5×5                            | 0.35          | 3.1                                                           | 57                                                      | EFL-160E□□220ME05D |
|          | 33       | 5×7                            | 0.35          | 2.5                                                           | 70                                                      | EFL-160E□□330ME07D |
|          | 47       | 6.3×5                          | 0.35          | 1.7                                                           | 82                                                      | EFL-160E□□470MF05D |
| 25       | 68       | 6.3×7                          | 0.35          | 1.3                                                           | 116                                                     | EFL-160E□□680MF07D |
|          | 100      | 8×5                            | 0.35          | 1.5                                                           | 110                                                     | EFL-160E□□101MH05G |
|          | 150      | 8×7                            | 0.35          | 0.90                                                          | 162                                                     | EFL-160E□□151MH07D |
|          | 10       | 4×5                            | 0.30          | 5.4                                                           | 37                                                      | EFL-250E□□100MD05D |
|          | 15       | 4×7                            | 0.30          | 4.5                                                           | 44                                                      | EFL-250E□□150MD07D |
|          | 15       | 5×5                            | 0.30          | 3.1                                                           | 57                                                      | EFL-250E□□150ME05D |
|          | 22       | 5×7                            | 0.30          | 2.5                                                           | 70                                                      | EFL-250E□□220ME07D |
| 35       | 33       | 6.3×5                          | 0.30          | 1.7                                                           | 82                                                      | EFL-250E□□330MF05D |
|          | 56       | 6.3×7                          | 0.30          | 1.3                                                           | 116                                                     | EFL-250E□□560MF07D |
|          | 68       | 8×5                            | 0.30          | 1.5                                                           | 110                                                     | EFL-250E□□680MH05G |
|          | 100      | 8×7                            | 0.30          | 0.90                                                          | 162                                                     | EFL-250E□□101MH07D |
|          | 4.7      | 4×5                            | 0.25          | 5.4                                                           | 37                                                      | EFL-350E□□4R7MD05D |
|          | 6.8      | 4×7                            | 0.25          | 4.5                                                           | 44                                                      | EFL-350E□□6R8MD07D |
|          | 10       | 5×5                            | 0.25          | 3.1                                                           | 57                                                      | EFL-350E□□100ME05D |
| 50       | 10       | 5×7                            | 0.25          | 2.5                                                           | 70                                                      | EFL-350E□□100ME07D |
|          | 22       | 6.3×5                          | 0.25          | 1.7                                                           | 82                                                      | EFL-350E□□220MF05D |
|          | 22       | 6.3×7                          | 0.25          | 1.3                                                           | 116                                                     | EFL-350E□□220MF07D |
|          | 33       | 8×5                            | 0.25          | 1.5                                                           | 110                                                     | EFL-350E□□330MH05G |
|          | 47       | 8×7                            | 0.25          | 0.90                                                          | 162                                                     | EFL-350E□□470MH07D |
|          | 0.47     | 4×5                            | 0.25          | 34                                                            | 14                                                      | EFL-500E□□R47MD05D |
|          | 1        | 4×5                            | 0.25          | 19                                                            | 18                                                      | EFL-500E□□1R0MD05D |
| 50       | 2.2      | 4×5                            | 0.25          | 14                                                            | 22                                                      | EFL-500E□□2R2MD05D |
|          | 3.3      | 4×5                            | 0.25          | 11                                                            | 26                                                      | EFL-500E□□3R3MD05D |
|          | 4.7      | 4×7                            | 0.25          | 9.0                                                           | 30                                                      | EFL-500E□□4R7MD07D |
|          | 4.7      | 5×5                            | 0.25          | 6.0                                                           | 40                                                      | EFL-500E□□4R7ME05D |
|          | 6.8      | 5×7                            | 0.25          | 4.8                                                           | 50                                                      | EFL-500E□□6R8ME07D |
|          | 10       | 6.3×5                          | 0.25          | 2.9                                                           | 63                                                      | EFL-500E□□100MF05D |
|          | 15       | 6.3×7                          | 0.25          | 2.2                                                           | 90                                                      | EFL-500E□□150MF07D |
|          | 22       | 8×5                            | 0.25          | 2.6                                                           | 84                                                      | EFL-500E□□220MH05G |
|          | 22       | 8×7                            | 0.25          | 1.6                                                           | 120                                                     | EFL-500E□□220MH07D |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|---------------|------|------|------|------|
| to 3.3          |               | 0.20 | 0.66 | 0.90 | 1.00 |
| 4.7 to 6.8      |               | 0.35 | 0.70 | 0.90 | 1.00 |
| 10 to 150       |               | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 270      |               | 0.50 | 0.85 | 0.94 | 1.00 |

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The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



Longer life, Downsized, 125°C



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Longer life, Downsized, 125°C

New!

GPA Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | ESR<br>(Ωmax/100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>125°C,<br>100kHz) | Part No.           |
|-------------|-------------|-----------------------|----------------------|-------|-------------------------------------------------------------|--------------------|
|             |             |                       | 20°C                 | -40°C |                                                             |                    |
| 25          | 1,200       | 12.5×20               | 0.044                | 0.22  | 1,820                                                       | EGPA250E□□122MK20S |
|             | 1,500       | 14.5×20               | 0.037                | 0.19  | 2,100                                                       | EGPA250E□□152MU20S |
|             | 1,800       | 12.5×25               | 0.033                | 0.17  | 2,280                                                       | EGPA250E□□182MK25S |
|             | 1,800       | 16×20                 | 0.034                | 0.17  | 2,280                                                       | EGPA250E□□182ML20S |
|             | 2,200       | 12.5×30               | 0.029                | 0.13  | 2,560                                                       | EGPA250E□□222MK30S |
|             | 2,200       | 14.5×25               | 0.028                | 0.14  | 2,620                                                       | EGPA250E□□222MU25S |
|             | 2,700       | 12.5×35               | 0.024                | 0.11  | 2,970                                                       | EGPA250E□□272MK35S |
|             | 2,700       | 14.5×30               | 0.023                | 0.10  | 3,060                                                       | EGPA250E□□272MU30S |
|             | 2,700       | 16×25                 | 0.026                | 0.13  | 2,860                                                       | EGPA250E□□272ML25S |
|             | 2,700       | 18×20                 | 0.032                | 0.16  | 2,490                                                       | EGPA250E□□272MM20S |
|             | 3,300       | 12.5×40               | 0.021                | 0.095 | 3,340                                                       | EGPA250E□□332MK35S |
|             | 3,300       | 14.5×35               | 0.021                | 0.095 | 3,380                                                       | EGPA250E□□332MU35S |
|             | 3,300       | 16×30                 | 0.023                | 0.100 | 3,160                                                       | EGPA250E□□332ML30S |
|             | 3,900       | 16×35                 | 0.020                | 0.090 | 3,590                                                       | EGPA250E□□392ML35S |
|             | 3,900       | 18×25                 | 0.024                | 0.120 | 3,010                                                       | EGPA250E□□392MM35S |
|             | 4,700       | 14.5×40               | 0.018                | 0.081 | 3,730                                                       | EGPA250E□□472MU40S |
|             | 4,700       | 18×30                 | 0.022                | 0.099 | 3,390                                                       | EGPA250E□□472MM30S |
|             | 5,600       | 16×40                 | 0.017                | 0.077 | 3,970                                                       | EGPA250E□□562ML40S |
|             | 5,600       | 18×35                 | 0.019                | 0.086 | 3,840                                                       | EGPA250E□□562MM35S |
|             | 6,800       | 18×40                 | 0.016                | 0.072 | 4,230                                                       | EGPA250E□□682MM40S |
| 35          | 680         | 12.5×20               | 0.044                | 0.22  | 1,820                                                       | EGPA350E□□681MK20S |
|             | 1,000       | 12.5×25               | 0.033                | 0.17  | 2,280                                                       | EGPA350E□□102MK25S |
|             | 1,000       | 14.5×20               | 0.037                | 0.19  | 2,100                                                       | EGPA350E□□102MU20S |
|             | 1,200       | 12.5×30               | 0.029                | 0.13  | 2,560                                                       | EGPA350E□□122MK30S |
|             | 1,200       | 16×20                 | 0.034                | 0.17  | 2,280                                                       | EGPA350E□□122ML20S |
|             | 1,200       | 14.5×25               | 0.028                | 0.14  | 2,620                                                       | EGPA350E□□122MU25S |
|             | 1,500       | 12.5×35               | 0.024                | 0.11  | 2,970                                                       | EGPA350E□□152MK35S |
|             | 1,500       | 14.5×30               | 0.023                | 0.10  | 3,060                                                       | EGPA350E□□152MU30S |
|             | 1,500       | 18×20                 | 0.032                | 0.16  | 2,490                                                       | EGPA350E□□152MM20S |
|             | 1,800       | 12.5×40               | 0.021                | 0.095 | 3,340                                                       | EGPA350E□□182MK40S |
|             | 1,800       | 16×25                 | 0.026                | 0.130 | 2,860                                                       | EGPA350E□□182ML25S |
|             | 2,200       | 14.5×35               | 0.021                | 0.095 | 3,380                                                       | EGPA350E□□222MU35S |
|             | 2,200       | 16×30                 | 0.023                | 0.100 | 3,160                                                       | EGPA350E□□222ML30S |
|             | 2,200       | 18×25                 | 0.024                | 0.120 | 3,010                                                       | EGPA350E□□222MM25S |
|             | 2,700       | 14.5×40               | 0.018                | 0.081 | 3,730                                                       | EGPA350E□□272MU40S |
|             | 2,700       | 16×35                 | 0.020                | 0.090 | 3,590                                                       | EGPA350E□□272ML35S |
|             | 2,700       | 18×30                 | 0.022                | 0.099 | 3,390                                                       | EGPA350E□□272MM30S |
|             | 3,300       | 16×40                 | 0.017                | 0.077 | 3,970                                                       | EGPA350E□□332ML40S |
|             | 3,300       | 18×35                 | 0.019                | 0.086 | 3,840                                                       | EGPA350E□□332MM35S |
|             | 4,700       | 18×40                 | 0.016                | 0.072 | 4,230                                                       | EGPA350E□□472MM40S |
| 50          | 470         | 12.5×20               | 0.065                | 0.33  | 1,500                                                       | EGPA500E□□471MK20S |
|             | 560         | 14.5×20               | 0.055                | 0.28  | 1,740                                                       | EGPA500E□□561MU20S |
|             | 680         | 12.5×25               | 0.048                | 0.24  | 1,900                                                       | EGPA500E□□681MK25S |
|             | 680         | 16×20                 | 0.043                | 0.22  | 2,040                                                       | EGPA500E□□681ML20S |
|             | 820         | 12.5×30               | 0.041                | 0.18  | 2,150                                                       | EGPA500E□□821MK30S |
|             | 820         | 14.5×25               | 0.040                | 0.20  | 2,190                                                       | EGPA500E□□821MU25S |
|             | 1,000       | 12.5×35               | 0.034                | 0.15  | 2,510                                                       | EGPA500E□□102MK35S |
|             | 1,000       | 14.5×30               | 0.036                | 0.16  | 2,470                                                       | EGPA500E□□102MU30S |
|             | 1,000       | 16×25                 | 0.031                | 0.16  | 2,620                                                       | EGPA500E□□102ML25S |
|             | 1,000       | 18×20                 | 0.039                | 0.20  | 2,240                                                       | EGPA500E□□102MM20S |
|             | 1,200       | 12.5×40               | 0.028                | 0.13  | 2,870                                                       | EGPA500E□□122MK40S |
|             | 1,200       | 14.5×35               | 0.029                | 0.13  | 2,840                                                       | EGPA500E□□122MU35S |
|             | 1,200       | 16×30                 | 0.027                | 0.13  | 2,940                                                       | EGPA500E□□122ML30S |
|             | 1,200       | 18×25                 | 0.029                | 0.15  | 2,750                                                       | EGPA500E□□122MM25S |
|             | 1,500       | 16×35                 | 0.023                | 0.10  | 3,300                                                       | EGPA500E□□152MK35S |
|             | 1,800       | 14.5×40               | 0.024                | 0.11  | 3,230                                                       | EGPA500E□□182MU40S |
|             | 1,800       | 18×30                 | 0.026                | 0.12  | 3,140                                                       | EGPA500E□□182MM30S |
|             | 2,200       | 16×40                 | 0.020                | 0.090 | 3,720                                                       | EGPA500E□□222ML40S |
|             | 2,200       | 18×35                 | 0.022                | 0.100 | 3,510                                                       | EGPA500E□□222MM35S |
|             | 2,700       | 18×40                 | 0.018                | 0.080 | 3,940                                                       | EGPA500E□□272MM40S |
| 63          | 330         | 12.5×20               | 0.130                | 0.78  | 1,090                                                       | EGPA630E□□331MK20S |
|             | 470         | 12.5×25               | 0.089                | 0.54  | 1,390                                                       | EGPA630E□□471MK25S |
|             | 470         | 14.5×20               | 0.104                | 0.63  | 1,270                                                       | EGPA630E□□471MU20S |
|             | 560         | 12.5×30               | 0.076                | 0.42  | 1,600                                                       | EGPA630E□□561MK30S |
|             | 560         | 14.5×25               | 0.076                | 0.46  | 1,600                                                       | EGPA630E□□561MU25S |
|             | 560         | 16×20                 | 0.070                | 0.42  | 1,600                                                       | EGPA630E□□561ML20S |
|             | 680         | 12.5×35               | 0.063                | 0.35  | 1,860                                                       | EGPA630E□□681MK35S |
|             | 680         | 14.5×30               | 0.064                | 0.36  | 1,840                                                       | EGPA630E□□681MU30S |
|             | 680         | 16×25                 | 0.051                | 0.31  | 2,030                                                       | EGPA630E□□681ML25S |
|             | 680         | 18×20                 | 0.067                | 0.41  | 1,720                                                       | EGPA630E□□681MM20S |
|             | 820         | 12.5×40               | 0.050                | 0.28  | 2,160                                                       | EGPA630E□□821MK40S |
|             | 820         | 14.5×35               | 0.054                | 0.30  | 2,100                                                       | EGPA630E□□821MU35S |
|             | 820         | 16×30                 | 0.045                | 0.25  | 2,290                                                       | EGPA630E□□821ML30S |
|             | 1,000       | 16×35                 | 0.037                | 0.21  | 2,630                                                       | EGPA630E□□102ML35S |
|             | 1,000       | 18×25                 | 0.050                | 0.30  | 2,110                                                       | EGPA630E□□102MM25S |
|             | 1,200       | 14.5×40               | 0.042                | 0.24  | 2,470                                                       | EGPA630E□□122MU40S |
|             | 1,200       | 18×30                 | 0.044                | 0.25  | 2,420                                                       | EGPA630E□□122MM30S |
|             | 1,500       | 16×40                 | 0.030                | 0.17  | 3,000                                                       | EGPA630E□□152ML40S |
|             | 1,500       | 18×35                 | 0.036                | 0.20  | 2,770                                                       | EGPA630E□□152MM35S |
|             | 1,800       | 18×40                 | 0.029                | 0.16  | 3,150                                                       | EGPA630E□□182MM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|---------------|------|------|------|------|
| 330 to 560      |               | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800    |               | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,900  |               | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to 6,800  |               | 0.85 | 0.95 | 0.98 | 1.00 |

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 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Long Life, Downsized, 125°C

# GXE Series

- For automobile modules and other high temperature applications
- Downsize, long life, low impedance and better low temperature characteristics
- Endurance with ripple current : 2,000 to 5,000 hours at 125°C
- Solvent-proof type except 63 to 450V (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

GXE

Longer life

GXL

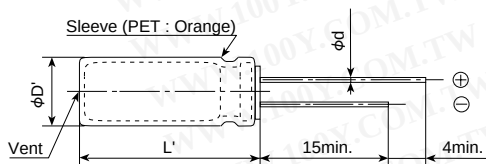
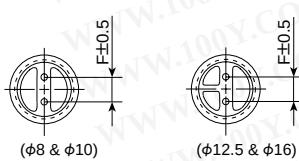


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                           |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------|------|------|---------------------------|--------------------------------------|--------------|------|--------------------------------------|-------------|------------------|--|
| Category                                               | Long Life, Downsized, 125°C                                                                                                                                                                               |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
| Temperature Range                                      | -40 to +125°C (10 to 250V <sub>dc</sub> ) -25 to +125°C (350 to 450V <sub>dc</sub> )                                                                                                                      |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
| Rated Voltage Range                                    | 10 to 450V <sub>dc</sub>                                                                                                                                                                                  |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                 |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
| Leakage Current                                        | 10 to 100V <sub>dc</sub>                                                                                                                                                                                  |                                                           |      |      |      | 160 to 450V <sub>dc</sub> |                                      |              |      |                                      |             |                  |  |
|                                                        | I=0.03CV or 4μA, whichever is greater.                                                                                                                                                                    |                                                           |      |      |      | CV≤1,000                  |                                      | I=0.1CV+40   |      |                                      |             |                  |  |
|                                                        |                                                                                                                                                                                                           |                                                           |      |      |      | CV>1,000                  |                                      | I=0.04CV+100 |      |                                      |             |                  |  |
|                                                        | Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C, 1 minute)                                                                                             |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                          | 10V                                                       | 16V  | 25V  | 35V  | 50V                       | 63V                                  | 80V          | 100V | 160 to 250V                          | 350 to 450V | (at 20°C, 120Hz) |  |
|                                                        | tanδ (Max.)                                                                                                                                                                                               | 0.20                                                      | 0.16 | 0.14 | 0.12 | 0.10                      | 0.10                                 | 0.08         | 0.08 | 0.20                                 | 0.24        |                  |  |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the above value for each 1,000μF increase.                                                                                                          |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                          | 10V                                                       | 16V  | 25V  | 35V  | 50V                       | 63V                                  | 80V          | 100V | 160 to 250V                          | 350 to 450V | (at 120Hz)       |  |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                                         | 3                                                         | 2    | 2    | 2    | 2                         | 2                                    | 2            | 2    | 3                                    | 6           |                  |  |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                                                                         | 6                                                         | 4    | 4    | 4    | 4                         | 4                                    | 4            | 4    | 4                                    | 6           |                  |  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified time at 125°C.          |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
|                                                        |                                                                                                                                                                                                           | 10 to 100V <sub>dc</sub>                                  |      |      |      |                           |                                      |              |      | 160 to 450V <sub>dc</sub>            |             |                  |  |
|                                                        | Time                                                                                                                                                                                                      | φ8 : 2,000hours φ10 : 3,000hours φ12.5 & φ16 : 5,000hours |      |      |      |                           |                                      |              |      | 2,000hours                           |             |                  |  |
|                                                        | Capacitance change                                                                                                                                                                                        | ≤±30% of the initial value                                |      |      |      |                           |                                      |              |      | ≤±20% of the initial value           |             |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                               | ≤300% of the initial specified value                      |      |      |      |                           |                                      |              |      | ≤200% of the initial specified value |             |                  |  |
|                                                        | Leakage current                                                                                                                                                                                           | ≤The initial specified value                              |      |      |      |                           |                                      |              |      | ≤The initial specified value         |             |                  |  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours (500 hours for 350 to 450V <sub>dc</sub> ) at 125°C without voltage applied. |                                                           |      |      |      |                           |                                      |              |      |                                      |             |                  |  |
|                                                        |                                                                                                                                                                                                           | 10 to 100V <sub>dc</sub>                                  |      |      |      |                           | 160 to 450V <sub>dc</sub>            |              |      |                                      |             |                  |  |
|                                                        | Capacitance change                                                                                                                                                                                        | ≤±30% of the initial value                                |      |      |      |                           | ≤±20% of the initial value           |              |      |                                      |             |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                               | ≤300% of the initial specified value                      |      |      |      |                           | ≤200% of the initial specified value |              |      |                                      |             |                  |  |
|                                                        | Leakage current                                                                                                                                                                                           | ≤The initial specified value                              |      |      |      |                           | ≤500% of the initial specified value |              |      |                                      |             |                  |  |

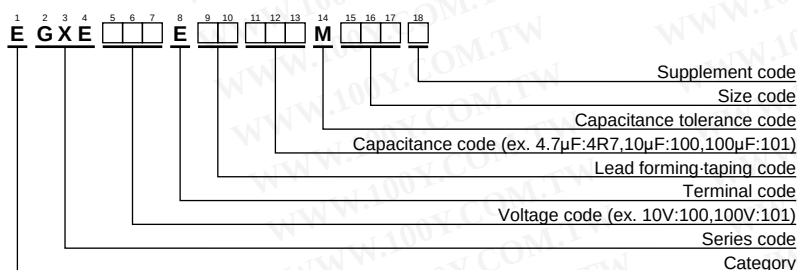
## ◆DIMENSIONS [mm]

- Terminal Code : E



| φD  | 8          | 10  | 12.5 | 16  |
|-----|------------|-----|------|-----|
| φd  | 0.6        | 0.6 | 0.6  | 0.8 |
| F   | 3.5        | 5.0 | 5.0  | 7.5 |
| φD' | φD+0.5max. |     |      |     |
| L'  | L+2.0max.  |     |      |     |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Long Life, Downsized, 125°C

GXE Series

## ◆STANDARD RATINGS

□ is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | Impedance (Ωmax/ 20°C, 100kHz) | Rated ripple current (mA rms/ 125°C, Note1) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | Impedance (Ωmax/ 20°C, 100kHz) | Rated ripple current (mA rms/ 125°C, Note1) | Part No.            |
|----------|----------|--------------------|--------------------------------|---------------------------------------------|--------------------|----------|----------|--------------------|--------------------------------|---------------------------------------------|---------------------|
| 10       | 220      | 8×12               | 0.32                           | 340                                         | EGXE100E□□221MH12D | 80       | 47       | 10×12.5            | 0.80                           | 480                                         | EGXE800E□□470MJC5S  |
|          | 330      | 10×12.5            | 0.15                           | 620                                         | EGXE100E□□331MJC5S |          | 100      | 10×20              | 0.39                           | 790                                         | EGXE800E□□101MJ20S  |
|          | 470      | 10×12.5            | 0.15                           | 620                                         | EGXE100E□□471MJC5S |          | 220      | 12.5×25            | 0.18                           | 1,240                                       | EGXE800E□□221MK25S  |
|          | 1,000    | 10×20              | 0.075                          | 950                                         | EGXE100E□□102MJ20S |          | 330      | 12.5×30            | 0.16                           | 1,390                                       | EGXE800E□□331MK30S  |
|          | 2,200    | 12.5×25            | 0.040                          | 1,350                                       | EGXE100E□□222MK25S |          | 470      | 16×25              | 0.11                           | 1,500                                       | EGXE800E□□471ML25S  |
|          | 3,300    | 16×25              | 0.031                          | 1,620                                       | EGXE100E□□332ML25S | 100      | 4.7      | 8×12               | 2.0                            | 130                                         | EGXE101E□□4R7MH12D  |
|          | 4,700    | 16×31.5            | 0.025                          | 1,860                                       | EGXE100E□□472MLN3S |          | 10       | 8×12               | 1.5                            | 150                                         | EGXE101E□□100MH12D  |
| 16       | 100      | 8×12               | 0.32                           | 340                                         | EGXE160E□□101MH12D |          | 22       | 10×12.5            | 0.80                           | 480                                         | EGXE101E□□220MJC5S  |
|          | 220      | 10×12.5            | 0.15                           | 620                                         | EGXE160E□□221MJC5S |          | 33       | 10×12.5            | 0.80                           | 480                                         | EGXE101E□□330MJC5S  |
|          | 330      | 10×12.5            | 0.15                           | 620                                         | EGXE160E□□331MJC5S |          | 47       | 10×16              | 0.55                           | 630                                         | EGXE101E□□470MJC16S |
|          | 470      | 10×16              | 0.094                          | 790                                         | EGXE160E□□471MJ16S |          | 100      | 12.5×20            | 0.25                           | 990                                         | EGXE101E□□101MK20S  |
|          | 1,000    | 12.5×20            | 0.058                          | 1,080                                       | EGXE160E□□102MK20S |          | 220      | 16×25              | 0.11                           | 1,500                                       | EGXE101E□□221ML25S  |
|          | 2,200    | 16×25              | 0.031                          | 1,620                                       | EGXE160E□□222ML25S |          | 330      | 16×31.5            | 0.079                          | 1,790                                       | EGXE101E□□331MLN3S  |
|          | 3,300    | 16×31.5            | 0.025                          | 1,860                                       | EGXE160E□□332MLN3S | 160      | 22       | 10×20              | —                              | 115                                         | EGXE161E□□220MJC20S |
| 25       | 100      | 8×12               | 0.32                           | 340                                         | EGXE250E□□101MH12D |          | 33       | 10×25              | —                              | 154                                         | EGXE161E□□330MJC25S |
|          | 220      | 10×12.5            | 0.15                           | 620                                         | EGXE250E□□221MJC5S |          | 47       | 12.5×20            | —                              | 187                                         | EGXE161E□□470MK20S  |
|          | 330      | 10×16              | 0.094                          | 790                                         | EGXE250E□□331MJ16S |          | 68       | 12.5×25            | —                              | 245                                         | EGXE161E□□680MK25S  |
|          | 470      | 10×20              | 0.075                          | 950                                         | EGXE250E□□471MJ20S |          | 100      | 16×25              | —                              | 329                                         | EGXE161E□□101ML25S  |
|          | 1,000    | 12.5×25            | 0.040                          | 1,350                                       | EGXE250E□□102MK25S |          | 150      | 16×31.5            | —                              | 434                                         | EGXE161E□□151MLN3S  |
|          | 2,200    | 16×31.5            | 0.025                          | 1,860                                       | EGXE250E□□222MLN3S | 200      | 10       | 10×20              | —                              | 78                                          | EGXE201E□□100MJ20S  |
| 35       | 100      | 8×12               | 0.32                           | 340                                         | EGXE350E□□101MH12D |          | 22       | 10×25              | —                              | 126                                         | EGXE201E□□220MJ25S  |
|          | 100      | 10×12.5            | 0.15                           | 620                                         | EGXE350E□□101MJC5S |          | 33       | 12.5×20            | —                              | 157                                         | EGXE201E□□330MK20S  |
|          | 220      | 10×16              | 0.094                          | 790                                         | EGXE350E□□221MJ16S |          | 47       | 12.5×25            | —                              | 204                                         | EGXE201E□□470MK25S  |
|          | 330      | 10×20              | 0.075                          | 950                                         | EGXE350E□□331MJ20S |          | 68       | 16×20              | —                              | 250                                         | EGXE201E□□680ML20S  |
|          | 470      | 12.5×20            | 0.058                          | 1,080                                       | EGXE350E□□471MK20S |          | 100      | 16×25              | —                              | 329                                         | EGXE201E□□101ML25S  |
|          | 1,000    | 16×25              | 0.031                          | 1,620                                       | EGXE350E□□102ML25S | 250      | 10       | 10×20              | —                              | 78                                          | EGXE251E□□100MJ20S  |
| 50       | 10       | 8×12               | 0.75                           | 180                                         | EGXE500E□□100MH12D |          | 22       | 12.5×20            | —                              | 128                                         | EGXE251E□□220MK20S  |
|          | 22       | 8×12               | 0.50                           | 250                                         | EGXE500E□□220MH12D |          | 33       | 12.5×25            | —                              | 171                                         | EGXE251E□□330MK25S  |
|          | 33       | 8×12               | 0.50                           | 280                                         | EGXE500E□□330MH12D |          | 47       | 16×25              | —                              | 225                                         | EGXE251E□□470ML25S  |
|          | 47       | 8×12               | 0.50                           | 280                                         | EGXE500E□□470MH12D |          | 68       | 16×31.5            | —                              | 292                                         | EGXE251E□□680MLN3S  |
|          | 100      | 10×12.5            | 0.20                           | 520                                         | EGXE500E□□101MJC5S | 350      | 4.7      | 10×20              | —                              | 53                                          | EGXE351E□□4R7MJ20S  |
|          | 220      | 10×20              | 0.098                          | 880                                         | EGXE500E□□221MJ20S |          | 10       | 10×25              | —                              | 85                                          | EGXE351E□□100MJ25S  |
|          | 330      | 12.5×20            | 0.081                          | 990                                         | EGXE500E□□331MK20S |          | 22       | 12.5×25            | —                              | 139                                         | EGXE351E□□220MK25S  |
|          | 470      | 12.5×25            | 0.059                          | 1,150                                       | EGXE500E□□471MK25S |          | 33       | 16×25              | —                              | 189                                         | EGXE351E□□330ML25S  |
|          | 1,000    | 16×31.5            | 0.032                          | 1,590                                       | EGXE500E□□102MLN3S |          | 47       | 16×31.5            | —                              | 243                                         | EGXE351E□□470MLN3S  |
| 63       | 33       | 8×12               | 1.5                            | 150                                         | EGXE630E□□330MH12D | 400      | 4.7      | 10×20              | —                              | 53                                          | EGXE401E□□4R7MJ20S  |
|          | 47       | 10×12.5            | 0.59                           | 530                                         | EGXE630E□□470MJC5S |          | 10       | 10×25              | —                              | 86                                          | EGXE401E□□100MJ25S  |
|          | 100      | 10×16              | 0.41                           | 690                                         | EGXE630E□□101MJ16S |          | 22       | 12.5×30            | —                              | 142                                         | EGXE401E□□220MK30S  |
|          | 220      | 12.5×20            | 0.16                           | 1,050                                       | EGXE630E□□221MK20S |          | 33       | 16×25              | —                              | 189                                         | EGXE401E□□330ML25S  |
|          | 330      | 12.5×25            | 0.12                           | 1,290                                       | EGXE630E□□331MK25S |          | 47       | 16×31.5            | —                              | 243                                         | EGXE401E□□470MLN3S  |
|          | 470      | 12.5×30            | 0.097                          | 1,460                                       | EGXE630E□□471MK30S | 450      | 4.7      | 10×25              | —                              | 58                                          | EGXE451E□□4R7MJ25S  |
| 80       | 1,000    | 16×31.5            | 0.059                          | 1,850                                       | EGXE630E□□102MLN3S |          | 10       | 12.5×20            | —                              | 86                                          | EGXE451E□□100MK20S  |
|          | 22       | 8×12               | 1.5                            | 150                                         | EGXE800E□□220MH12D |          | 22       | 16×25              | —                              | 154                                         | EGXE451E□□220ML25S  |
|          | 33       | 10×12.5            | 0.8                            | 480                                         | EGXE800E□□330MJC5S |          | 33       | 16×31.5            | —                              | 203                                         | EGXE451E□□330MLN3S  |

□ □ : Lead forming / Taping code

(Note1) Ripple current frequency

10 to 100V = 100kHz

160 to 450V = 120Hz

## ◆RATED RIPPLE CURRENT MULTIPLIERS

●(10 to 100Vdc) Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|
| 4.7 to 100       |                | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 470       |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 1,000            |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,300   |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700            |                | 0.85 | 0.95 | 0.98 | 1.00 |

●(160 to 450Vdc) Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|------|------|
| 4.7 to 33        |                | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 47 to 150        |                | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Longer life, 125°C

## GXL Series

- Long-Life version of GXE series
- For automobile modules and other high temperature applications
- Endurance with ripple current : 5,000 to 10,000 hours at 125°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

GXL

Longer life  
GXE

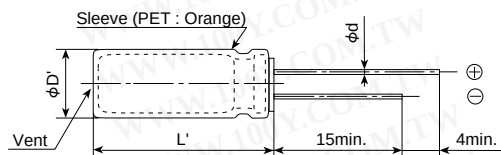
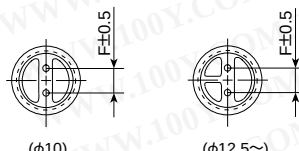


## ◆ SPECIFICATIONS

| Items                                                        | Characteristics                                                                                                                                                                                                  |                                       |      |      |      |                     |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------|------|------|---------------------|
| Category                                                     | -40 to +125°C                                                                                                                                                                                                    |                                       |      |      |      |                     |
| Temperature Range                                            |                                                                                                                                                                                                                  |                                       |      |      |      |                     |
| Rated Voltage Range                                          | 10 to 50V <sub>dc</sub>                                                                                                                                                                                          |                                       |      |      |      |                     |
| Capacitance Tolerance                                        | ±20% (M)                                                                                                                                                                                                         |                                       |      |      |      | (at 20°C, 120Hz)    |
| Leakage Current                                              | I=0.03CV or 4μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                                              |                                       |      |      |      | (at 20°C, 1 minute) |
| Dissipation Factor<br>(tanδ)                                 | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                 | 10V                                   | 16V  | 25V  | 35V  | 50V                 |
|                                                              | tanδ (Max.)                                                                                                                                                                                                      | 0.20                                  | 0.16 | 0.14 | 0.12 | 0.10                |
|                                                              | When nominal capacitance exceeds 1,000μF, add 0.02 to the above value for each 1,000μF increase.                                                                                                                 |                                       |      |      |      | (at 20°C, 120Hz)    |
| Low Temperature<br>Characteristics<br>(Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                 | 10V                                   | 16V  | 25V  | 35V  | 50V                 |
|                                                              | Z(-25°C)/Z(+20°C)                                                                                                                                                                                                | 3                                     | 2    | 2    | 2    | 2                   |
|                                                              | Z(-40°C)/Z(+20°C)                                                                                                                                                                                                | 6                                     | 4    | 4    | 4    | 4                   |
|                                                              |                                                                                                                                                                                                                  |                                       |      |      |      | (at 120Hz)          |
| Endurance                                                    | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 10,000 hours (5,000 hours for φ10) at 125°C. |                                       |      |      |      |                     |
|                                                              | Capacitance change                                                                                                                                                                                               | ≤±30% of the initial value            |      |      |      |                     |
|                                                              | D.F. (tanδ)                                                                                                                                                                                                      | ≤±300% of the initial specified value |      |      |      |                     |
|                                                              | Leakage current                                                                                                                                                                                                  | ≤The initial specified value          |      |      |      |                     |
| Shelf Life                                                   | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 125°C without voltage applied.                                                   |                                       |      |      |      |                     |
|                                                              | Capacitance change                                                                                                                                                                                               | ≤±30% of the initial value            |      |      |      |                     |
|                                                              | D.F. (tanδ)                                                                                                                                                                                                      | ≤±300% of the initial specified value |      |      |      |                     |
|                                                              | Leakage current                                                                                                                                                                                                  | ≤The initial specified value          |      |      |      |                     |

## ◆ DIMENSIONS [mm]

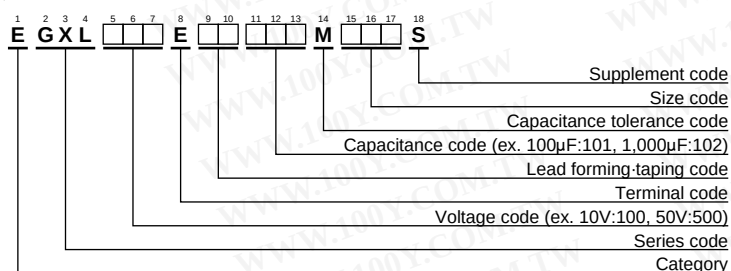
- Terminal Code : E



|     |            |      |     |
|-----|------------|------|-----|
| φD  | 10         | 12.5 | 16  |
| φd  | 0.6        | 0.6  | 0.8 |
| F   | 5.0        | 5.0  | 7.5 |
| φD' | φD+0.5max. |      |     |
| L'  | L+1.5max.  |      |     |

Gas escape end seal

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Longer life, 125°C

GXL Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ω <sub>max</sub> /20°C, 100kHz) | Rated ripple current<br>(mA <sub>rms</sub> /125°C, 100kHz) | Part No.           |
|-------------|-------------|-----------------------|-----------------------------------------------|------------------------------------------------------------|--------------------|
| 10          | 330         | 10 × 12.5             | 0.17                                          | 800                                                        | EGXL100E□□331MJC5S |
|             | 470         | 10 × 12.5             | 0.17                                          | 800                                                        | EGXL100E□□471MJC5S |
|             | 1,000       | 10 × 20               | 0.094                                         | 1,300                                                      | EGXL100E□□102MJ20S |
|             | 2,200       | 12.5 × 25             | 0.055                                         | 2,050                                                      | EGXL100E□□222MK25S |
|             | 3,300       | 16 × 25               | 0.035                                         | 2,500                                                      | EGXL100E□□332ML25S |
|             | 4,700       | 16 × 31.5             | 0.027                                         | 3,000                                                      | EGXL100E□□472MLN3S |
| 16          | 220         | 10 × 12.5             | 0.17                                          | 800                                                        | EGXL160E□□221MJC5S |
|             | 330         | 10 × 12.5             | 0.17                                          | 800                                                        | EGXL160E□□331MJC5S |
|             | 470         | 10 × 16               | 0.12                                          | 1,050                                                      | EGXL160E□□471MJ16S |
|             | 1,000       | 12.5 × 20             | 0.067                                         | 1,650                                                      | EGXL160E□□102MK20S |
|             | 2,200       | 16 × 25               | 0.035                                         | 2,500                                                      | EGXL160E□□222ML25S |
|             | 3,300       | 16 × 31.5             | 0.027                                         | 3,000                                                      | EGXL160E□□332MLN3S |
| 25          | 220         | 10 × 12.5             | 0.17                                          | 800                                                        | EGXL250E□□221MJC5S |
|             | 330         | 10 × 16               | 0.12                                          | 1,050                                                      | EGXL250E□□331MJ16S |
|             | 470         | 10 × 20               | 0.094                                         | 1,300                                                      | EGXL250E□□471MJ20S |
|             | 1,000       | 12.5 × 25             | 0.055                                         | 2,050                                                      | EGXL250E□□102MK25S |
|             | 2,200       | 16 × 31.5             | 0.027                                         | 3,000                                                      | EGXL250E□□222MLN3S |
| 35          | 100         | 10 × 12.5             | 0.17                                          | 800                                                        | EGXL350E□□101MJC5S |
|             | 220         | 10 × 16               | 0.12                                          | 1,050                                                      | EGXL350E□□221MJ16S |
|             | 330         | 10 × 20               | 0.094                                         | 1,300                                                      | EGXL350E□□331MJ20S |
|             | 470         | 12.5 × 20             | 0.067                                         | 1,650                                                      | EGXL350E□□471MK20S |
|             | 1,000       | 16 × 25               | 0.035                                         | 2,500                                                      | EGXL350E□□102ML25S |
| 50          | 100         | 10 × 12.5             | 0.30                                          | 590                                                        | EGXL500E□□101MJC5S |
|             | 220         | 10 × 20               | 0.19                                          | 970                                                        | EGXL500E□□221MJ20S |
|             | 330         | 12.5 × 20             | 0.11                                          | 1,380                                                      | EGXL500E□□331MK20S |
|             | 470         | 12.5 × 25             | 0.085                                         | 1,700                                                      | EGXL500E□□471MK25S |
|             | 1,000       | 16 × 31.5             | 0.043                                         | 2,490                                                      | EGXL500E□□102MLN3S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance(μF) | 120  | 1k   | 10k  | 100k |
|-----------------|------|------|------|------|
| 100             | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 470      | 0.50 | 0.85 | 0.94 | 1.00 |
| 1,000           | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,300  | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700           | 0.85 | 0.95 | 0.98 | 1.00 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For airbag module, 105°C

Upgrade!

# LBG Series

- For airbag application
- High capacitance, low impedance, and good low temperature behavior
- Endurance with ripple current : 5,000 hours at 105°C
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant



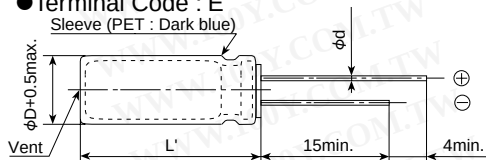
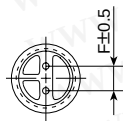
## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                           |                                      |      |                  |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------------------|
| Category                                               | -55 to +105°C                                                                                                                                                                             |                                      |      |                  |
| Temperature Range                                      |                                                                                                                                                                                           |                                      |      |                  |
| Rated Voltage Range                                    | 25 & 35V <sub>dc</sub>                                                                                                                                                                    |                                      |      |                  |
| Capacitance Range                                      | 1,000 to 11,000μF                                                                                                                                                                         |                                      |      | (at 20°C, 120Hz) |
| Capacitance Tolerance                                  | 0 to +30% (A)                                                                                                                                                                             |                                      |      | (at 20°C, 120Hz) |
| Leakage Current                                        | I=0.01CV<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                                           |                                      |      |                  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 25V                                  | 35V  | (at 20°C, 120Hz) |
|                                                        | tanδ (Max.)                                                                                                                                                                               | 0.20                                 | 0.16 |                  |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.                                                                                          |                                      |      |                  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                          | 25V                                  | 35V  | (at 120Hz)       |
|                                                        | Z(-55°C)/Z(+20°C)                                                                                                                                                                         | 3                                    | 3    |                  |
|                                                        | Impedance at -40°C and 20°C 100kHz in the STANDARD RATINGS                                                                                                                                |                                      |      |                  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 5,000 hours at 105°C. |                                      |      |                  |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |      |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |      |                  |
|                                                        | Leakage current                                                                                                                                                                           | ≤The initial specified value         |      |                  |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                            |                                      |      |                  |
|                                                        | Capacitance change                                                                                                                                                                        | ≤±20% of the initial value           |      |                  |
|                                                        | D.F. (tanδ)                                                                                                                                                                               | ≤200% of the initial specified value |      |                  |
|                                                        | Leakage current                                                                                                                                                                           | ≤The initial specified value         |      |                  |

## ◆ DIMENSIONS [mm]

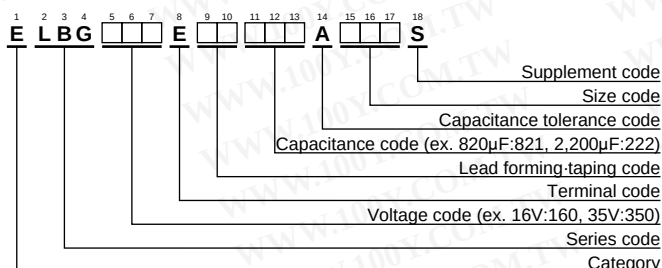
## ● Terminal Code : E

Sleeve (PET : Dark blue)



| φD | 12.5      | 14.5 | 16  | 18  |
|----|-----------|------|-----|-----|
| φd | 0.6       | 0.6  | 0.8 | 0.8 |
| F  | 5.0       | 5.0  | 7.5 | 7.5 |
| L' | L+1.5max. |      |     |     |

## ◆ PART NUMBERING SYSTEM



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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For airbag module, 105°C

Upgrade!

LBG Series

## ◆STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance (Ωmax/100kHz) |       | Rated ripple current<br>(mA rms/105°C, 100kHz) | Part No.           |
|-------------|-------------|-----------------------|-------------------------|-------|------------------------------------------------|--------------------|
|             |             |                       | 20°C                    | -40°C |                                                |                    |
| 25          | 1,700       | 12.5 × 20             | 0.057                   | 0.29  | 1,700                                          | ELBG250E□□172AK20S |
|             | 2,400       | 12.5 × 25             | 0.045                   | 0.23  | 2,000                                          | ELBG250E□□242AK25S |
|             | 2,400       | 14.5 × 20             | 0.051                   | 0.26  | 2,000                                          | ELBG250E□□242AU20S |
|             | 2,800       | 12.5 × 30             | 0.039                   | 0.20  | 2,300                                          | ELBG250E□□282AK30S |
|             | 3,000       | 16 × 20               | 0.044                   | 0.22  | 2,250                                          | ELBG250E□□302AL20S |
|             | 3,400       | 14.5 × 25             | 0.041                   | 0.21  | 2,400                                          | ELBG250E□□342AU25S |
|             | 3,500       | 12.5 × 35             | 0.033                   | 0.17  | 2,700                                          | ELBG250E□□352AK35S |
|             | 4,200       | 16 × 25               | 0.033                   | 0.17  | 2,600                                          | ELBG250E□□422AL25S |
|             | 4,200       | 18 × 20               | 0.042                   | 0.21  | 2,500                                          | ELBG250E□□422AM20S |
|             | 4,500       | 12.5 × 40             | 0.027                   | 0.14  | 3,100                                          | ELBG250E□□452AK40S |
|             | 4,600       | 14.5 × 31.5           | 0.032                   | 0.16  | 2,700                                          | ELBG250E□□462AUN3S |
|             | 5,400       | 14.5 × 35.5           | 0.028                   | 0.14  | 3,100                                          | ELBG250E□□542AUP1S |
|             | 5,600       | 16 × 31.5             | 0.026                   | 0.13  | 3,200                                          | ELBG250E□□562ALN3S |
|             | 6,000       | 18 × 25               | 0.030                   | 0.15  | 2,800                                          | ELBG250E□□602AM25S |
|             | 6,400       | 14.5 × 40             | 0.025                   | 0.13  | 3,400                                          | ELBG250E□□642AU40S |
|             | 6,600       | 16 × 35.5             | 0.023                   | 0.12  | 3,500                                          | ELBG250E□□662ALP1S |
|             | 7,800       | 16 × 40               | 0.021                   | 0.11  | 3,800                                          | ELBG250E□□782AL40S |
|             | 7,900       | 18 × 31.5             | 0.024                   | 0.12  | 3,500                                          | ELBG250E□□792AMN3S |
| 35          | 9,200       | 18 × 35.5             | 0.022                   | 0.11  | 3,700                                          | ELBG250E□□922AMP1S |
|             | 11,000      | 18 × 40               | 0.020                   | 0.10  | 4,000                                          | ELBG250E□□113AM40S |
|             | 1,000       | 12.5 × 20             | 0.057                   | 0.29  | 1,700                                          | ELBG350E□□102AK20S |
|             | 1,400       | 12.5 × 25             | 0.045                   | 0.23  | 2,000                                          | ELBG350E□□142AK25S |
|             | 1,400       | 14.5 × 20             | 0.051                   | 0.26  | 2,000                                          | ELBG350E□□142AU20S |
|             | 1,600       | 12.5 × 30             | 0.039                   | 0.20  | 2,300                                          | ELBG350E□□162AK30S |
|             | 1,800       | 16 × 20               | 0.044                   | 0.22  | 2,250                                          | ELBG350E□□182AL20S |
|             | 2,000       | 14.5 × 25             | 0.041                   | 0.21  | 2,400                                          | ELBG350E□□202AU25S |
|             | 2,100       | 12.5 × 35             | 0.033                   | 0.17  | 2,700                                          | ELBG350E□□212AK35S |
|             | 2,500       | 16 × 25               | 0.033                   | 0.17  | 2,600                                          | ELBG350E□□252AL25S |
|             | 2,500       | 18 × 20               | 0.042                   | 0.21  | 2,500                                          | ELBG350E□□252AM20S |
|             | 2,700       | 12.5 × 40             | 0.027                   | 0.14  | 3,100                                          | ELBG350E□□272AK40S |
|             | 2,800       | 14.5 × 31.5           | 0.032                   | 0.16  | 2,700                                          | ELBG350E□□282AUN3S |
|             | 3,200       | 14.5 × 35.5           | 0.028                   | 0.14  | 3,100                                          | ELBG350E□□322AUP1S |
|             | 3,400       | 16 × 31.5             | 0.026                   | 0.13  | 3,200                                          | ELBG350E□□342ALN3S |
|             | 3,600       | 18 × 25               | 0.030                   | 0.15  | 2,800                                          | ELBG350E□□362AM25S |
|             | 3,800       | 14.5 × 40             | 0.025                   | 0.13  | 3,400                                          | ELBG350E□□382AU40S |
|             | 4,000       | 16 × 35.5             | 0.023                   | 0.12  | 3,500                                          | ELBG350E□□402ALP1S |
|             | 4,700       | 16 × 40               | 0.021                   | 0.11  | 3,800                                          | ELBG350E□□472AL40S |
|             | 4,800       | 18 × 31.5             | 0.024                   | 0.12  | 3,500                                          | ELBG350E□□482AMN3S |
|             | 5,600       | 18 × 35.5             | 0.022                   | 0.11  | 3,700                                          | ELBG350E□□562AMP1S |
|             | 6,700       | 18 × 40               | 0.020                   | 0.10  | 4,000                                          | ELBG350E□□672AM40S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|------------------|----------------|------|------|------|------|
| 1,000 to 2,000   |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,100 to 3,800   |                | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,000 to 11,000  |                | 0.85 | 0.95 | 0.98 | 1.00 |

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[Http://www.100y.com.tw](http://www.100y.com.tw)

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For computer motherboard

New!

## KZJ Series

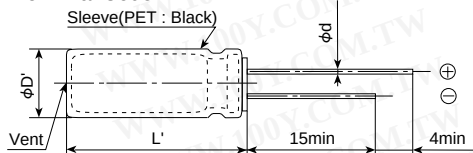
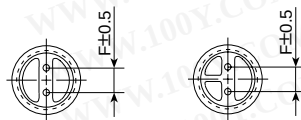
- Super low ESR/impedance capacitors due to very low resistivity electrolyte
- Rated voltage range : 6.3 to 16V, Nominal capacitance range : 470 to 3,300 $\mu$ F
- Endurance with ripple current : 2,000 hours at 105°C
- The KZJ series capacitors are designed for computer motherboards
- Non solvent-proof
- RoHS Compliant

## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                |                                      |      |              |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|--------------|
| Category                                               | Temperature Range                                                                                                                                                              |                                      |      |              |
| Rated Voltage Range                                    | -40 to +105°C                                                                                                                                                                  |                                      |      |              |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                      |                                      |      |              |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V <sub>dc</sub> ) (at 20°C after 2 minutes)   |                                      |      |              |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                               | 6.3V                                 | 10V  | 16V          |
|                                                        | tanδ (Max.)                                                                                                                                                                    | 0.22                                 | 0.19 | 0.16         |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                              |                                      |      |              |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                               | 6.3V                                 | 10V  | 16V          |
|                                                        | Z (-25°C) / Z (+20°C)                                                                                                                                                          | 2                                    | 2    | 2            |
|                                                        | Z (-40°C) / Z (+20°C)                                                                                                                                                          | 3                                    | 3    | 3 (at 120Hz) |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current for 2,000 hours at 105°C. |                                      |      |              |
|                                                        | Capacitance change                                                                                                                                                             | ≤±25% of the initial measured value  |      |              |
|                                                        | D.F. (tanδ)                                                                                                                                                                    | ≤200% of the initial specified value |      |              |
|                                                        | Leakage current                                                                                                                                                                | ≤The initial specified value         |      |              |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied.                   |                                      |      |              |
|                                                        | Capacitance change                                                                                                                                                             | ≤±25% of the initial measured value  |      |              |
|                                                        | D.F. (tanδ)                                                                                                                                                                    | ≤200% of the initial specified value |      |              |
|                                                        | Leakage current                                                                                                                                                                | ≤The initial specified value         |      |              |

## ◆ DIMENSIONS [mm]

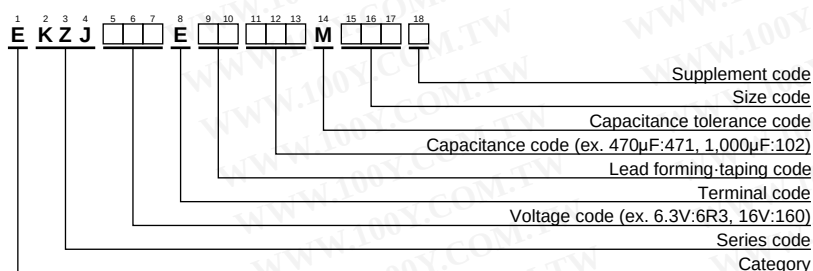
- Terminal Code : E



Gas escaped end seal

| $\phi D$  | 8                           | 10  | 12.5 |
|-----------|-----------------------------|-----|------|
| $\phi d$  | 0.6                         | 0.6 | 0.6  |
| F         | 3.5                         | 5.0 | 5.0  |
| $\phi D'$ | $\phi D + 0.5 \text{ max.}$ |     |      |
| L'        | $L + 1.5 \text{ max.}$      |     |      |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For computer motherboard

New!  
**KZJ Series**

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## ◆STANDARD RATINGS

| WV(Vdc) | Cap(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ωmax/20°C, 100kHz) | Rated ripple current<br>(mA <sub>rms</sub> /105°C, 100kHz) | Part No.           |
|---------|---------|-----------------------|----------------------------------|------------------------------------------------------------|--------------------|
| 6.3     | 1,000   | 8×11.5                | 0.021                            | 1,310                                                      | EKZJ6R3E□□102MHB5D |
|         | 1,200   | 8×15                  | 0.018                            | 1,850                                                      | EKZJ6R3E□□122MH15D |
|         | 1,500   | 8×20                  | 0.012                            | 2,350                                                      | EKZJ6R3E□□152MH20D |
|         | 1,500   | 10×12.5               | 0.018                            | 1,960                                                      | EKZJ6R3E□□152MJC5S |
|         | 1,800   | 8×20                  | 0.012                            | 2,350                                                      | EKZJ6R3E□□182MH20D |
|         | 1,800   | 10×16                 | 0.0125                           | 2,460                                                      | EKZJ6R3E□□182MJ16S |
|         | 2,200   | 8×20                  | 0.012                            | 2,350                                                      | EKZJ6R3E□□222MH20D |
|         | 2,200   | 8×25                  | 0.011                            | 2,710                                                      | EKZJ6R3E□□222MH25D |
|         | 2,200   | 10×16                 | 0.0125                           | 2,460                                                      | EKZJ6R3E□□222MJ16S |
|         | 2,200   | 10×20                 | 0.011                            | 2,920                                                      | EKZJ6R3E□□222MJ20S |
|         | 2,700   | 10×20                 | 0.011                            | 2,920                                                      | EKZJ6R3E□□272MJ20S |
|         | 3,300   | 10×25                 | 0.009                            | 3,230                                                      | EKZJ6R3E□□332MJ25S |
| 10      | 680     | 8×11.5                | 0.021                            | 1,310                                                      | EKZJ100E□□681MHB5D |
|         | 1,000   | 8×15                  | 0.018                            | 1,850                                                      | EKZJ100E□□102MH15D |
|         | 1,000   | 10×12.5               | 0.018                            | 1,960                                                      | EKZJ100E□□102MJC5S |
|         | 1,500   | 8×20                  | 0.012                            | 2,350                                                      | EKZJ100E□□152MH20D |
|         | 1,500   | 8×25                  | 0.011                            | 2,710                                                      | EKZJ100E□□152MH25D |
|         | 1,500   | 10×16                 | 0.0125                           | 2,460                                                      | EKZJ100E□□152MJ16S |
|         | 1,800   | 10×20                 | 0.011                            | 2,920                                                      | EKZJ100E□□182MJ20S |
|         | 2,200   | 10×25                 | 0.009                            | 3,230                                                      | EKZJ100E□□222MJ25S |
| 16      | 470     | 8×11.5                | 0.021                            | 1,310                                                      | EKZJ160E□□471MHB5D |
|         | 680     | 8×15                  | 0.018                            | 1,850                                                      | EKZJ160E□□681MH15D |
|         | 680     | 10×12.5               | 0.018                            | 1,960                                                      | EKZJ160E□□681MJC5S |
|         | 1,000   | 8×20                  | 0.012                            | 2,350                                                      | EKZJ160E□□102MH20D |
|         | 1,000   | 8×25                  | 0.011                            | 2,710                                                      | EKZJ160E□□102MH25D |
|         | 1,000   | 10×16                 | 0.0125                           | 2,460                                                      | EKZJ160E□□102MJ16S |
|         | 1,500   | 10×20                 | 0.011                            | 2,920                                                      | EKZJ160E□□152MJ20S |
|         | 1,800   | 10×25                 | 0.009                            | 3,230                                                      | EKZJ160E□□182MJ25S |
|         | 2,200   | 12.5×20               | 0.009                            | 3,220                                                      | EKZJ160E□□222MK20S |
|         | 2,700   | 12.5×25               | 0.008                            | 3,370                                                      | EKZJ160E□□272MK25S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance(μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|----------------|------|------|------|------|
| 470             |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800    |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,300  |                | 0.75 | 0.90 | 0.95 | 1.00 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.  
 When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For computer motherboard

## KZG Series

- Super low ESR/impedance capacitors due to very low resistivity electrolyte
- Rated voltage range : 6.3 to 16V, Nominal capacitance range : 470 to 3,300 $\mu$ F
- Endurance with ripple current : 2,000 hours at 105°C
- The KZG series capacitors are designed for computer motherboards
- Non solvent-proof
- RoHS Compliant

KZV  
Lower Z  
KZJ  
Lower Z

KZG

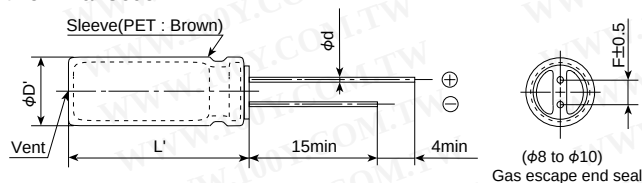


## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                |                                      |      |              |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|--------------|
| Category                                               | Temperature Range                                                                                                                                                              |                                      |      |              |
| Temperature Range                                      | -40 to +105°C                                                                                                                                                                  |                                      |      |              |
| Rated Voltage Range                                    | 6.3 to 16V <sub>dc</sub>                                                                                                                                                       |                                      |      |              |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                      |                                      |      |              |
| Leakage Current                                        | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V <sub>dc</sub> ) (at 20°C after 2 minutes)   |                                      |      |              |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                               | 6.3V                                 | 10V  | 16V          |
|                                                        | tanδ (Max.)                                                                                                                                                                    | 0.22                                 | 0.19 | 0.16         |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                              |                                      |      |              |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                               | 6.3V                                 | 10V  | 16V          |
|                                                        | Z (-25°C) / Z (+20°C)                                                                                                                                                          | 2                                    | 2    | 2            |
|                                                        | Z (-40°C) / Z (+20°C)                                                                                                                                                          | 3                                    | 3    | 3 (at 120Hz) |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current for 2,000 hours at 105°C. |                                      |      |              |
|                                                        | Capacitance change                                                                                                                                                             | ≤±25% of the initial measured value  |      |              |
|                                                        | D.F. (tanδ)                                                                                                                                                                    | ≤200% of the initial specified value |      |              |
|                                                        | Leakage current                                                                                                                                                                | ≤The initial specified value         |      |              |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.                 |                                      |      |              |
|                                                        | Capacitance change                                                                                                                                                             | ≤±25% of the initial measured value  |      |              |
|                                                        | D.F. (tanδ)                                                                                                                                                                    | ≤200% of the initial specified value |      |              |
|                                                        | Leakage current                                                                                                                                                                | ≤The initial specified value         |      |              |

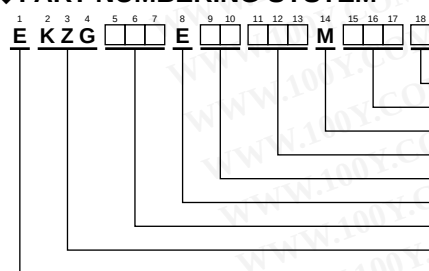
## ◆ DIMENSIONS [mm]

- Terminal Code : E



| $\phi D$  | 8                           | 10  |
|-----------|-----------------------------|-----|
| $\phi d$  | 0.6                         | 0.6 |
| F         | 3.5                         | 5.0 |
| $\phi D'$ | $\phi D + 0.5 \text{ max.}$ |     |
| L'        | L + 1.5 max.                |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For computer motherboard

KZG Series

## ◆STANDARD RATINGS

| WV(Vdc) | Cap(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ω <sub>max</sub> /20°C, 100kHz) | Rated ripple current<br>(mA <sub>rms</sub> /105°C, 100kHz) | Part No.           |
|---------|---------|-----------------------|-----------------------------------------------|------------------------------------------------------------|--------------------|
| 6.3     | 820     | 8×11.5                | 0.036                                         | 1,140                                                      | EKZG6R3E□□821MHB5D |
|         | 1,200   | 8×15                  | 0.028                                         | 1,490                                                      | EKZG6R3E□□122MH15D |
|         | 1,500   | 10×12.5               | 0.026                                         | 1,540                                                      | EKZG6R3E□□152MJC5S |
|         | 1,800   | 8×20                  | 0.021                                         | 1,870                                                      | EKZG6R3E□□182MH20D |
|         | 1,800   | 10×16                 | 0.019                                         | 2,000                                                      | EKZG6R3E□□182MJ16S |
|         | 2,200   | 10×20                 | 0.013                                         | 2,550                                                      | EKZG6R3E□□222MJ20S |
|         | 3,300   | 10×25                 | 0.012                                         | 2,800                                                      | EKZG6R3E□□332MJ25S |
| 10      | 680     | 8×11.5                | 0.036                                         | 1,140                                                      | EKZG100E□□681MHB5D |
|         | 1,000   | 8×15                  | 0.028                                         | 1,490                                                      | EKZG100E□□102MH15D |
|         | 1,000   | 10×12.5               | 0.026                                         | 1,540                                                      | EKZG100E□□102MJC5S |
|         | 1,500   | 8×20                  | 0.021                                         | 1,870                                                      | EKZG100E□□152MH20D |
|         | 1,500   | 10×16                 | 0.019                                         | 2,000                                                      | EKZG100E□□152MJ16S |
|         | 1,800   | 10×20                 | 0.013                                         | 2,550                                                      | EKZG100E□□182MJ20S |
|         | 2,200   | 10×25                 | 0.012                                         | 2,800                                                      | EKZG100E□□222MJ25S |
| 16      | 470     | 8×11.5                | 0.036                                         | 1,140                                                      | EKZG160E□□471MHB5D |
|         | 680     | 8×15                  | 0.028                                         | 1,490                                                      | EKZG160E□□681MH15D |
|         | 680     | 10×12.5               | 0.026                                         | 1,540                                                      | EKZG160E□□681MJC5S |
|         | 1,000   | 8×20                  | 0.021                                         | 1,870                                                      | EKZG160E□□102MH20D |
|         | 1,000   | 10×16                 | 0.019                                         | 2,000                                                      | EKZG160E□□102MJ16S |
|         | 1,500   | 10×20                 | 0.013                                         | 2,550                                                      | EKZG160E□□152MJ20S |
|         | 1,800   | 10×25                 | 0.012                                         | 2,800                                                      | EKZG160E□□182MJ25S |

□□ : Lead forming / Taping code

## ◆RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance(μF) | Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|----------------|------|------|------|------|
| 470             |                | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800    |                | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 3,300  |                | 0.75 | 0.90 | 0.95 | 1.00 |

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[Http://www.100y.com.tw](http://www.100y.com.tw)

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low leakage current, 85°C

# LLA Series

- Endurance : 1,000 hours at 85°C
- Solvent-proof (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

LLA

↑ Lower LC  
SME



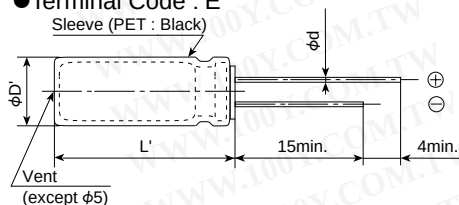
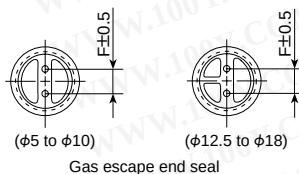
## ◆ SPECIFICATIONS

| Items                           | Characteristics                                                                                                                                                                                                                            |                                      |      |      |      |      |      |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|
| Category                        |                                                                                                                                                                                                                                            |                                      |      |      |      |      |      |
| Temperature Range               | -40 to +85°C                                                                                                                                                                                                                               |                                      |      |      |      |      |      |
| Rated Voltage Range             | 6.3 to 50V <sub>dc</sub>                                                                                                                                                                                                                   |                                      |      |      |      |      |      |
| Capacitance Tolerance           | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                                                  |                                      |      |      |      |      |      |
| Leakage Current                 | I=0.002CV or 0.2μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 1 minute)                                                                            |                                      |      |      |      |      |      |
| Dissipation Factor (tanδ)       | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                           | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V  |
|                                 | tanδ (Max.)                                                                                                                                                                                                                                | 0.24                                 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |
|                                 | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)                                                                                                                          |                                      |      |      |      |      |      |
| Low Temperature Characteristics | ○ Leakage current<br>Leakage current at 85°C : ≤10 times of the 20°C specified value<br>○ Max. Impedance Ratio (at 120Hz)<br>$Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})\leq 4$ , $Z(-40^{\circ}\text{C})/Z(+20^{\circ}\text{C})\leq 8$ |                                      |      |      |      |      |      |
| Endurance                       | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 85°C.                                                                                       |                                      |      |      |      |      |      |
|                                 | Capacitance change                                                                                                                                                                                                                         | ≤±20% of the initial value           |      |      |      |      |      |
|                                 | D.F. (tanδ)                                                                                                                                                                                                                                | ≤150% of the initial specified value |      |      |      |      |      |
|                                 | Leakage current                                                                                                                                                                                                                            | ≤The initial specified value         |      |      |      |      |      |
| Shelf Life                      | The same specifications as "Endurance" shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 85°C without voltage applied.                                                                      |                                      |      |      |      |      |      |
| Shelf Test                      | The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them for 6 months at a nominal temperature (-10 to +40°C) without voltage applied.                                                  |                                      |      |      |      |      |      |
|                                 | Capacitance change                                                                                                                                                                                                                         | ≤±20% of the initial value           |      |      |      |      |      |
|                                 | D.F. (tanδ)                                                                                                                                                                                                                                | ≤150% of the initial specified value |      |      |      |      |      |
|                                 | Leakage current                                                                                                                                                                                                                            | ≤The initial specified value         |      |      |      |      |      |

## ◆ DIMENSIONS [mm]

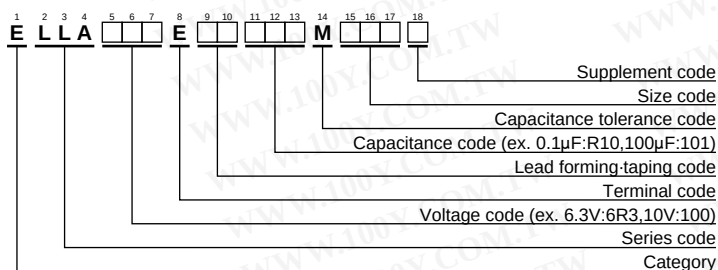
## ● Terminal Code : E

Sleeve (PET : Black)



| φD  | 5          | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd  | 0.5        | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F   | 2.0        | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| φD' | φD+0.5max. |     |     |     |      |     |     |
| L'  | L+1.5max.  |     |     |     |      |     |     |

## ◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Low leakage current, 85°C

LLA Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.            | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mA <sub>rms</sub> /85°C,120Hz) | Part No.            |
|----------|----------|--------------------|------|------------------------------------------------------|---------------------|----------|----------|--------------------|------|------------------------------------------------------|---------------------|
| 6.3      | 33       | 5×11               | 0.24 | 55                                                   | ELLA6R3E□□330ME11D  | 25       | 33       | 5×11               | 0.14 | 97                                                   | ELLA250E□□330ME11D  |
|          | 47       | 5×11               | 0.24 | 79                                                   | ELLA6R3E□□470ME11D  |          | 47       | 5×11               | 0.14 | 115                                                  | ELLA250E□□470ME11D  |
|          | 100      | 5×11               | 0.24 | 130                                                  | ELLA6R3E□□101ME11D  |          | 100      | 6.3×11             | 0.14 | 190                                                  | ELLA250E□□101MF11D  |
|          | 220      | 6.3×11             | 0.24 | 230                                                  | ELLA6R3E□□221MF11D  |          | 220      | 8×11.5             | 0.14 | 320                                                  | ELLA250E□□221MHB5D  |
|          | 330      | 6.3×11             | 0.24 | 280                                                  | ELLA6R3E□□331MF11D  |          | 330      | 10×12.5            | 0.14 | 470                                                  | ELLA250E□□331MJC5S  |
|          | 470      | 8×11.5             | 0.24 | 380                                                  | ELLA6R3E□□471MHB5D  |          | 470      | 10×16              | 0.14 | 620                                                  | ELLA250E□□471MJ16S  |
|          | 1,000    | 10×12.5            | 0.24 | 650                                                  | ELLA6R3E□□102MJC5S  |          | 1,000    | 12.5×20            | 0.14 | 1,090                                                | ELLA250E□□102MK20S  |
|          | 2,200    | 12.5×20            | 0.26 | 1,150                                                | ELLA6R3E□□222MK20S  |          | 2,200    | 16×25              | 0.16 | 1,660                                                | ELLA250E□□222ML25S  |
|          | 3,300    | 12.5×20            | 0.28 | 1,380                                                | ELLA6R3E□□332MK20S  |          | 3,300    | 16×31.5            | 0.18 | 2,070                                                | ELLA250E□□332MLN3S  |
|          | 4,700    | 16×25              | 0.30 | 1,880                                                | ELLA6R3E□□472ML25S  |          | 4,700    | 18×35.5            | 0.20 | 2,520                                                | ELLA250E□□472MMP1S  |
|          | 6,800    | 16×25              | 0.34 | 2,120                                                | ELLA6R3E□□682ML25S  |          | 6,800    | 18×40              | 0.24 | 2,830                                                | ELLA250E□□682MM40S  |
|          | 10,000   | 16×31.5            | 0.42 | 2,500                                                | ELLA6R3E□□103MLN3S  | 35       | 4.7      | 5×11               | 0.12 | 40                                                   | ELLA350E□□47R7ME11D |
| 10       | 15,000   | 18×35.5            | 0.52 | 2,990                                                | ELLA6R3E□□153MMP1S  |          | 10       | 5×11               | 0.12 | 58                                                   | ELLA350E□□100ME11D  |
|          | 22       | 5×11               | 0.20 | 59                                                   | ELLA100E□□220ME11D  |          | 22       | 5×11               | 0.12 | 87                                                   | ELLA350E□□220ME11D  |
|          | 33       | 5×11               | 0.20 | 84                                                   | ELLA100E□□330ME11D  |          | 33       | 5×11               | 0.12 | 105                                                  | ELLA350E□□330ME11D  |
|          | 47       | 5×11               | 0.20 | 100                                                  | ELLA100E□□470ME11D  |          | 47       | 6.3×11             | 0.12 | 145                                                  | ELLA350E□□470MF11D  |
|          | 100      | 5×11               | 0.20 | 145                                                  | ELLA100E□□101ME11D  |          | 100      | 8×11.5             | 0.12 | 240                                                  | ELLA350E□□101MHB5D  |
|          | 220      | 6.3×11             | 0.20 | 250                                                  | ELLA100E□□221MF11D  |          | 220      | 10×12.5            | 0.12 | 420                                                  | ELLA350E□□221MJC5S  |
|          | 330      | 8×11.5             | 0.20 | 350                                                  | ELLA100E□□331MHB5D  |          | 330      | 10×16              | 0.12 | 570                                                  | ELLA350E□□331MJ16S  |
|          | 470      | 8×11.5             | 0.20 | 415                                                  | ELLA100E□□471MHB5D  |          | 470      | 10×20              | 0.12 | 740                                                  | ELLA350E□□471MJ20S  |
|          | 1,000    | 10×16              | 0.20 | 790                                                  | ELLA100E□□102MJ16S  |          | 1,000    | 12.5×25            | 0.12 | 1,300                                                | ELLA350E□□102MK25S  |
|          | 2,200    | 12.5×20            | 0.22 | 1,240                                                | ELLA100E□□222MK20S  |          | 2,200    | 16×31.5            | 0.14 | 1,890                                                | ELLA350E□□222MLN3S  |
|          | 3,300    | 12.5×25            | 0.24 | 1,590                                                | ELLA100E□□332MK25S  |          | 3,300    | 18×35.5            | 0.16 | 2,340                                                | ELLA350E□□332MMP1S  |
|          | 4,700    | 16×25              | 0.26 | 1,980                                                | ELLA100E□□472ML25S  |          | 4,700    | 18×40              | 0.18 | 2,690                                                | ELLA350E□□472MM40S  |
| 16       | 6,800    | 16×31.5            | 0.30 | 2,390                                                | ELLA100E□□682MLN3S  | 50       | 0.10     | 5×11               | 0.10 | 1.3                                                  | ELLA500E□□R10ME11D  |
|          | 10,000   | 18×35.5            | 0.38 | 2,840                                                | ELLA100E□□103MMP1S  |          | 0.22     | 5×11               | 0.10 | 2.9                                                  | ELLA500E□□R22ME11D  |
|          | 10       | 5×11               | 0.16 | 44                                                   | ELLA160E□□100ME11D  |          | 0.33     | 5×11               | 0.10 | 4.4                                                  | ELLA500E□□R33ME11D  |
|          | 22       | 5×11               | 0.16 | 75                                                   | ELLA160E□□220ME11D  |          | 0.47     | 5×11               | 0.10 | 11                                                   | ELLA500E□□R47ME11D  |
|          | 33       | 5×11               | 0.16 | 90                                                   | ELLA160E□□330ME11D  |          | 1.0      | 5×11               | 0.10 | 17                                                   | ELLA500E□□R10ME11D  |
|          | 47       | 5×11               | 0.16 | 110                                                  | ELLA160E□□470ME11D  |          | 2.2      | 5×11               | 0.10 | 25                                                   | ELLA500E□□R22ME11D  |
|          | 100      | 6.3×11             | 0.16 | 180                                                  | ELLA160E□□101MF11D  |          | 3.3      | 5×11               | 0.10 | 35                                                   | ELLA500E□□R33ME11D  |
|          | 220      | 8×11.5             | 0.16 | 300                                                  | ELLA160E□□221MHB5D  |          | 4.7      | 5×11               | 0.10 | 42                                                   | ELLA500E□□R47ME11D  |
|          | 330      | 8×11.5             | 0.16 | 370                                                  | ELLA160E□□331MHB5D  |          | 10       | 5×11               | 0.10 | 65                                                   | ELLA500E□□100ME11D  |
|          | 470      | 10×12.5            | 0.16 | 520                                                  | ELLA160E□□471MJC5S  |          | 22       | 5×11               | 0.10 | 95                                                   | ELLA500E□□220ME11D  |
|          | 1,000    | 10×20              | 0.16 | 910                                                  | ELLA160E□□102MJ20S  |          | 33       | 6.3×11             | 0.10 | 125                                                  | ELLA500E□□330MF11D  |
|          | 2,200    | 12.5×25            | 0.18 | 1,420                                                | ELLA160E□□222MK25S  |          | 47       | 6.3×11             | 0.10 | 150                                                  | ELLA500E□□470MF11D  |
|          | 3,300    | 16×25              | 0.20 | 1,840                                                | ELLA160E□□332ML25S  |          | 100      | 8×11.5             | 0.10 | 255                                                  | ELLA500E□□101MHB5D  |
| 25       | 4,700    | 16×31.5            | 0.22 | 2,260                                                | ELLA160E□□472MLN3S  |          | 220      | 10×16              | 0.10 | 490                                                  | ELLA500E□□221MJ16S  |
|          | 6,800    | 18×35.5            | 0.26 | 2,690                                                | ELLA160E□□682MMP1S  |          | 330      | 10×20              | 0.10 | 650                                                  | ELLA500E□□331MJ20S  |
|          | 10,000   | 18×40              | 0.34 | 2,920                                                | ELLA160E□□103MM40S  |          | 470      | 12.5×20            | 0.10 | 860                                                  | ELLA500E□□471MK20S  |
|          | 4.7      | 5×11               | 0.14 | 31                                                   | ELLA250E□□47R7ME11D |          | 1,000    | 16×25              | 0.10 | 1,530                                                | ELLA500E□□102ML25S  |
|          | 10       | 5×11               | 0.14 | 54                                                   | ELLA250E□□100ME11D  |          | 2,200    | 18×35.5            | 0.12 | 2,160                                                | ELLA500E□□222MMP1S  |
|          | 22       | 5×11               | 0.14 | 80                                                   | ELLA250E□□220ME11D  |          |          |                    |      |                                                      |                     |

□□ : Lead forming / Taping code

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## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

For strobe flash

# PH Series

●RoHS Compliant

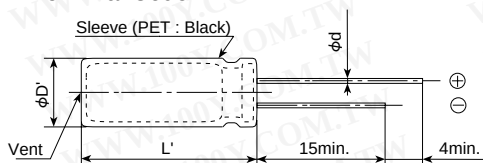
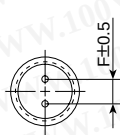


## ◆SPECIFICATIONS

| Items                                | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                            |             |                                      |                 |                                      |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------|-------------|--------------------------------------|-----------------|--------------------------------------|
| Category                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                            |             |                                      |                 |                                      |
| Temperature Range                    | -20 to +55°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                            |             |                                      |                 |                                      |
| Rated Voltage Range                  | 300 & 330V <sub>dc</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                            |             |                                      |                 |                                      |
| Capacitance Tolerance                | -10 to +20% (V) (at 20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                            |             |                                      |                 |                                      |
| Leakage Current                      | I=1XC<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF) (at 20°C after 5 minutes)                                                                                                                                                                                                                                                                                                                                                                                               |                    |                            |             |                                      |                 |                                      |
| Dissipation Factor (tanδ)            | 0.06max. (at 20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                            |             |                                      |                 |                                      |
| Charge and Discharge Characteristics | The following specifications shall be satisfied when the capacitors are restored to 20°C after charge and discharge are repeated 5,000 times at room temperature (5 to 35°C). Discharge resistance or Xenon tube : 0.7 to 1.0Ω.<br><table border="1"> <tr> <td>Capacitance change</td><td>≤±10% of the initial value</td></tr> <tr> <td>D.F. (tanδ)</td><td>≤150% of the initial specified value</td></tr> <tr> <td>Leakage current</td><td>≤150% of the initial specified value</td></tr> </table> | Capacitance change | ≤±10% of the initial value | D.F. (tanδ) | ≤150% of the initial specified value | Leakage current | ≤150% of the initial specified value |
| Capacitance change                   | ≤±10% of the initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                            |             |                                      |                 |                                      |
| D.F. (tanδ)                          | ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                            |             |                                      |                 |                                      |
| Leakage current                      | ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                            |             |                                      |                 |                                      |
| Shelf Life                           | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 55°C without voltage applied.<br><table border="1"> <tr> <td>Capacitance change</td><td>≤±10% of the initial value</td></tr> <tr> <td>D.F. (tanδ)</td><td>≤150% of the initial specified value</td></tr> <tr> <td>Leakage current</td><td>≤150% of the initial specified value</td></tr> </table>                                                                   | Capacitance change | ≤±10% of the initial value | D.F. (tanδ) | ≤150% of the initial specified value | Leakage current | ≤150% of the initial specified value |
| Capacitance change                   | ≤±10% of the initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                            |             |                                      |                 |                                      |
| D.F. (tanδ)                          | ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                            |             |                                      |                 |                                      |
| Leakage current                      | ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                            |             |                                      |                 |                                      |

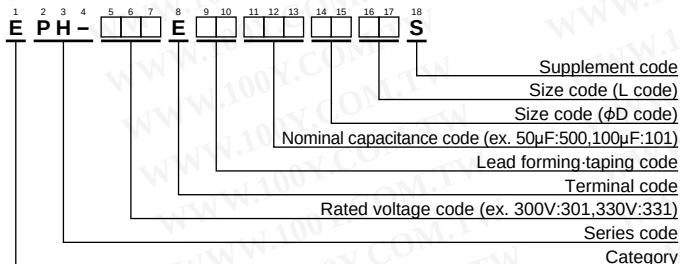
## ◆DIMENSIONS [mm]

●Terminal Code : E



| φD  | 6.0 to 7.5 | 8.0 to 8.5 | 9.0 to 9.5 | 10.0 to 14.0 | 14.5 to 18 |
|-----|------------|------------|------------|--------------|------------|
| φd  | 0.5        | 0.6        | 0.6        | 0.6          | 0.8        |
| F   | 2.5        | 3.5        | 4          | 5            | 7.5        |
| φD' | φD+0.5max. |            |            |              |            |
| L'  | L+1.0max.  |            |            |              |            |

## ◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

## ●Size Code

φD code (14th, 15th)

| φD(mm) | 14th | 15th |
|--------|------|------|
| 6.0    | 6    | 0    |
| 6.5    | 6    | 5    |
| 7.0    | 7    | 0    |
| 7.5    | 7    | 5    |
| 8.0    | 8    | 0    |
| 8.5    | 8    | 5    |
| 9.0    | 9    | 0    |
| 9.5    | 9    | 5    |
| 10.0   | A    | 0    |
| 10.5   | A    | 5    |
| 11.0   | B    | 0    |
| 11.5   | B    | 5    |
| 12.0   | C    | 0    |
| 12.5   | C    | 5    |
| 13.0   | D    | 0    |
| 13.5   | D    | 5    |
| 14.0   | E    | 0    |
| 14.5   | E    | 5    |
| 15.0   | F    | 0    |
| 15.5   | F    | 5    |
| 16.0   | G    | 0    |
| 16.5   | G    | 5    |
| 17.0   | H    | 0    |
| 17.5   | H    | 5    |
| 18.0   | J    | 0    |

L code (16th, 17th)

| L(mm) | 16th | 17th |
|-------|------|------|
| 15.0  | 1    | 5    |
| 16.0  | 1    | 6    |
| 17.0  | 1    | 7    |
| 18.0  | 1    | 8    |
| 19.0  | 1    | 9    |
| 20.0  | 2    | 0    |
| 21.0  | 2    | 1    |
| 22.0  | 2    | 2    |
| 23.0  | 2    | 3    |
| 24.0  | 2    | 4    |
| 25.0  | 2    | 5    |
| 26.0  | 2    | 6    |
| 27.0  | 2    | 7    |
| 28.0  | 2    | 8    |
| 29.0  | 2    | 9    |
| 30.0  | 3    | 0    |
| 31.0  | 3    | 1    |
| 32.0  | 3    | 2    |
| 33.0  | 3    | 3    |
| 34.0  | 3    | 4    |
| 35.0  | 3    | 5    |
| 36.0  | 3    | 6    |
| 37.0  | 3    | 7    |
| 38.0  | 3    | 8    |
| 39.0  | 3    | 9    |
| 40.0  | 4    | 0    |
| 41.0  | 4    | 1    |
| 42.0  | 4    | 2    |
| 43.0  | 4    | 3    |
| 44.0  | 4    | 4    |
| 45.0  | 4    | 5    |

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## PART NUMBERING SYSTEM

## Appendix (Global code)

## ◆Capacitance code

\* How to use the table

| 1st        | 2nd |
|------------|-----|
| Cap. Value |     |

Capacitance value part

| 2nd | 1st  |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|------|
|     | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    |
| 0   | 10.0 | 20.0 | 30.0 | 40.0 | 50.0 | 60.0 | 70.0 | 80.0 | 90.0 |
| A   | 10.5 | 20.5 | 30.5 | 40.5 | 50.5 | 60.5 | 70.5 | 80.5 | 90.5 |
| 1   | 11.0 | 21.0 | 31.0 | 41.0 | 51.0 | 61.0 | 71.0 | 81.0 | 91.0 |
| B   | 11.5 | 21.5 | 31.5 | 41.5 | 51.5 | 61.5 | 71.5 | 81.5 | 91.5 |
| 2   | 12.0 | 22.0 | 32.0 | 42.0 | 52.0 | 62.0 | 72.0 | 82.0 | 92.0 |
| C   | 12.5 | 22.5 | 32.5 | 42.5 | 52.5 | 62.5 | 72.5 | 82.5 | 92.5 |
| 3   | 13.0 | 23.0 | 33.0 | 43.0 | 53.0 | 63.0 | 73.0 | 83.0 | 93.0 |
| D   | 13.5 | 23.5 | 33.5 | 43.5 | 53.5 | 63.5 | 73.5 | 83.5 | 93.5 |
| 4   | 14.0 | 24.0 | 34.0 | 44.0 | 54.0 | 64.0 | 74.0 | 84.0 | 94.0 |
| E   | 14.5 | 24.5 | 34.5 | 44.5 | 54.5 | 64.5 | 74.5 | 84.5 | 94.5 |
| 5   | 15.0 | 25.0 | 35.0 | 45.0 | 55.0 | 65.0 | 75.0 | 85.0 | 95.0 |
| F   | 15.5 | 25.5 | 35.5 | 45.5 | 55.5 | 65.5 | 75.5 | 85.5 | 95.5 |
| 6   | 16.0 | 26.0 | 36.0 | 46.0 | 56.0 | 66.0 | 76.0 | 86.0 | 96.0 |
| G   | 16.5 | 26.5 | 36.5 | 46.5 | 56.5 | 66.5 | 76.5 | 86.5 | 96.5 |
| 7   | 17.0 | 27.0 | 37.0 | 47.0 | 57.0 | 67.0 | 77.0 | 87.0 | 97.0 |
| H   | 17.5 | 27.5 | 37.5 | 47.5 | 57.5 | 67.5 | 77.5 | 87.5 | 97.5 |
| 8   | 18.0 | 28.0 | 38.0 | 48.0 | 58.0 | 68.0 | 78.0 | 88.0 | 98.0 |
| J   | 18.5 | 28.5 | 38.5 | 48.5 | 58.5 | 68.5 | 78.5 | 88.5 | 98.5 |
| 9   | 19.0 | 29.0 | 39.0 | 49.0 | 59.0 | 69.0 | 79.0 | 89.0 | 99.0 |
| K   | 19.5 | 29.5 | 39.5 | 49.5 | 59.5 | 69.5 | 79.5 | 89.5 | 99.5 |

For less than 10 $\mu$ F, a decimal point position is displayed with R.For 10 $\mu$ F or more, capacitance code is set to the first 2 digits and index (1digit).

Treatment of fraction (Refer to the table)

Example of conversion

| Real cap.        | The first 2 digits | Treatment of fraction | Code |      |      |
|------------------|--------------------|-----------------------|------|------|------|
|                  |                    |                       | 11th | 12th | 13th |
| 10.0 $\mu$ F →   | 10.0 →             | 10.0 →                | 1    | 0    | 0    |
| 10.1 $\mu$ F →   | 10.1 →             | 10.0 →                | 1    | 0    | 0    |
| 10.2 $\mu$ F →   | 10.2 →             | 10.0 →                | 1    | 0    | 0    |
| 10.3 $\mu$ F →   | 10.3 →             | 10.5 →                | 1    | A    | 0    |
| 10.4 $\mu$ F →   | 10.4 →             | 10.5 →                | 1    | A    | 0    |
| 10.5 $\mu$ F →   | 10.5 →             | 10.5 →                | 1    | A    | 0    |
| 10.6 $\mu$ F →   | 10.6 →             | 10.5 →                | 1    | A    | 0    |
| 10.7 $\mu$ F →   | 10.7 →             | 10.5 →                | 1    | A    | 0    |
| 10.8 $\mu$ F →   | 10.8 →             | 11.0 →                | 1    | 1    | 0    |
| 10.9 $\mu$ F →   | 10.9 →             | 11.0 →                | 1    | 1    | 0    |
| 11.0 $\mu$ F →   | 11.0 →             | 11.0 →                | 1    | 1    | 0    |
| 132 $\mu$ F →    | 13.2 →             | 13.0 →                | 1    | 3    | 1    |
| 133 $\mu$ F →    | 13.3 →             | 13.5 →                | 1    | D    | 1    |
| 167 $\mu$ F →    | 16.7 →             | 16.5 →                | 1    | G    | 1    |
| 168 $\mu$ F →    | 16.8 →             | 17.0 →                | 1    | 7    | 1    |
| 1110 $\mu$ F →   | 11.1 →             | 11.0 →                | 1    | 1    | 2    |
| 1340 $\mu$ F →   | 13.4 →             | 13.5 →                | 1    | D    | 2    |
| 13200 $\mu$ F →  | 13.2 →             | 13.0 →                | 1    | 3    | 3    |
| 13600 $\mu$ F →  | 13.6 →             | 13.5 →                | 1    | D    | 3    |
| 270000 $\mu$ F → | 27.0 →             | 27.0 →                | 2    | 7    | 4    |

## ◆Case length (Radial lead type)

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 0.0              | —    | —    |
| 0.1              | 0    | B    |
| 0.2              | 0    | C    |
| 0.3              | 0    | D    |
| 0.4              | 0    | E    |
| 0.5              | 0    | F    |
| 0.6              | 0    | G    |
| 0.7              | 0    | H    |
| 0.8              | 0    | J    |
| 0.9              | 0    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 1.0              | 0    | 1    |
| 1.1              | 1    | B    |
| 1.2              | 1    | C    |
| 1.3              | 1    | D    |
| 1.4              | 1    | E    |
| 1.5              | 1    | F    |
| 1.6              | 1    | G    |
| 1.7              | 1    | H    |
| 1.8              | 1    | J    |
| 1.9              | 1    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 2.0              | 0    | 2    |
| 2.1              | 2    | B    |
| 2.2              | 2    | C    |
| 2.3              | 2    | D    |
| 2.4              | 2    | E    |
| 2.5              | 2    | F    |
| 2.6              | 2    | G    |
| 2.7              | 2    | H    |
| 2.8              | 2    | J    |
| 2.9              | 2    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 3.0              | 0    | 3    |
| 3.1              | 3    | B    |
| 3.2              | 3    | C    |
| 3.3              | 3    | D    |
| 3.4              | 3    | E    |
| 3.5              | 3    | F    |
| 3.6              | 3    | G    |
| 3.7              | 3    | H    |
| 3.8              | 3    | J    |
| 3.9              | 3    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 4.0              | 0    | 4    |
| 4.1              | 4    | B    |
| 4.2              | 4    | C    |
| 4.3              | 4    | D    |
| 4.4              | 4    | E    |
| 4.5              | 4    | F    |
| 4.6              | 4    | G    |
| 4.7              | 4    | H    |
| 4.8              | 4    | J    |
| 4.9              | 4    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 5.0              | 0    | 5    |
| 5.1              | 5    | B    |
| 5.2              | 5    | C    |
| 5.3              | 5    | D    |
| 5.4              | 5    | E    |
| 5.5              | 5    | F    |
| 5.6              | 5    | G    |
| 5.7              | 5    | H    |
| 5.8              | 5    | J    |
| 5.9              | 5    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 6.0              | 0    | 6    |
| 6.1              | 6    | B    |
| 6.2              | 6    | C    |
| 6.3              | 6    | D    |
| 6.4              | 6    | E    |
| 6.5              | 6    | F    |
| 6.6              | 6    | G    |
| 6.7              | 6    | H    |
| 6.8              | 6    | J    |
| 6.9              | 6    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 7.0              | 0    | 7    |
| 7.1              | 7    | B    |
| 7.2              | 7    | C    |
| 7.3              | 7    | D    |
| 7.4              | 7    | E    |
| 7.5              | 7    | F    |
| 7.6              | 7    | G    |
| 7.7              | 7    | H    |
| 7.8              | 7    | J    |
| 7.9              | 7    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 8.0              | 0    | 8    |
| 8.1              | 8    | B    |
| 8.2              | 8    | C    |
| 8.3              | 8    | D    |
| 8.4              | 8    | E    |
| 8.5              | 8    | F    |
| 8.6              | 8    | G    |
| 8.7              | 8    | H    |
| 8.8              | 8    | J    |
| 8.9              | 8    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 9.0              | 0    | 9    |
| 9.1              | 9    | B    |
| 9.2              | 9    | C    |
| 9.3              | 9    | D    |
| 9.4              | 9    | E    |
| 9.5              | 9    | F    |
| 9.6              | 9    | G    |
| 9.7              | 9    | H    |
| 9.8              | 9    | J    |
| 9.9              | 9    | K    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 10.0             | 1    | 0    |
| 10.1             | A    | 1    |
| 10.2             | A    | 2    |
| 10.3             | A    | 3    |
| 10.4             | A    | 4    |
| 10.5             | A    | 5    |
| 10.6             | A    | 6    |
| 10.7             | A    | 7    |
| 10.8             | A    | 8    |
| 10.9             | A    | 9    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 11.0             | 1    | 1    |
| 11.1             | B    | 1    |
| 11.2             | B    | 2    |
| 11.3             | B    | 3    |
| 11.4             | B    | 4    |
| 11.5             | B    | 5    |
| 11.6             | B    | 6    |
| 11.7             | B    | 7    |
| 11.8             | B    | 8    |
| 11.9             | B    | 9    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 12.0             | 1    | 2    |
| 12.1             | C    | 1    |
| 12.2             | C    | 2    |
| 12.3             | C    | 3    |
| 12.4             | C    | 4    |
| 12.5             | C    | 5    |
| 12.6             | C    | 6    |
| 12.7             | C    | 7    |
| 12.8             | C    | 8    |
| 12.9             | C    | 9    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 13.0             | 1    | 3    |
| 13.1             | D    | 1    |
| 13.2             | D    | 2    |
| 13.3             | D    | 3    |
| 13.4             | D    | 4    |
| 13.5             | D    | 5    |
| 13.6             | D    | 6    |
| 13.7             | D    | 7    |
| 13.8             | D    | 8    |
| 13.9             | D    | 9    |

| Case length [mm] | 16th | 17th |
|------------------|------|------|
| 14.0             | 1    | 4    |
| 14.1             | E    | 1    |
| 14.2             | E    | 2    |
| 14.3             | E    | 3    |
| 14.4             | E    | 4    |
| 14.5             | E    | 5    |
| 14.6             | E    | 6    |
| 14.7             | E    | 7    |
| 14.8             | E    | 8    |
| 14.9             | E    | 9    |



## PART NUMBERING SYSTEM

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 15.0                | 1    | 5    | 16.0                | 1    | 6    | 17.0                | 1    | 7    | 18.0                | 1    | 8    | 19.0                | 1    | 9    |
| 15.1                | F    | 1    | 16.1                | G    | 1    | 17.1                | H    | 1    | 18.1                | J    | 1    | 19.1                | K    | 1    |
| 15.2                | F    | 2    | 16.2                | G    | 2    | 17.2                | H    | 2    | 18.2                | J    | 2    | 19.2                | K    | 2    |
| 15.3                | F    | 3    | 16.3                | G    | 3    | 17.3                | H    | 3    | 18.3                | J    | 3    | 19.3                | K    | 3    |
| 15.4                | F    | 4    | 16.4                | G    | 4    | 17.4                | H    | 4    | 18.4                | J    | 4    | 19.4                | K    | 4    |
| 15.5                | F    | 5    | 16.5                | G    | 5    | 17.5                | H    | 5    | 18.5                | J    | 5    | 19.5                | K    | 5    |
| 15.6                | F    | 6    | 16.6                | G    | 6    | 17.6                | H    | 6    | 18.6                | J    | 6    | 19.6                | K    | 6    |
| 15.7                | F    | 7    | 16.7                | G    | 7    | 17.7                | H    | 7    | 18.7                | J    | 7    | 19.7                | K    | 7    |
| 15.8                | F    | 8    | 16.8                | G    | 8    | 17.8                | H    | 8    | 18.8                | J    | 8    | 19.8                | K    | 8    |
| 15.9                | F    | 9    | 16.9                | G    | 9    | 17.9                | H    | 9    | 18.9                | J    | 9    | 19.9                | K    | 9    |

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 20.0                | 2    | 0    | 30.0                | 3    | 0    | 40.0                | 4    | 0    | 50.0                | 5    | 0    | 60.0                | 6    | 0    |
| 20.5                | L    | 1    | 30.5                | N    | 1    | 40.5                | Q    | 1    | 50.5                | S    | 1    | 60.5                | U    | 1    |
| 21.0                | 2    | 1    | 31.0                | 3    | 1    | 41.0                | 4    | 1    | 51.0                | 5    | 1    | 61.0                | 6    | 1    |
| 21.5                | L    | 3    | 31.5                | N    | 3    | 41.5                | Q    | 3    | 51.5                | S    | 3    | 61.5                | U    | 3    |
| 22.0                | 2    | 2    | 32.0                | 3    | 2    | 42.0                | 4    | 2    | 52.0                | 5    | 2    | 62.0                | 6    | 2    |
| 22.5                | L    | 5    | 32.5                | N    | 5    | 42.5                | Q    | 5    | 52.5                | S    | 5    | 62.5                | U    | 5    |
| 23.0                | 2    | 3    | 33.0                | 3    | 3    | 43.0                | 4    | 3    | 53.0                | 5    | 3    | 63.0                | 6    | 3    |
| 23.5                | L    | 7    | 33.5                | N    | 7    | 43.5                | Q    | 7    | 53.5                | S    | 7    | 63.5                | U    | 7    |
| 24.0                | 2    | 4    | 34.0                | 3    | 4    | 44.0                | 4    | 4    | 54.0                | 5    | 4    | 64.0                | 6    | 4    |
| 24.5                | L    | 9    | 34.5                | N    | 9    | 44.5                | Q    | 9    | 54.5                | S    | 9    | 64.5                | U    | 9    |
| 25.0                | 2    | 5    | 35.0                | 3    | 5    | 45.0                | 4    | 5    | 55.0                | 5    | 5    | 65.0                | 6    | 5    |
| 25.5                | M    | 1    | 35.5                | P    | 1    | 45.5                | R    | 1    | 55.5                | T    | 1    | 65.5                | V    | 1    |
| 26.0                | 2    | 6    | 36.0                | 3    | 6    | 46.0                | 4    | 6    | 56.0                | 5    | 6    | 66.0                | 6    | 6    |
| 26.5                | M    | 3    | 36.5                | P    | 3    | 46.5                | R    | 3    | 56.5                | T    | 3    | 66.5                | V    | 3    |
| 27.0                | 2    | 7    | 37.0                | 3    | 7    | 47.0                | 4    | 7    | 57.0                | 5    | 7    | 67.0                | 6    | 7    |
| 27.5                | M    | 5    | 37.5                | P    | 5    | 47.5                | R    | 5    | 57.5                | T    | 5    | 67.5                | V    | 5    |
| 28.0                | 2    | 8    | 38.0                | 3    | 8    | 48.0                | 4    | 8    | 58.0                | 5    | 8    | 68.0                | 6    | 8    |
| 28.5                | M    | 7    | 38.5                | P    | 7    | 48.5                | R    | 7    | 58.5                | T    | 7    | 68.5                | V    | 7    |
| 29.0                | 2    | 9    | 39.0                | 3    | 9    | 49.0                | 4    | 9    | 59.0                | 5    | 9    | 69.0                | 6    | 9    |
| 29.5                | M    | 9    | 39.5                | P    | 9    | 49.5                | R    | 9    | 59.5                | T    | 9    | 69.5                | V    | 9    |

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|
| 70.0                | 7    | 0    | 80.0                | 8    | 0    |
| 70.5                | W    | 1    | 80.5                | Y    | 1    |
| 71.0                | 7    | 1    | 81.0                | 8    | 1    |
| 71.5                | W    | 3    | 81.5                | Y    | 3    |
| 72.0                | 7    | 2    | 82.0                | 8    | 2    |
| 72.5                | W    | 5    | 82.5                | Y    | 5    |
| 73.0                | 7    | 3    | 83.0                | 8    | 3    |
| 73.5                | W    | 7    | 83.5                | Y    | 7    |
| 74.0                | 7    | 4    | 84.0                | 8    | 4    |
| 74.5                | W    | 9    | 84.5                | Y    | 9    |
| 75.0                | 7    | 5    | 85.0                | 8    | 5    |
| 75.5                | X    | 1    | 85.5                | Z    | 1    |
| 76.0                | 7    | 6    | 86.0                | 8    | 6    |
| 76.5                | X    | 3    | 86.5                | Z    | 3    |
| 77.0                | 7    | 7    | 87.0                | 8    | 7    |
| 77.5                | X    | 5    | 87.5                | Z    | 5    |
| 78.0                | 7    | 8    | 88.0                | 8    | 8    |
| 78.5                | X    | 7    | 88.5                | Z    | 7    |
| 79.0                | 7    | 9    | 89.0                | 8    | 9    |
| 79.5                | X    | 9    | 89.5                | Z    | 9    |

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## PART NUMBERING SYSTEM

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## ◆Case length (Snap-in type / Screw mount terminal type)

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 20                  | 2    | 0    | 30                  | 3    | 0    | 40                  | 4    | 0    | 50                  | 5    | 0    | 60                  | 6    | 0    |
| 21                  | 2    | 1    | 31                  | 3    | 1    | 41                  | 4    | 1    | 51                  | 5    | 1    | 61                  | 6    | 1    |
| 22                  | 2    | 2    | 32                  | 3    | 2    | 42                  | 4    | 2    | 52                  | 5    | 2    | 62                  | 6    | 2    |
| 23                  | 2    | 3    | 33                  | 3    | 3    | 43                  | 4    | 3    | 53                  | 5    | 3    | 63                  | 6    | 3    |
| 24                  | 2    | 4    | 34                  | 3    | 4    | 44                  | 4    | 4    | 54                  | 5    | 4    | 64                  | 6    | 4    |
| 25                  | 2    | 5    | 35                  | 3    | 5    | 45                  | 4    | 5    | 55                  | 5    | 5    | 65                  | 6    | 5    |
| 26                  | 2    | 6    | 36                  | 3    | 6    | 46                  | 4    | 6    | 56                  | 5    | 6    | 66                  | 6    | 6    |
| 27                  | 2    | 7    | 37                  | 3    | 7    | 47                  | 4    | 7    | 57                  | 5    | 7    | 67                  | 6    | 7    |
| 28                  | 2    | 8    | 38                  | 3    | 8    | 48                  | 4    | 8    | 58                  | 5    | 8    | 68                  | 6    | 8    |
| 29                  | 2    | 9    | 39                  | 3    | 9    | 49                  | 4    | 9    | 59                  | 5    | 9    | 69                  | 6    | 9    |

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 70                  | 7    | 0    | 80                  | 8    | 0    | 90                  | 9    | 0    | 100                 | A    | 0    | 110                 | B    | 0    |
| 71                  | 7    | 1    | 81                  | 8    | 1    | 91                  | 9    | 1    | 101                 | A    | 1    | 111                 | B    | 1    |
| 72                  | 7    | 2    | 82                  | 8    | 2    | 92                  | 9    | 2    | 102                 | A    | 2    | 112                 | B    | 2    |
| 73                  | 7    | 3    | 83                  | 8    | 3    | 93                  | 9    | 3    | 103                 | A    | 3    | 113                 | B    | 3    |
| 74                  | 7    | 4    | 84                  | 8    | 4    | 94                  | 9    | 4    | 104                 | A    | 4    | 114                 | B    | 4    |
| 75                  | 7    | 5    | 85                  | 8    | 5    | 95                  | 9    | 5    | 105                 | A    | 5    | 115                 | B    | 5    |
| 76                  | 7    | 6    | 86                  | 8    | 6    | 96                  | 9    | 6    | 106                 | A    | 6    | 116                 | B    | 6    |
| 77                  | 7    | 7    | 87                  | 8    | 7    | 97                  | 9    | 7    | 107                 | A    | 7    | 117                 | B    | 7    |
| 78                  | 7    | 8    | 88                  | 8    | 8    | 98                  | 9    | 8    | 108                 | A    | 8    | 118                 | B    | 8    |
| 79                  | 7    | 9    | 89                  | 8    | 9    | 99                  | 9    | 9    | 109                 | A    | 9    | 119                 | B    | 9    |

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 120                 | C    | 0    | 130                 | D    | 0    | 140                 | E    | 0    | 150                 | F    | 0    | 160                 | G    | 0    |
| 121                 | C    | 1    | 131                 | D    | 1    | 141                 | E    | 1    | 151                 | F    | 1    | 161                 | G    | 1    |
| 122                 | C    | 2    | 132                 | D    | 2    | 142                 | E    | 2    | 152                 | F    | 2    | 162                 | G    | 2    |
| 123                 | C    | 3    | 133                 | D    | 3    | 143                 | E    | 3    | 153                 | F    | 3    | 163                 | G    | 3    |
| 124                 | C    | 4    | 134                 | D    | 4    | 144                 | E    | 4    | 154                 | F    | 4    | 164                 | G    | 4    |
| 125                 | C    | 5    | 135                 | D    | 5    | 145                 | E    | 5    | 155                 | F    | 5    | 165                 | G    | 5    |
| 126                 | C    | 6    | 136                 | D    | 6    | 146                 | E    | 6    | 156                 | F    | 6    | 166                 | G    | 6    |
| 127                 | C    | 7    | 137                 | D    | 7    | 147                 | E    | 7    | 157                 | F    | 7    | 167                 | G    | 7    |
| 128                 | C    | 8    | 138                 | D    | 8    | 148                 | E    | 8    | 158                 | F    | 8    | 168                 | G    | 8    |
| 129                 | C    | 9    | 139                 | D    | 9    | 149                 | E    | 9    | 159                 | F    | 9    | 169                 | G    | 9    |

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 170                 | H    | 0    | 180                 | J    | 0    | 190                 | K    | 0    | 200                 | L    | 0    | 210                 | M    | 0    |
| 171                 | H    | 1    | 181                 | J    | 1    | 191                 | K    | 1    | 201                 | L    | 1    | 211                 | M    | 1    |
| 172                 | H    | 2    | 182                 | J    | 2    | 192                 | K    | 2    | 202                 | L    | 2    | 212                 | M    | 2    |
| 173                 | H    | 3    | 183                 | J    | 3    | 193                 | K    | 3    | 203                 | L    | 3    | 213                 | M    | 3    |
| 174                 | H    | 4    | 184                 | J    | 4    | 194                 | K    | 4    | 204                 | L    | 4    | 214                 | M    | 4    |
| 175                 | H    | 5    | 185                 | J    | 5    | 195                 | K    | 5    | 205                 | L    | 5    | 215                 | M    | 5    |
| 176                 | H    | 6    | 186                 | J    | 6    | 196                 | K    | 6    | 206                 | L    | 6    | 216                 | M    | 6    |
| 177                 | H    | 7    | 187                 | J    | 7    | 197                 | K    | 7    | 207                 | L    | 7    | 217                 | M    | 7    |
| 178                 | H    | 8    | 188                 | J    | 8    | 198                 | K    | 8    | 208                 | L    | 8    | 218                 | M    | 8    |
| 179                 | H    | 9    | 189                 | J    | 9    | 199                 | K    | 9    | 209                 | L    | 9    | 219                 | M    | 9    |

| Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th | Case length<br>[mm] | 16th | 17th |
|---------------------|------|------|---------------------|------|------|---------------------|------|------|---------------------|------|------|
| 220                 | N    | 0    | 230                 | P    | 0    | 240                 | Q    | 0    | 250                 | R    | 0    |
| 221                 | N    | 1    | 231                 | P    | 1    | 241                 | Q    | 1    | 251                 | R    | 1    |
| 222                 | N    | 2    | 232                 | P    | 2    | 242                 | Q    | 2    | 252                 | R    | 2    |
| 223                 | N    | 3    | 233                 | P    | 3    | 243                 | Q    | 3    | 253                 | R    | 3    |
| 224                 | N    | 4    | 234                 | P    | 4    | 244                 | Q    | 4    | 254                 | R    | 4    |
| 225                 | N    | 5    | 235                 | P    | 5    | 245                 | Q    | 5    | 255                 | R    | 5    |
| 226                 | N    | 6    | 236                 | P    | 6    | 246                 | Q    | 6    | 256                 | R    | 6    |
| 227                 | N    | 7    | 237                 | P    | 7    | 247                 | Q    | 7    | 257                 | R    | 7    |
| 228                 | N    | 8    | 238                 | P    | 8    | 248                 | Q    | 8    | 258                 | R    | 8    |
| 229                 | N    | 9    | 239                 | P    | 9    | 249                 | Q    | 9    | 259                 | R    | 9    |



## PART NUMBERING SYSTEM

### ◆Supplement code

#### Surface mount type / Conductive polymer (Include Radial lead type)

|              | Terminal plating material (Radial lead type) |       |       |
|--------------|----------------------------------------------|-------|-------|
|              | Sn100%                                       | Sn-Bi | Sn-Pb |
| Coating case | S                                            | G     | N     |

#### Radial lead type / Snap-in type

|              |              | Terminal plating material (Radial lead type) |       |       |
|--------------|--------------|----------------------------------------------|-------|-------|
|              |              | Sn100%                                       | Sn-Bi | Sn-Pb |
| Outer sleeve | PET          | S                                            | D     | C     |
|              | Coating case | H                                            | G     | F     |
|              | Polyolefin   | L                                            | —     | —     |
|              | Pb-free PVC  | M                                            | —     | N     |
|              | PVC          | B                                            | A     | N     |

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\* Pb-free snap-in type does not have top disk.

We also produce Pb-free snap-in type with "Top disk, Pb-free PVC sleeve and Sn100% terminal plating".

In this case, supplement code (the 18th digit) becomes "T".

#### Screw mount terminal type

|             | Screw terminal |
|-------------|----------------|
| Pb-free PVC | M              |
| Polyolefin  | S              |
| PET         | C              |
| PVC         | N              |