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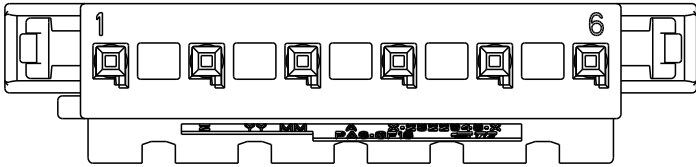
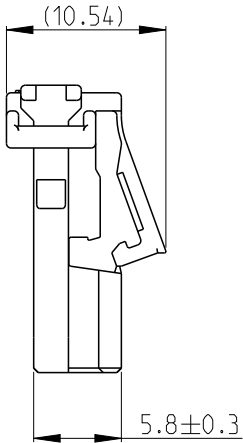
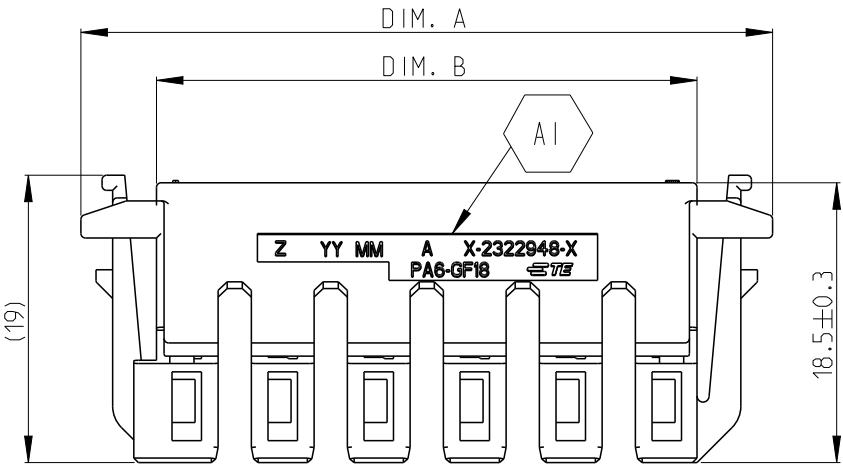
BY TE CONNECTIVITY

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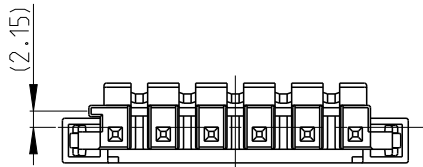
REVISIONS

| P | LTR | DESCRIPTION            | DATE    | DWN | APVD |
|---|-----|------------------------|---------|-----|------|
|   | A   | RELEASED               | 20NOV18 | W.Z | W.W  |
|   | A1  | REVISED(ECR-19-008773) | 21JUN19 | W.Z | W.W  |
|   |     |                        |         |     |      |
|   |     |                        |         |     |      |

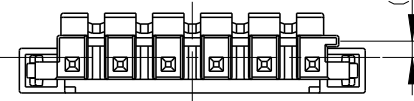
勝特力電材超市-龍山店 886-3-5773766  
勝特力電材超市-光復店 886-3-5729570  
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6 POS. CODING AS SHOWN

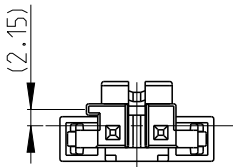


2322948-1 CODING A

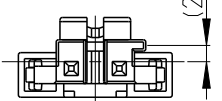


2322948-2 CODING B

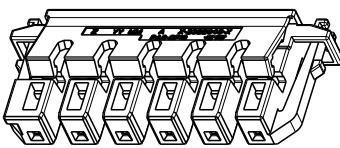
2 POS. CODING AS SHOWN



2-2322948-1 CODING A

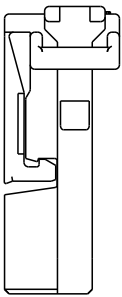


2-2322948-2 CODING B



SCALE 1:1

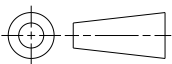
SECOND LOCK CLOSED STATUS



- MATERIAL: PA6-GF18, ORANGE
- SUITABLE TERMINAL P/N:  
5-963715-1 , WIRE SIZE: 0.5~0.75mm<sup>2</sup>  
5-928999-1 , WIRE SIZE: 0.25~0.35mm<sup>2</sup>
- MATING HEADER P/N:  
6P: 2322946-1/2322946-2, 2322949-1/2322949-2  
2P: 2-2322946-1/2-2322946-2, 2-2322949-1/2-2322949-2
- OPERATION TEMPERATURE: -40°C~+125°C
- RATED OPERATION VOLTAGE: 1000V DC
- 2322948-1 AS SHOWN

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS:  
mm



MATERIAL



TOLERANCES UNLESS  
OTHERWISE SPECIFIED:

±0.2  
0 PLC ±  
1 PLC ±  
2 PLC ±  
3 PLC ±  
4 PLC ±  
ANGLES ±  
FINISH -  
-

DWN X.LI 20JUL2017

CHK W.WU 07AUG2017

APVD L.YIN 10AUG2017

PRODUCT SPEC

108-32179

APPLICATION SPEC

-

WEIGHT -

CUSTOMER DRAWING

|           |         |        |          |        |         |             |
|-----------|---------|--------|----------|--------|---------|-------------|
| 10.35±0.3 | (20.35) | ORANGE | PA6-GF18 | B      | 2       | 2-2322948-2 |
| 35.75±0.3 | (45.75) |        |          | A      |         | 2-2322948-1 |
| DIM. B    | DIM. A  | COLOR  | MATERIAL | B      | 6       | 2322948-2   |
|           |         |        |          | A      |         | 2322948-1   |
|           |         |        |          | CODING | POS NO. | PART NO.    |



TE Connectivity

NAME HV DETECTING CONNECTOR

|         |                 |                      |                 |
|---------|-----------------|----------------------|-----------------|
| SIZE A3 | CAGE CODE 00779 | DRAWING NO C-2322948 | RESTRICTED TO - |
|---------|-----------------|----------------------|-----------------|

|           |              |        |
|-----------|--------------|--------|
| SCALE 2:1 | SHEET 1 OF 1 | REV A1 |
|-----------|--------------|--------|

**DESIGN OBJECTIVES**

High Voltage Detective Connector

**108-32179**

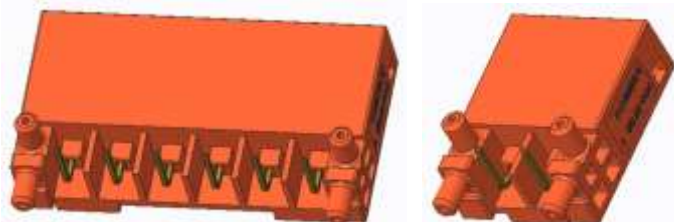
The product described in this document has not been fully tested to ensure conformance to the requirements outlined herein. TE Connectivity makes no representation or warranty, express or implied that the product will comply with these requirements. Further, TE Connectivity reserves the right these requirements based on the results of additional testing and evaluation. Contact TE Connectivity Engineering for further information. If necessary, this document will become the Product Specification at successful completion of testing.

**1. Scope:****1.1 Content**

This specification covers the requirements for product performance, test methods and quality assurance provisions of High Voltage Detective Connector.

**MQS 2P/6P HEADER ASSY RIGHT ANGLE/VERTICAL ANGLE:**

TE PN: 2322946-1/2322946-2 (6P RIGHT ANGLE)  
 2322949-1/2322949-2 (6P VERTICAL ANGLE)  
 2-2322946-1/2-2322946-2 (2P RIGHT ANGLE)  
 2-2322949-1/2-2322949-2 (2P VERTICAL ANGLE)

**MQS 2P/6P HOUSING:**

TE PN: 2322948-1/2322948-2 (6P)  
 2-2322948-1/2-2322948-2 (2P)  
 Terminal: 5-963715-1 (wire size: 0.5mm<sup>2</sup>)



|     |  |                 |  |                           |  |                                                                                       |  |                                    |  |          |  |           |  |
|-----|--|-----------------|--|---------------------------|--|---------------------------------------------------------------------------------------|--|------------------------------------|--|----------|--|-----------|--|
|     |  |                 |  | DR<br>X.Li      08SEP2018 |  |  |  | TE Connectivity<br>Shanghai, China |  |          |  |           |  |
|     |  |                 |  | CHK<br>C.ZHOU 19NOV2018   |  |                                                                                       |  |                                    |  |          |  |           |  |
|     |  |                 |  |                           |  | APP<br>W.WU    20NOV2018                                                              |  | NO.<br>108-32179                   |  | REV<br>A |  | LOC<br>ES |  |
|     |  |                 |  |                           |  | PAGE<br>1 of 11                                                                       |  | TITLE                              |  |          |  |           |  |
| A   |  | Released        |  | W.Z                       |  | 20NOV2018                                                                             |  | High Voltage Detective Connector   |  |          |  |           |  |
| LTR |  | REVISION RECORD |  | DR                        |  | DATE                                                                                  |  |                                    |  |          |  |           |  |

## 2. Applicable Documents:

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, product drawing shall be taken precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

### 2.1 Specifications:

- A. USCAR-2-2013
- B. USCAR-37-2008
- C. GMW3172-2015
- D. GMW3191-2012
- E. DIN IEC 68 2-20
- F. IEC 60068-2-54
- G. IEC 60512-5-2
- H. IEC 60529
- I. EIA 364-70A

## 3. Requirements:

### 3.1 Design and Construction

Product shall be of the design, construction and physical dimensions specified in the applicable product drawing.

### 3.2 Materials

MQS 2P/6P HEADER ASSY RIGHT ANGLE/ VERTICAL ANGLE:

Housing: PPA-GF30 V0 (Zytel HTN FR52G30NH NC010)

Terminal: CuZn30 H04 Plating: Sn over Ni

MQS 2P/6P HOUSING:

PA6-GF20 V0 (Durethan BKV 20 FN01)

### 3.3 Ratings:

A. Operating Temperature Range: Class 3 (-40°C to +125°C)

B. Nominal operating voltage: 1000V DC

For application at higher voltage please contact TE Connectivity.

Current: 1A Max at 125°C

C. Vibration Range: Class 1

GWM3172-2015 9.3.1.3 Mounting Location Underhood Sprung Masses



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D. Sealing range: IP XXB

### 3.4 Quality Assurance Provision

A. Sample Preparation:

The test samples to be used for the test shall be prepared by random selection from the current production. No sample shall be reused, unless otherwise specified.

B. Test Condition:

All the test shall be performed under any combination of the following test condition, unless otherwise specified:

Room temperature:  $23\pm5^{\circ}\text{C}$

Relative humidity: 45~75%

Atmospheric pressure: 860~1060 mbar

|                                                                                     |                                    |                 |                  |          |           |
|-------------------------------------------------------------------------------------|------------------------------------|-----------------|------------------|----------|-----------|
|  | TE Connectivity<br>Shanghai, China | PAGE<br>3 of 11 | NO.<br>108-32179 | REV<br>A | LOC<br>ES |
|-------------------------------------------------------------------------------------|------------------------------------|-----------------|------------------|----------|-----------|

## 3.5 Requirements and Procedures Summary

**General Test**

| Para. | Test items                          | Requirements                                                                                                     | Procedures                                                                                                                            |
|-------|-------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 3.5.1 | Visual inspection                   | No defect and non-functionality. Such as cracks, tarnishing, flash, etc.                                         | Visually, Dimensionally and functionally inspected per applicable inspection plan.<br><br>USCAR-2 Section 5.1.8<br>Visual inspection. |
| 3.5.2 | Heat Resistance to Reflow Soldering | Note any blisters, deformation/warping, melting or physical damage (visual inspection by 30X max magnification). | Reflow profile refers to APPENDIX 5.1                                                                                                 |
| 3.5.3 | Connector and/or Terminal Cycling   | Complete mate and un-mate each connector or terminal pair 10times                                                | USCAR-2 Section 5.1.7<br>Connector and/or Terminal Cycling                                                                            |

**Mechanical Test**

| Para.  | Test items                                                        | Requirements                                                                                                                                                       | Procedures                                                  |
|--------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 3.5.4  | Terminal to Connector Insertion Force (TPA in open position)      | TPA in Open Position: Insertion Force $F \leq 30N$                                                                                                                 | USCAR-2 Section 5.4.1.3 A<br>Insertion Force                |
| 3.5.5  | Terminal to Connector Insertion Force (Forward stop)              | $F \geq 50N$ or wire buckling                                                                                                                                      | USCAR-2 Section 5.4.1.3 A<br>Insertion Force                |
| 3.5.6  | Terminal from Connector Retention Force- Primary lock only        | 0.64mm Terminal: $F \geq 30N$                                                                                                                                      | USCAR-2 Section 5.4.1.3 B<br>Retention Force                |
| 3.5.7  | Terminal from Connector Retention Force- Primary Lock and TPA/PLR | 0.64mm Terminal:<br>1. Primary + Secondary Lock after Moisture Conditioning, $F \geq 60N$<br>2. Primary + Secondary Lock after Temp/Humidify and HTE, $F \geq 50N$ | USCAR-2 Section 5.4.1.3 B<br>Retention Force                |
| 3.5.8  | Connector Mating force                                            | $F \leq 75N$                                                                                                                                                       | USCAR-2 Section 5.4.2<br>Mating Force                       |
| 3.5.9  | Connector Un-mating Force                                         | $F \leq 75N$                                                                                                                                                       | USCAR-2 Section 5.4.2<br>Un-Mating Force                    |
| 3.5.10 | Connector to Connector Latch Retention Force                      | Using connector pairs without wires and terminals<br>$F \geq 80N$                                                                                                  | GMW3191 4.2.18<br>Locked Connector Disengagement Force      |
| 3.5.11 | Polarization Feature Effectiveness                                | 3X Maximum value of mating force ( $60N \leq F \leq 150N$ ). No damage for connector and no electrical contact shall be made between male/female terminals.        | USCAR-2 Section 5.4.4<br>Polarization Feature Effectiveness |
| 3.5.12 | Header Pin Retention                                              | 15N Min                                                                                                                                                            | USCAR-2, Section 5.7.1<br>Header Pin Retention              |



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### Electrical Test

| Para.  | Test items                    | Requirements                                                                                                                                                                                 | Procedures                                                                                                                                                                                                                                        |
|--------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.5.13 | Circuit Continuity Monitoring | There must be no instance in which the resistance of any terminal pair exceeds 7Ω for more than 1 microsecond.                                                                               | USCAR-2 Section 5.1.9<br>Circuit Continuity Monitoring                                                                                                                                                                                            |
| 3.5.14 | Dry Circuit Resistance        | Contact Resistance 20mΩ Max                                                                                                                                                                  | USCAR-2 Section 5.3.1<br>Dry Circuit Resistance                                                                                                                                                                                                   |
| 3.5.15 | Voltage Drop                  | Maximum Voltage Drop 50mV                                                                                                                                                                    | USCAR-2 Section 5.3.2<br>Voltage Drop                                                                                                                                                                                                             |
| 3.5.16 | Isolation Resistance          | Resistance ≥ 100 MΩ at 1000VDC                                                                                                                                                               | USCAR-2 Section 5.5.1<br>Isolation Resistance.                                                                                                                                                                                                    |
| 3.5.17 | Dielectric Withstanding       | There shall be no dielectric break-down or flash over between cavities or between circuits in cavities and the outside of the connector or shield.<br><br>Leakage Current 1mA Max at 3000VAC | USCAR 37, Section 5.5.2<br><br>3000VAC applied to the samples.<br><br>Dielectric withstanding voltage test<br>Un-sealed connector pairs shall be conditioned for ≥3hrs at lab ambient conditions prior to conducting dielectric strength testing. |
| 3.5.18 | Temperature Rise              | Test Current: 1A<br>Ambient Temp: 125°C<br><br>The measured temperature of the terminal pair interface must not exceed +5°C rise over ambient temperature.<br>Contact Resistance 20mΩ Max.   | EIA 364-70A Method 1<br>IEC 60512-5-2                                                                                                                                                                                                             |

### Environmental Test

| Para.  | Test items                                            | Requirements                                                                              | Procedures                                                                                                                                                  |
|--------|-------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.5.19 | Mechanical Shock and Vibration                        | Connector function meets the needs of Para. 3.5.13, 3.5.14, 3.5.15, 3.5.1                 | USCAR-2 Section 5.4.6<br>Mechanical shock V1<br>GWM3172-2015 9.3.1.3<br>Mounting Location Underhood<br>Sprung Masses<br>Profile refers to APPENDIX 5.2, 5.3 |
| 3.5.20 | Thermal Shock                                         | Connector function meets the needs of Para. 3.5.13, 3.5.14, 3.5.15, 3.5.16, 3.5.17, 3.5.1 | USCAR-2 Section 5.6.1<br>Thermal Shock<br>300 cycles, -40°C~+125°C                                                                                          |
| 3.5.21 | Temperature/ Humidity Cycling                         | Connector function meets the needs of Para. 3.5.14, 3.5.15, 3.5.16, 3.5.17, 3.5.7, 3.5.1  | USCAR 2, Section 5.6.2<br>Temperature 125°C, 40 cycles<br>Profile refers to APPENDIX 5.4                                                                    |
| 3.5.22 | High Temperature Exposure                             | Connector function meets the needs of Para. 3.5.14, 3.5.15, 3.5.16, 3.5.17, 3.5.1         | USCAR 2, Section 5.6.3.<br>Temperature 125°C, 1008hours.                                                                                                    |
| 3.5.23 | Protection against accidental contact, IPXXB (Finger) | No contact between HV circuits and 12mm dia. Finger probe at 10 N±10%                     | IEC 60529, section 12                                                                                                                                       |



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| Solderability Test |                                 |                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Para.              | Test items                      | Requirements                                                                                                 | Procedures                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3.5.24             | Solderability – Wetting Test    | Surface must be 100% wetted, surface defects are not allowed (visual inspection by 4X to 25X magnification). | <p>IEC 60068-2-54 (wetting balance test method)</p> <p>Pre-ageing:<br/> 50% of the devices: 1h steam aging by IEC 60068-2-20, chapter 4.1.1 method 1a<br/> 50% of the devices: 4h 155°C by IEC 60068-2-20, chapter 4.1.1 method 3a</p> <p>Solder bath temperature:<br/> 235 ± 3°C (lead soldering)<br/> 245 ± 3°C (lead-free soldering)</p> <p>Dip in duration: 30sec ± 15sec</p> <p>Immersion depth: according to solder area of header pins</p> |
| 3.5.25             | Solderability – De-wetting Test | De-wetting is not allowed (visual inspection by 4X to 25X magnification).                                    | <p>According to IEC 60068-2-20 5.2.5</p> <p>Pre-aging: None</p> <p>Solder bath temperature:<br/> 260 ± 3°C (lead soldering)<br/> 270 ± 3°C (lead-free soldering)</p> <p>Dip in duration: 2x 5 sec ± 0,5 sec</p> <p>Immersion depth: according to solder area of header pins</p>                                                                                                                                                                   |

## 3.6 Product Qualification Test and Sequences

| Test or examination                                                     |              | Test Group |      |      |      |      |      |
|-------------------------------------------------------------------------|--------------|------------|------|------|------|------|------|
|                                                                         |              | 1          | 2    | 3    | 4    | 5    | 6    |
| 3.5.1 Visual Inspection                                                 |              | 1, 5       | 1, 4 | 1, 6 | 1, 4 | 1, 4 | 1, 4 |
| 3.5.2 Heat Resistance to Reflow Soldering                               |              |            | 2    | 2    | 2    | 2    | 2    |
| 3.5.3 Connector and/or Terminal Cycling                                 |              |            |      |      |      |      |      |
| 3.5.4 Terminal to Connector Insertion Force (TPA in open position)      |              | 2          |      |      |      |      |      |
| 3.5.5 Terminal to Connector Insertion Force (Forward stop)              |              | 3          |      |      |      |      |      |
| 3.5.6 Terminal from Connector Retention Force- Primary lock only        |              | 4          |      |      |      |      |      |
| 3.5.7 Terminal from Connector Retention Force- Primary Lock and TPA/PLR |              |            |      | 5    |      |      |      |
| 3.5.8 Connector Mating Force                                            |              |            |      | 3    |      |      |      |
| 3.5.9 Connector Un-mating Force                                         |              |            |      | 4    |      |      |      |
| 3.5.10 Connector to Connector Latch Retention Force                     |              |            | 3    |      |      |      |      |
| 3.5.11 Polarization Feature Effectiveness                               |              |            |      |      | 3    |      |      |
| 3.5.12 Header Pin Retention                                             |              |            |      |      |      | 3    |      |
| 3.5.13 Circuit Continuity Monitoring                                    |              |            |      |      |      |      |      |
| 3.5.14 Dry Circuit Resistance                                           |              |            |      |      |      |      | 3    |
| 3.5.15 Voltage Drop                                                     |              |            |      |      |      |      |      |
| 3.5.16 Isolation Resistance                                             |              |            |      |      |      |      |      |
| 3.5.17 Dielectric withstanding                                          |              |            |      |      |      |      |      |
| 3.5.18 Temperature Rise                                                 |              |            |      |      |      |      | 3    |
| 3.5.19 Mechanical Shock and Vibration                                   |              |            |      |      |      |      |      |
| 3.5.20 Thermal Shock                                                    |              |            |      |      |      |      |      |
| 3.5.21 Temperature/Humidity Cycling                                     |              |            |      |      |      |      |      |
| 3.5.22 High Temperature Exposure                                        |              |            |      |      |      |      |      |
| 3.5.23 Protection against accidental contact, IPXXB (Finger)            |              |            |      |      |      |      |      |
| 3.5.24 Solderability – Wetting                                          |              |            |      |      |      |      |      |
| 3.5.25 Solderability – De-wetting                                       |              |            |      |      |      |      |      |
| Sample Size                                                             | 6P Connector | 4          | 10   | 10   | 4    | 4    | 4    |
|                                                                         | 6P Terminal  | 24         | -    | 24   | -    | -    | -    |
|                                                                         | 2P Connector | 5          | 10   | 10   | 4    | 4    | 5    |
|                                                                         | 2P Terminal  | 10         | -    | 10   | -    | -    | -    |



## 3.6 Product Qualification Test and Sequences (continued)

| Test or examination                                                     |              | Test Group |       |       |       |      |      |      |
|-------------------------------------------------------------------------|--------------|------------|-------|-------|-------|------|------|------|
|                                                                         |              | 7          | 8     | 9     | 10    | 11   | 12   | 13   |
| 3.5.1 Visual Inspection                                                 |              | 1, 8       | 1, 12 | 1, 13 | 1, 12 | 1, 3 | 1, 3 | 1, 3 |
| 3.5.2 Heat Resistance to Reflow Soldering                               |              | 2          | 2     | 2     | 2     |      |      |      |
| 3.5.3 Connector and/or Terminal Cycling                                 |              | 3          | 3     | 3     | 3     |      |      |      |
| 3.5.4 Terminal to Connector Insertion Force (TPA in open position)      |              |            |       |       |       |      |      |      |
| 3.5.5 Terminal to Connector Insertion Force (Forward stop)              |              |            |       |       |       |      |      |      |
| 3.5.6 Terminal from Connector Retention Force- Primary lock only        |              |            |       |       |       |      |      |      |
| 3.5.7 Terminal from Connector Retention Force- Primary Lock and TPA/PLR |              |            |       | 12    |       |      |      |      |
| 3.5.8 Connector Mating Force                                            |              |            |       |       |       |      |      |      |
| 3.5.9 Connector Un-mating Force                                         |              |            |       |       |       |      |      |      |
| 3.5.10 Connector to Connector Latch Retention Force                     |              |            |       |       |       |      |      |      |
| 3.5.11 Polarization Feature Effectiveness                               |              |            |       |       |       |      |      |      |
| 3.5.12 Header Pin Retention                                             |              |            |       |       |       |      |      |      |
| 3.5.13 Circuit Continuity Monitoring                                    |              | 5          | 7     |       |       |      |      |      |
| 3.5.14 Dry Circuit Resistance                                           |              | 4, 6       | 4, 8  | 4, 8  | 4, 8  |      |      |      |
| 3.5.15 Voltage Drop                                                     |              | 7          | 9     | 9     | 9     |      |      |      |
| 3.5.16 Isolation Resistance                                             |              |            | 5, 10 | 5, 10 | 5, 10 |      |      |      |
| 3.5.17 Dielectric withstanding                                          |              |            | 6, 11 | 6, 11 | 6, 11 |      |      |      |
| 3.5.18 Temperature Rise                                                 |              |            |       |       |       |      |      |      |
| 3.5.19 Mechanical Shock and Vibration                                   |              | 5          |       |       |       |      |      |      |
| 3.5.20 Thermal Shock                                                    |              |            | 7     |       |       |      |      |      |
| 3.5.21 Temperature/Humidity Cycling                                     |              |            |       | 7     |       |      |      |      |
| 3.5.22 High Temperature Exposure                                        |              |            |       |       | 7     |      |      |      |
| 3.5.23 Protection against accidental contact, IPXXB (Finger)            |              |            |       |       |       | 2    |      |      |
| 3.5.24 Solderability – Wetting                                          |              |            |       |       |       |      | 2    |      |
| 3.5.25 Solderability – De-wetting                                       |              |            |       |       |       |      |      | 2    |
| Sample Size                                                             | 6P Connector | 10         | 10    | 10    | 10    | 4    | -    | -    |
|                                                                         | 6P Terminal  | -          | -     | 24    | -     | -    | 10   | 10   |
|                                                                         | 2P Connector | 10         | 10    | 10    | 10    | 4    | -    | -    |
|                                                                         | 2P Terminal  | -          | -     | 10    | -     | -    | 10   | 10   |

## 4. QUALIFICATION TEST

### 4.1 Sample selection

Samples shall be prepared in accordance with applicable specification.

### 4.2 Test sequence

Qualification test shall be conducted as sequence specified in table of section 3.6.

### 4.3 Requalification test

If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall co-ordinate requalification testing, consisting of all or part of original testing sequence as determined by developments, product, quality and reliability engineering.

|                                                                                     |                                    |                 |                  |          |           |
|-------------------------------------------------------------------------------------|------------------------------------|-----------------|------------------|----------|-----------|
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|-------------------------------------------------------------------------------------|------------------------------------|-----------------|------------------|----------|-----------|

5. APPENDIX

5.1 Reflow Profile (see Fig. 1)

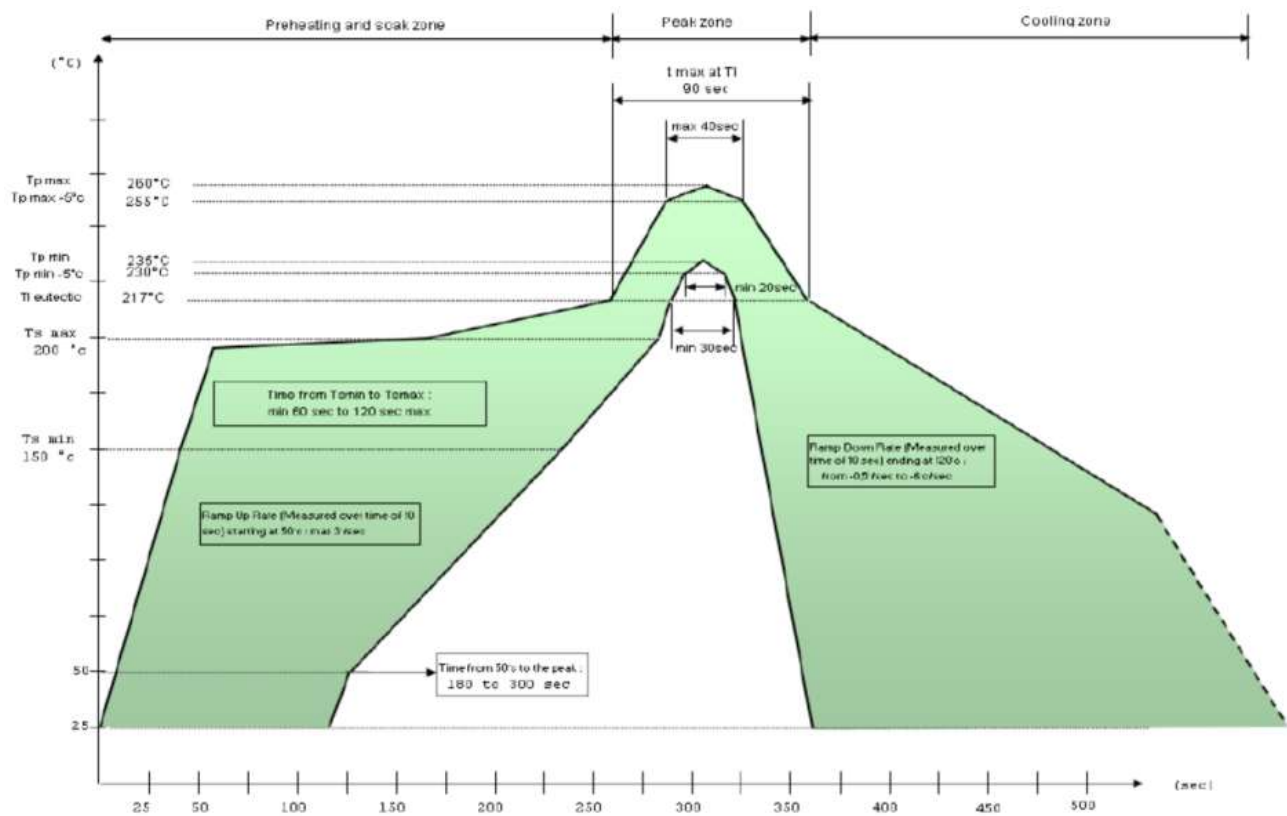


Fig. 1

5.2 Mechanical Shock Schedule (see Fig. 2)

| Vibration Class | Shocks per Axis | Wave Shape     | Direction (+/-) | Duration (ms) | Acceleration (g) |
|-----------------|-----------------|----------------|-----------------|---------------|------------------|
| V1              | 10              | Half Sine Wave | Positive        | 5 ~ 10        | 35               |

Fig. 2

5.3 Random Vibration Profile for Underhood Sprung Masses (see Fig. 3)

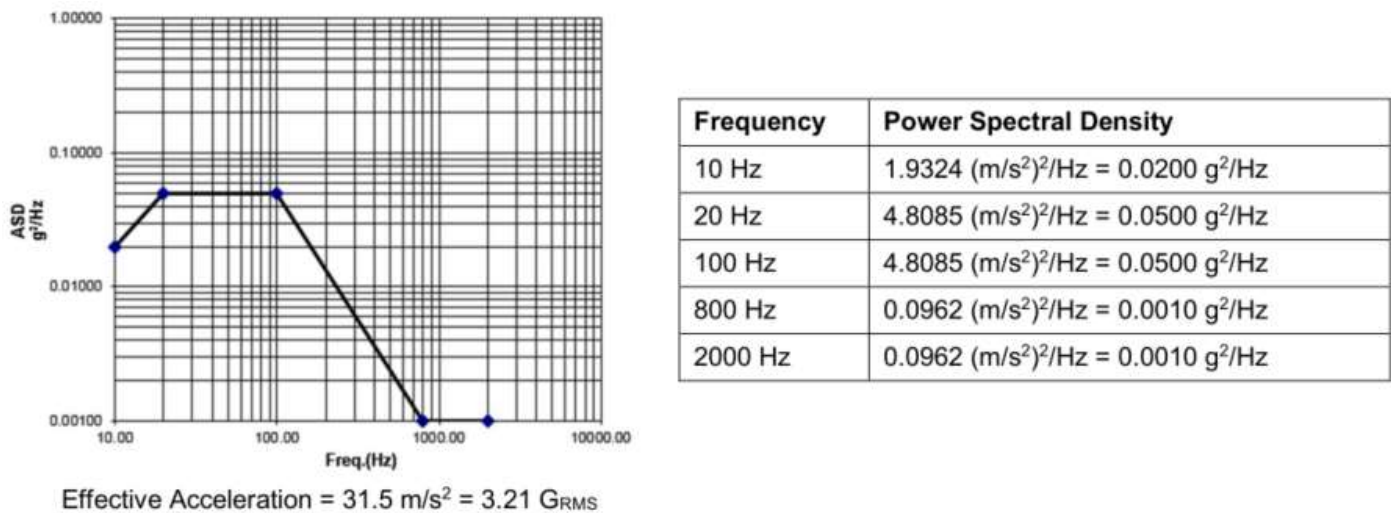


Fig. 3

5.4 Temperature/Humidity Cycling Schedule (see Fig. 4)

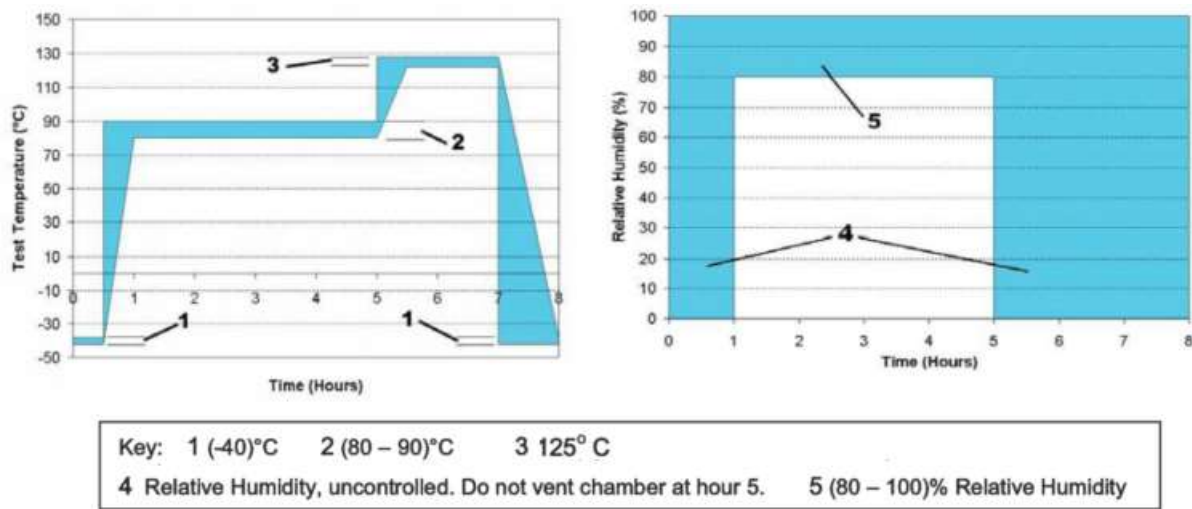


Fig. 4

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