勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

Sunmulon

FH

FH Miniature Lighted Pushbutton Switch

Only 19.8mm depth behind panel with built-in resistor

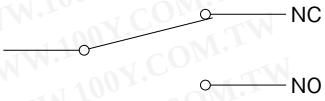
Built-in Resistor LED illumination makes free from wiring resistor.



■FEATURES

- Depth behind panel : Only 19.8mm
- Full Face and Spot display type available.
- Built-in resistor for 5V,12V,24V use.
- Light Cartridge is removable from front panel.
- Button Size: 11.4mm square type, 11.4×16.4mm rectangular type
- Precision-snap action switch movement with coil spring assures long life and outstanding tactile feedback.
- Silver Contact(Gold-Plated) and Cross-bar contact provided.
- Accessories: Barriers, Guard Covers, Sockets, etc.

Switch Connection



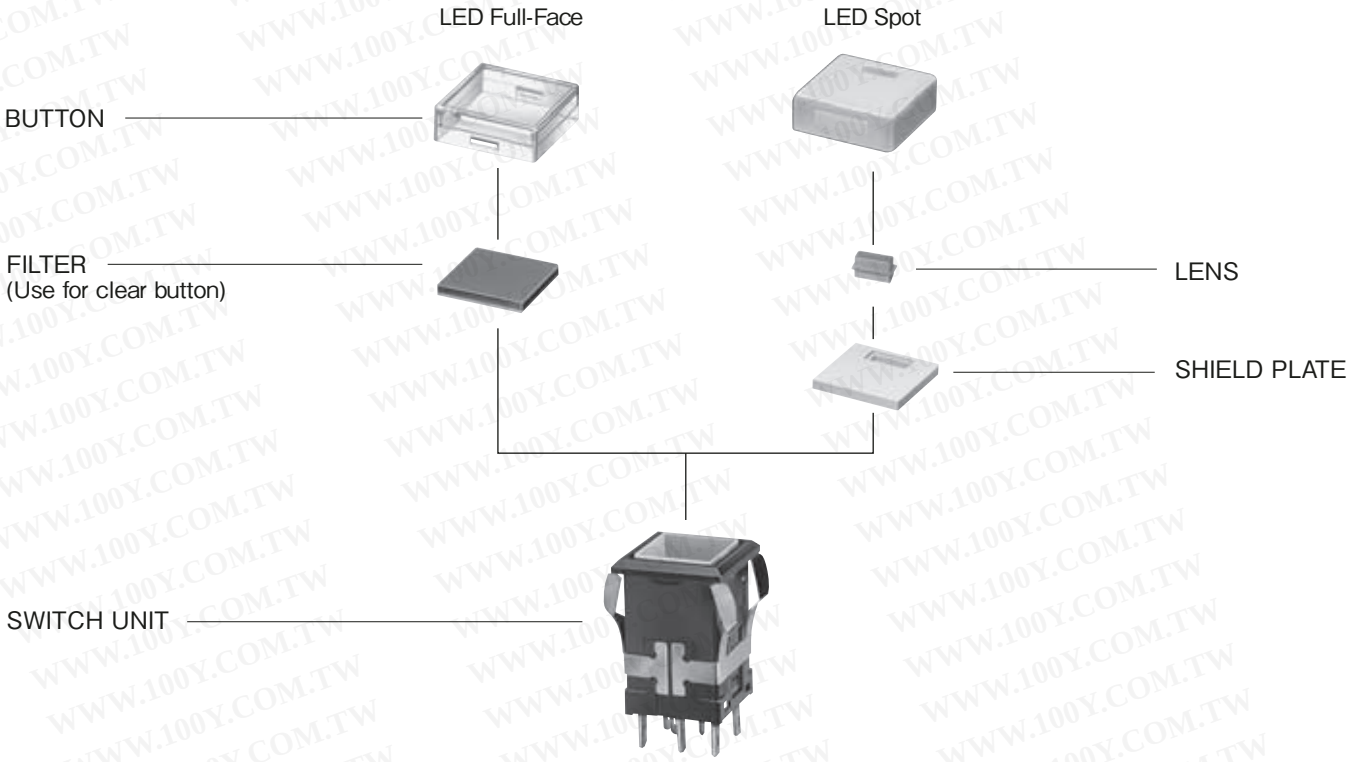
SPECIFICATIONS

Contact	Silver Contact (Gold-Plated)	Cross-bar Contact
Electrical Rating	AC125V,250V 5A(Resistive)	AC125V 0.1A, DC30V 0.1A(Resistive)
Insulation Resistance	More than 100M Ω at 500V DC	
Dielectric Strength	1000V AC RMS between NC and NO terminal 1500V AC RMS between terminals and ground 50/60Hz for 60sec. at normal ambient temperature and humidity	600V AC RMS between NC and NO terminal 1500V AC RMS between terminals and ground 50/60Hz for 60sec. at normal ambient temperature and humidity
Contact Resistance	Less than 30mΩ (Initial) at DC6V 1A	Less than 50mΩ (Initial) at DC6V 0.1A
Mechanical Life	Momentary Action :more than 500,000 operations	Alternate Action : more than 200,000 operations
Electrical Life	More than 30,000 operations at max. rated load	
Ambient Temperature	−15 °C to +50°C	
Ambient Humidity	80% RH (max.)	

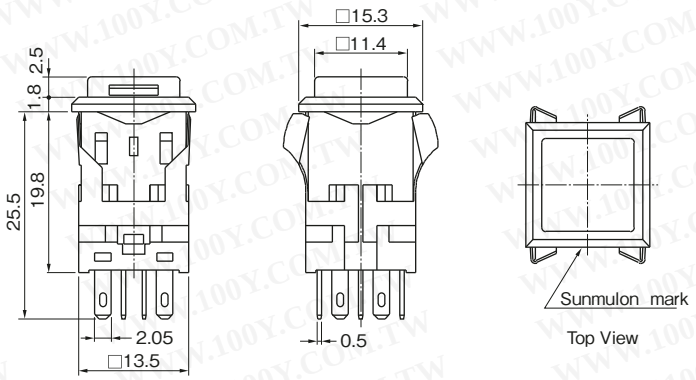
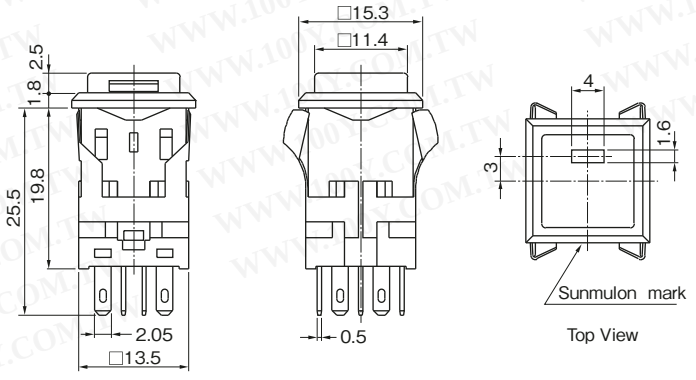
OPERATING CHARACTERISTICS

Operating Force (max.)	4.41N	Total Travel (max.)	2.5mm

STRUCTURE

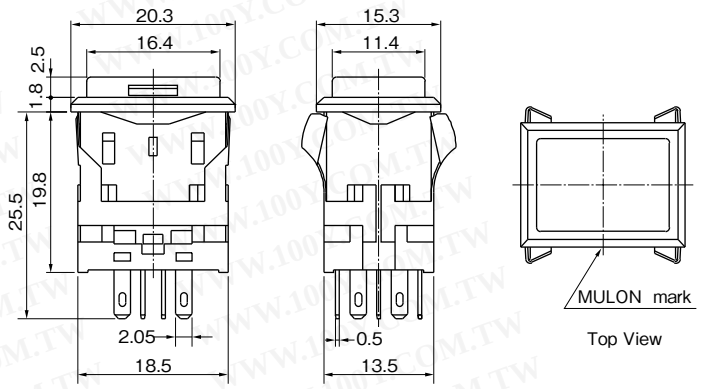
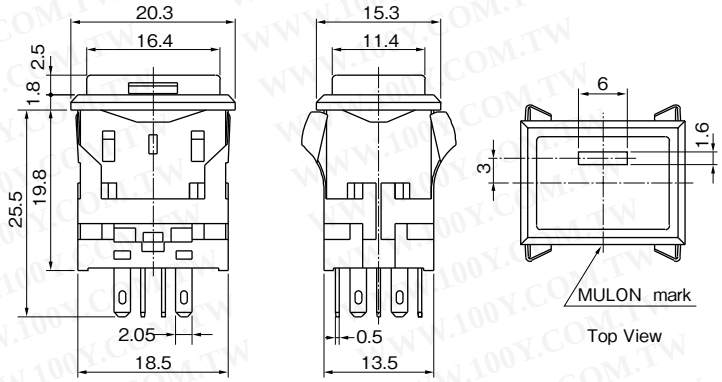


DIMENSIONS

11.4mm Square Button (Full-Face)		
11.4mm Square Button (Spot)		

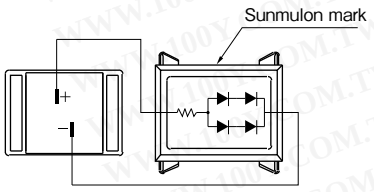
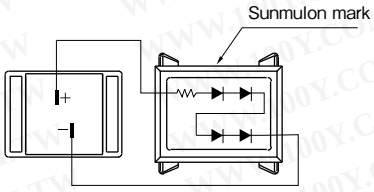
Tolerance : ±0.4mm

DIMENSIONS

11.4 ×16.4mm Rect. Button(Full-Face)		
11.4 ×16.4mm Rect. Button(Spot)		

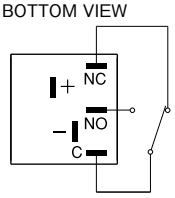
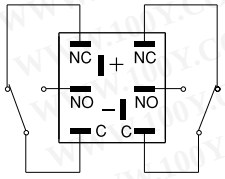
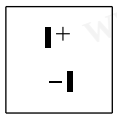
INTERNAL CONNECTION ARRANGEMENTS

● **LED (Square, Rect.)**

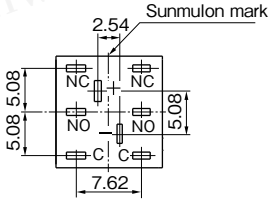
	Full-Face, Spot
5 V	
12 V • 24 V	

TERMINALS

● **TERMINALS LAYOUT (Square, Rectangular)**

STDP	DTDP	INDICATOR
BOTTOM VIEW 		

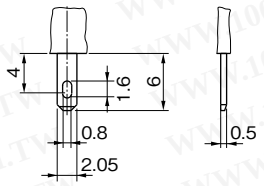
● **TERMINALS DIMENSIONS (BOTTOM VIEW)**



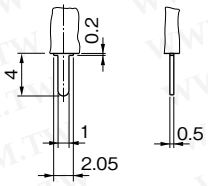
Tolerance : ±0.4mm

TERMINAL SHAPE

● TERMINAL SHAPE



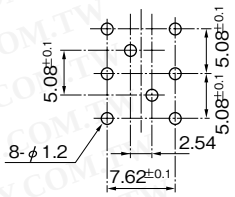
Soldering Terminal



PCB Terminal

● PCB HOLE DIMENSIONS

(BOTTOM VIEW)



LED RATINGS

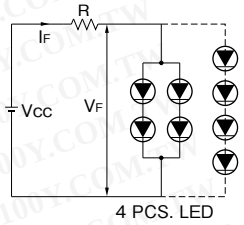
● LED RATINGS

	LED			
	DC5V(SERIES PARALLEL)		DC12, 24V (ALL SERIES)	
	Red, Yellow	Green	Red, Yellow	Green
Max. operating current I_{FM} (mA)	40	40	20	20
DC reverse voltage V_R (V)	10	10	20	20
Forward voltage V_F (V)	4	4.2	8	8.4
Recommended operating current I_F (mA)	15	25	8	13

※ In case of non-resistor type, suitable external current limiting resistors must be installed as shown by the table and formula.

$$R = \frac{Vcc - V_F}{I_F}$$

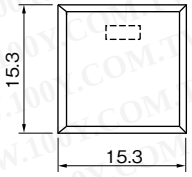
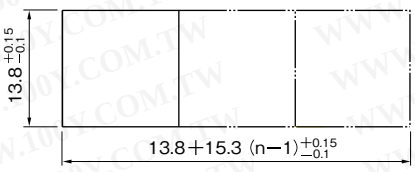
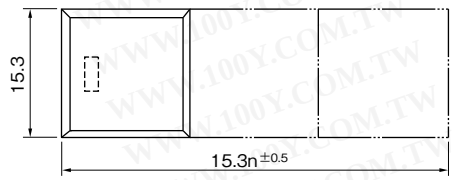
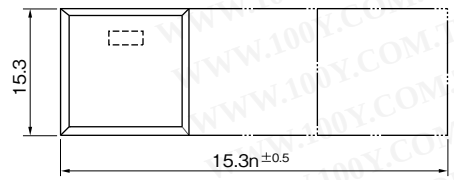
Vcc: Supply Voltage
VF: Forward Voltage
IF: Forward Current



PANEL LAYOUT/PANEL CUT DIMENSIONS

● 11.4mm Square Button

Panel thickness: 1mm～3.2mm

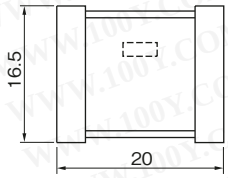
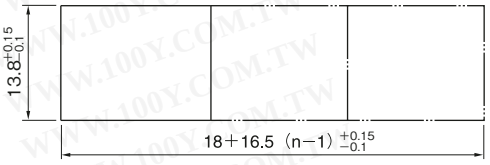
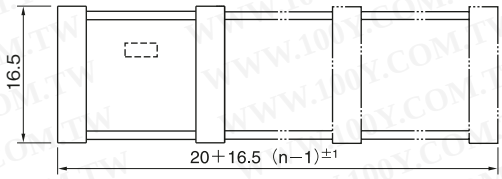
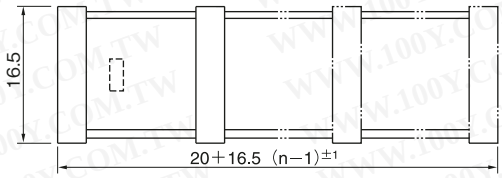
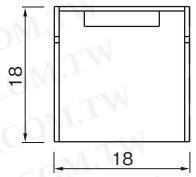
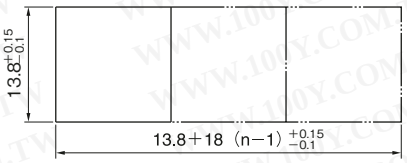
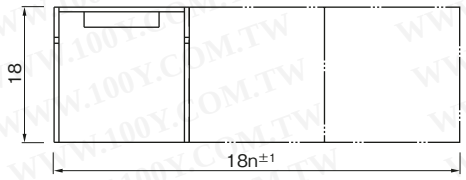
		Panel Layout	Panel Cut Dimensions
Without Barriers	Independent		
	Serial (Horizontal)	※1 	
	Serial (Vertical)	※2 	

n : number of switches

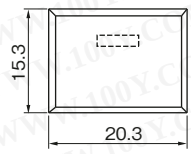
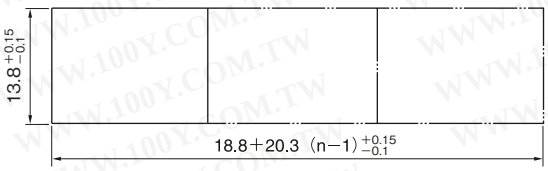
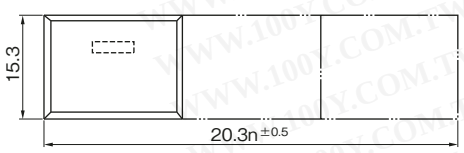
PANEL LAYOUT/PANEL CUT DIMENSIONS

●11.4mm Square Button

Panel thickness : 1mm～3.2mm
Panel thickness for Guard Cover use : 1mm～2.5mm

		Panel Layout	Panel Cut Dimensions
With Barriers	Independent		
	Serial (Horizontal)		
	Serial (Vertical)		
With Guard Covers	Independent		
	Serial (Horizontal)		

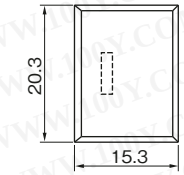
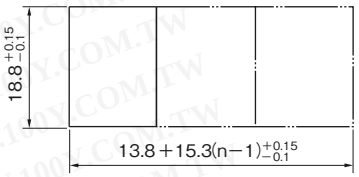
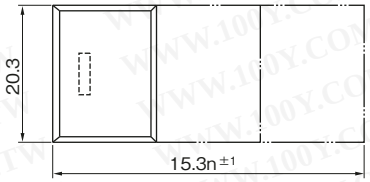
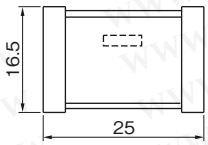
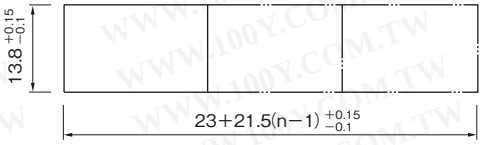
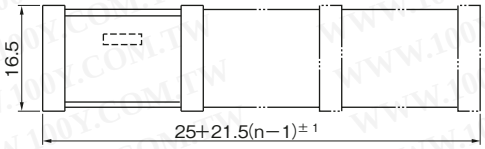
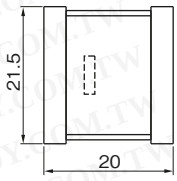
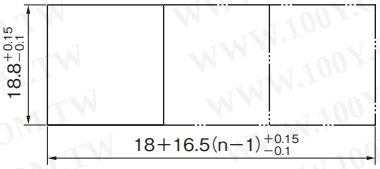
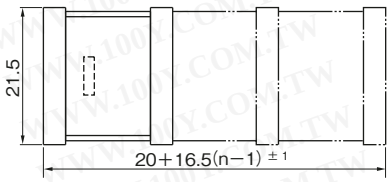
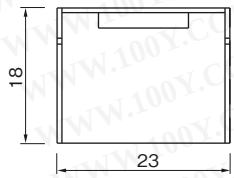
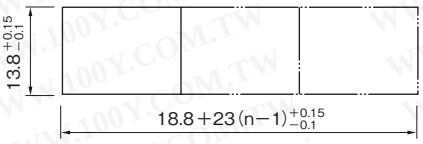
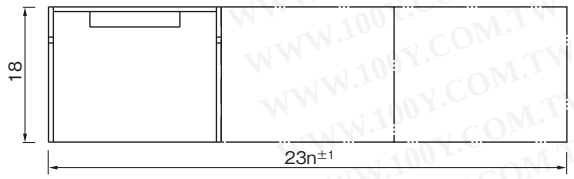
●11.4×16.4 Rect. Button

		Panel Layout	Panel Cut Dimensions
Without Barriers	Independent		
	Serial (Horizontal)		

n : number of switches
Tolerance : ±0.4mm

PANEL LAYOUT/PANEL CUT DIMENSIONS

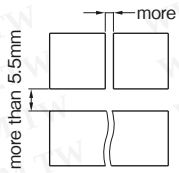
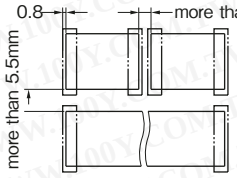
●11.4mm×16.4mm Rectangular Button

		Panel Layout	Panel Cut Dimensions
Without Barriers	Independent		
	Serial (Vert.)		
With Barriers	Independent		
	Serial (Horiz.)		
	Independent		
	Serial (Vert.)		
With Guard Covers	Independent		
	Serial (Horiz.)		

n : number of switches
Panel thickness : 1mm～3.2mm
Panel thickness for Guard Cover use : 1mm～2.5mm
Tolerance : ±0.4mm

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PANEL LAYOUT / PANEL CUT DIMENSIONS

Without Barriers	With Barriers
 In case of block mounting, leave space between arrays as a figure.	 In case of block mounting, leave space between arrays as a figure.

ACCESSORIES

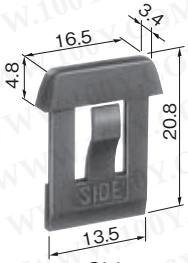
BARRIERS

In case of mounting switches in series, barriers can be used to prevent inadvertent pushing neighbor switches.

● **Short Barrier**



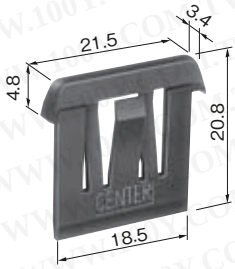
Center



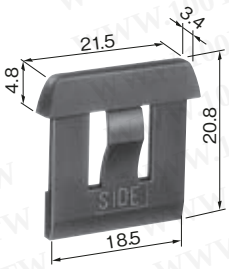
Side

PART NO.		
Color	Short Center Barrier	Short Side Barrier
Black	FH-592-K	FH-593-K
Gray	FH-592-G	FH-593-G

● **Long Barrier (For Rectangular, Longer Side)**



Center



Side

PART NO.		
Color	Long Center Barrier	Long Side Barrier
Black	FH-594-K	FH-595-K
Gray	FH-594-G	FH-595-G

GUARD COVER

Guard Cover prevents inadvertent and unintentional operations. (cannot be used with barriers.)

● **11.4mm Square Button**



● **11.4×16.4mm Rect. Button**



PART NO.		
Sq.	Black	FH-596-K
	Gray	FH-596-G
Rect.	Black	FH-597-K
	Gray	FH-597-G

※The cover to be opened 90 ° and stopped.

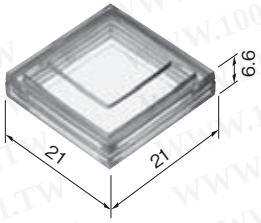
Tolerance : ±0.4mm

WWW.100Y.COM.TW

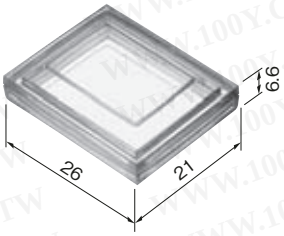
ACCESSORIES

Dust-Proof Cover

● 11.4mm Square Button

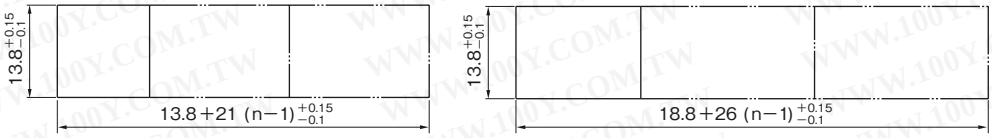


● 11.4×16.4mm Rectangular Button



PART NO.	
Square	Rectangular
FH-598	FH-599

● Panel Cut Dimensions for Dust-Proof Cover use.

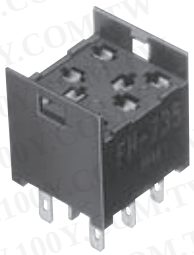


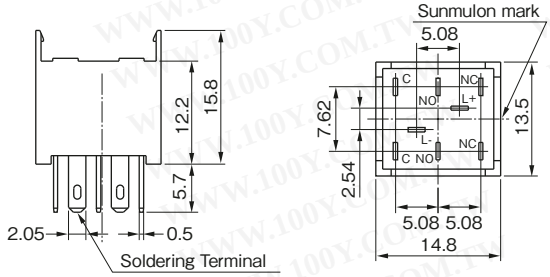
Panel Thickness : 1～2.5mm

SOCKET

For easy maintenance. (Can be used for both square and rectangular)

● Soldering Terminal Socket

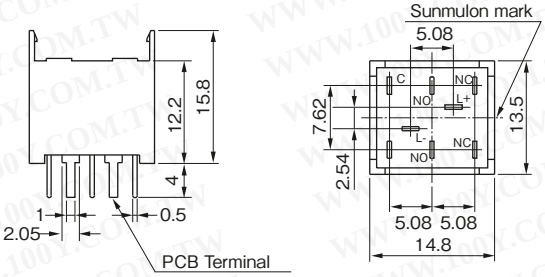




※Switch Unit Terminal should be Soldering Type for both sockets.

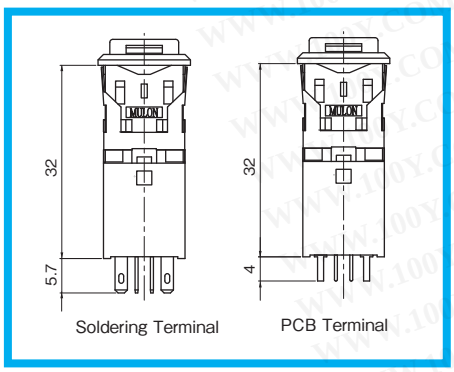
● PCB Terminal Socket



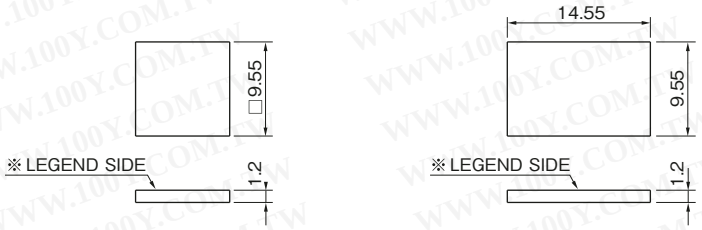


PART NO	
Soldering Terminal Socket	PCB Terminal Socket
FH-0735	FH-0736

Tolerance : ±0.4mm



FILTER DIMENSIONS



FH-573 FH-574

Tolerance : ±0.4mm

REPLACEMENT PARTS

Please order buttons and filters as replacement parts as follow.

LED Full-Face

FH – □□□ – □□

● BUTTON SHAPE

573	11.4mm Square Button
574	11.4×16.4mm Rect. Button

● BUTTON COLOR

	R	Red
	LG	Green
※	Y	Yellow
	M	Milk White
	C	Clear
	K	Black
	×	Without Button

● FILTER COLOR

	1	Red
	L2	Green
※	3	Yellow
	4	Milk White
	0	Without Filter

LED SPOT

FH – □□□ – □□

● BUTTON SHAPE

575	11.4mm Square Button
576	11.4×16.4mm Rect. Button

● BUTTON COLOR

	R	Red
	G	Green
※	Y	Yellow
	M	Milk White
	B	Blue
	K	Black
	×	Without Button

● LED COLOR

	1	Red
	2	Green
※	3	Yellow
	4	Milk White
	0	Without LED

勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

ORDERING CODE

LED Full-Face

FH □ — □ □ □ □ □ □ □ □ □ □

● OPERATION

M	Momentary
A	Alternate
L	Indicator

● CONTACT

0	Indicator
1	SPDT・Silver (Gold-Plated)
2	DPDT・Silver (Gold-Plated)
3	SPDT・Crossbar
4	DPDT・Crossbar

● BUTTON SHAPE

S	11.4mm Square Button
W	11.4×16.4mm Rect. Button

● Supply Voltage to LED

4	Non-Resistor (All Series)
5	Non-Resistor (Series Pararell)
6	5V Built-in Resistor
7	12V Built-in Resistor
8	24V Built-in Resistor
×	Without LED

● LED COLOR

	70	Red
	80	Green
※	90	Yellow
	×	Without LED

● BUTTON COLOR

	R	Red
	G	Green
※	Y	Yellow
	M	Milk White
	C	Clear
	×	Without Button

● HOUSING COLOR

B	Black
G	Gray

● FILTER COLOR

	1	Red
	2	Green
※	3	Yellow
	4	Milk White
★	×	Without Filter

★Generally, in case of using color button, filters are not necessary.

※"Yellow" color for LED/Button/ Filter is actually "Orange Yellow".

● MOUNTING ※1

1	For Vertical Mtg.
2	For Horizontal Mtg.

● TERMINAL

S	Soldering

※1) Snap-spring metal plates come out Left/Right direction for Vertical Mounting, and Top/Bottom direction for Horizontal Mounting to avoid interfering mutually. Therefore, in case of independent use, it does not matter. (select 2 Horizontal ordinary)

LED SPOT

FH □ — □ □ □ □ □ □ □ □ □ □

● OPERATION

M	Momentary
A	Alternate
L	Indicator

● CONTACT

0	Indicator
1	SPDT・Silver (Gold-Plated)
2	DPDT・Silver (Gold-Plated)
3	SPDT・Crossbar
4	DPDT・Crossbar

● BUTTON SHAPE

P	11.4mm Square Button
L	11.4×16.4mm Rect. Button

● Supply Voltage to LED

4	Non-Resistor (All Series)
5	Non-Resistor (Series Pararell)
6	5V Built-in Resistor
7	12V Built-in Resistor
8	24V Built-in Resistor
×	Without LED

● LED COLOR

	70	Red
	80	Green
※	90	Yellow
	×	Without LED

● BUTTON COLOR

	R	Red
	G	Green
※	Y	Yellow
	M	Milk White
	B	Blue
	K	Black
	×	Without Button

● HOUSING COLOR

B	Black
G	Gray

● FILTER COLOR

	1	Red
	2	Green
※	3	Yellow
	4	Milk White

※"Yellow" color for LED/Button/ Filter is actually "Orange Yellow".

● MOUNTING ※1

1	For Vertical Mtg.
2	For Horizontal Mtg.

● TERMINAL

S	Soldering

※1) Snap-spring metal plates come out Left/Right direction for Vertical Mounting, and Top/Bottom direction for Horizontal Mounting to avoid interfering mutually. Therefore, in case of independent use, it does not matter. (select 2 Horizontal ordinary)