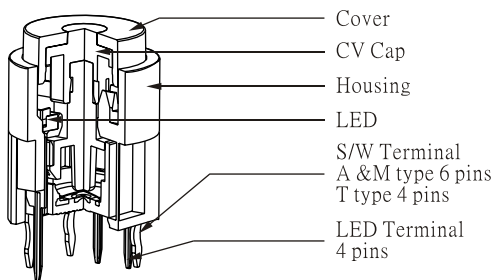
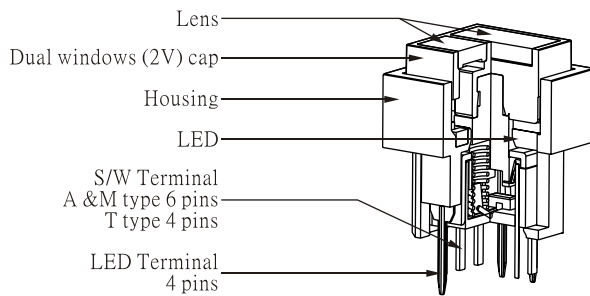




General Specifications	
Item	SPA-A Type & SPA-M Type
Circuit	DPDT
Current Rating	100mA
Voltage Rating	30V DC
Contact Resistance	100m Ohm Max(initial)
Insulation Resistance	100M Ohm Min at DC 500V
Operating Force	200gf±80gf
Total Travel	Max. 2.5mm; Lock 1.5mm
Operating Life	10,000 Cycles Min.
Solder Specifications	260deg. for 3 seconds
Operating Temperature	-10deg~+65deg
Function	Momentary or Alternate
LED Rating	See the table below
Item	SPA-T Type
Circuit	SPST
Current Rating	50mA
Voltage Rating	12V DC
Contact Resistance	100mOhm Max(initial)
Insulation Resistance	100M Ohm Min
Operating Force	180gf±50gf
Total Travel	0.3mm ±0.2mm
Operating Life	800,000 Cycles Min.
Solder Specifications	260deg. for 3 seconds
Operating Temperature	-10deg.~+60deg.
Function	Tactile
LED Rating	See the table below



Center View Round type



Dual windows Square type

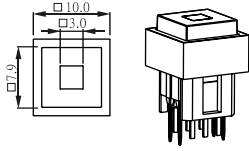
Materials		
Parts	Type	SPA-A Type & SPA-M Type
S/W Button		Polyacetal (POM)
S/W Base		Polyamide (PA)
S/W Terminal		Brass with silver plating
LED Terminal		Phosphor bronze (PBS) with gold plating
Contact		Phosphor bronze (PBS) with silver plating
Spring		Piano Wire
Housing		Polyamide (PA)
Lens		Polycarbonate (PC)
Dual windows cap		Polycarbonate (PC)
CV cap		Polycarbonate (PC)
Cover		Acrylonitrile Butadine Styrene (ABS)
Parts	Type	SPA-T Type
S/W Button		Polyacetal (POM)
S/W Base		Polyamide (PA)
S/W Terminal		Brass with silver plating
LED Terminal		Phosphor bronze (PBS) with gold plating
Act. Dome		Stainless steel with silver plating
Housing		Polyamide (PA)
Lens		Polycarbonate (PC)
Dual windows cap		Polycarbonate (PC)
CV cap		Polycarbonate (PC)
Cover		Acrylonitrile Butadine Styrene (ABS)

Dimension

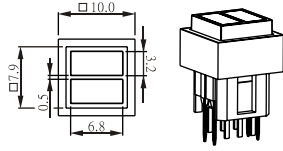
CA type housing

Momentary or Alternate

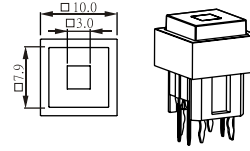
Tactile



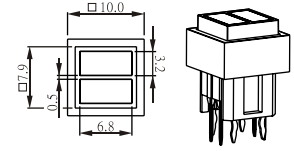
Center view



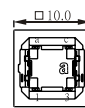
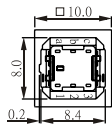
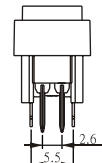
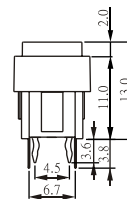
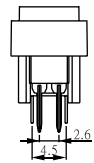
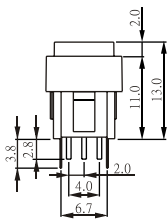
Dual Windows



Center view



Dual Windows

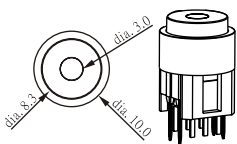


Dimension unit in mm

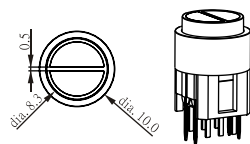
SA type housing

Momentary or Alternate

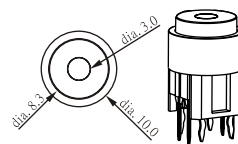
Tactile



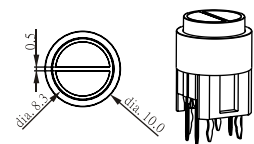
Center view



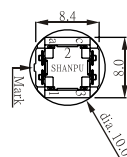
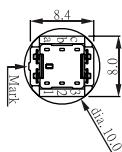
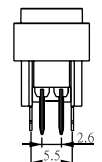
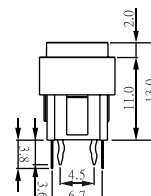
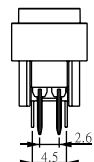
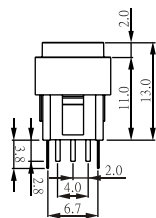
Dual Windows



Center view




Dual Windows





Dimension unit in mm

How to Order dual windows type

SPA — [] — [] [] — 2 V [] [] — [] []

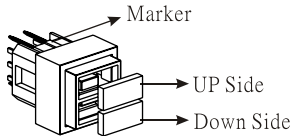


Switch Function	
T	Tactile
M	Momentary
A	Alternate

Housing Type	
SA	
CA	


Lens Colors		
Code	Up	Down
2V12	Red	Yellow
2V13	Red	Green
2V14	Red	White
2V23	Yellow	Green
2V24	Yellow	White
2V34	Green	White
2V44	White	White

LED Colors		
Code	Up	Down
12	Red	Yellow
13	Red	Green
1P3	Red	Pure Green
14	Red	White
17	Red	Blue
23	Yellow	Green
2P3	Yellow	Pure Green
24	Yellow	White
27	Yellow	Blue
3P3	Green	Pure Green
34	Green	White
37	Green	Blue
P34	Pure Green	White
P37	Pure Green	Blue
47	White	Blue





How to Order center view type

SPA — [] — [] [] — CV [] [] — [] []

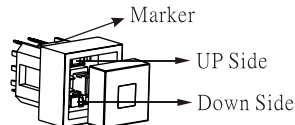


Switch Function	
T	Tactile
M	Momentary
A	Alternate

Housing Type	
SA	
CA	

Cover colors	
04	White
05	Black

LED Colors		
Code	Up	Down
12	Red	Yellow
13	Red	Green
1P3	Red	Pure Green
14	Red	White
17	Red	Blue
23	Yellow	Green
2P3	Yellow	Pure Green
24	Yellow	White
27	Yellow	Blue
3P3	Green	Pure Green
34	Green	White
37	Green	Blue
P34	Pure Green	White
P37	Pure Green	Blue
47	White	Blue



LED Characteristics

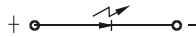
The electrical specifications shown are determined at a basic temperature of 25°C. If the source voltage exceeds the rated voltage of LED, a ballast resistor must be connected in series with the LED.

LED Characteristics

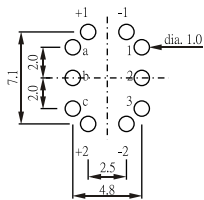
Single color	Forward Voltage V_F (V) at 20mA	Forward Current I_F (mA)	Reverse Voltage V_R (V)	Reverse Current I_R (uA) at $V_R=5V$
Red	2.0~2.6	Typ. 20 mA 30 mA max.	5V	100uA max.
Yellow	2.1~2.6			
Green	2.0~2.6			
Pure Green	3.5~4.0			
Blue	2.8~3.2			
White	3.5~4.0			



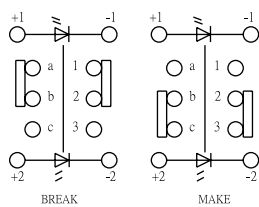
Attention: LED are electrostatic sensitive devices



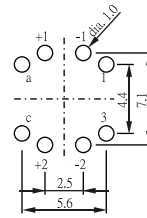
PCB Mounting & Contact Configuration



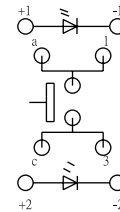
SPA-A and SPA-M
PC.B. Mounting Holes



SPA-M & SPA-A
Contact Configuration



SPA-T
PC.B. Mounting Holes



SPA-T
Contact Configuration

Dimension unit in mm