

# PA Series

Sub-Miniature Pushbutton Switches



**SPECIFICATION:**

**MAX. CURRENT/VOLTAGE RATING WITH RESISTIVE LOAD:**  
400mA 32VAC-100mA 50VDC-125mA 125VAC  
500mA 48VAC - 200 mA 50VDC - 200mA 250VAC for metal material.

**INITIAL CONTACT RESISTANCE:** 50mΩ max.

**INSULATION RESISTANCE:** 1GΩ min.at 500VDC.

**DIELECTRIC STRENGTH:** 1,000 VAC rms.  
1,500 VAC rms. for metal material.

**ELECTRICAL LIFE AT FULL LOAD:** 500,000 cycles.

**OPERATING TEMPERATURE:** -30°C to 85°C.

**PANEL THICKNESS:**  
B1 series : 0.8 mm (.031) min. -1.8 mm (.071) max.  
B2 series : 1.5 mm (.059) min. -4 mm (.157) max.  
B3 series : 2.85 +0.05/-0.10 mm (.112)

**TOTAL TRAVEL:** 1.5 mm(.059)

**OPERATING FORCE:** 2N~5N

**CONTACT BOUNCE:** 10 ms.

**MECHANICAL LIFE:** 1,000,000 cycles.

**TORQUE:** 0.5 Nm max.applied to nut,  
1.5 Nm max. for metal material.

**SOLDERING:** 350°C max.for 5 seconds.

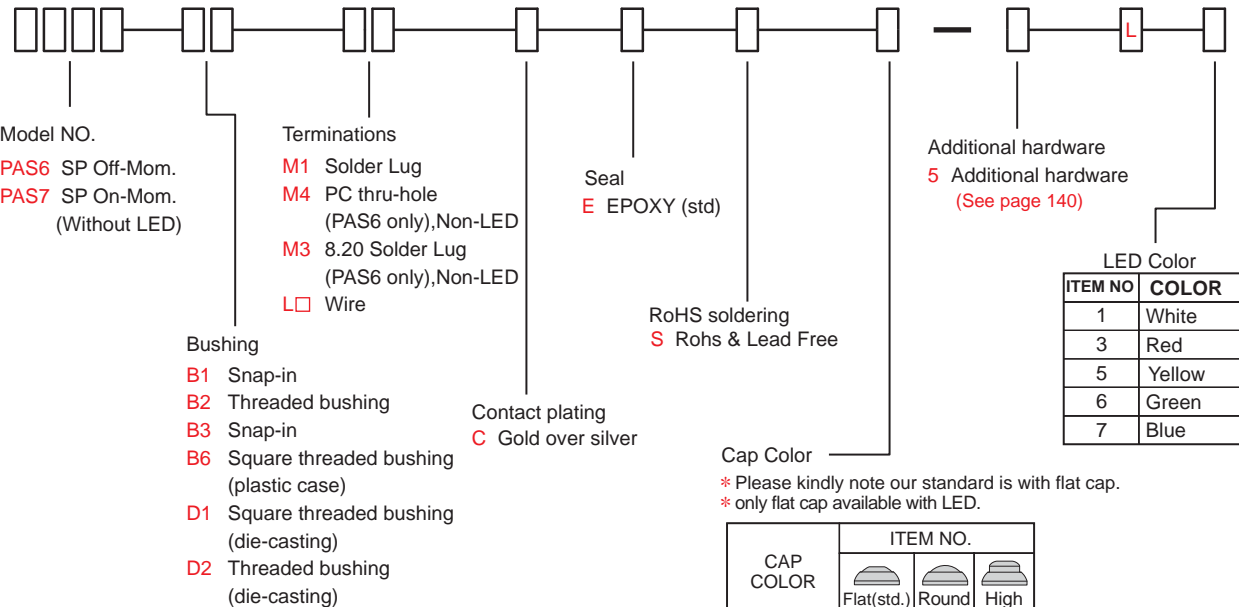
**MATERIALS**  
**CASE:** Diallyl phthalate (DAP)(UL94v-0).  
**CAP:** Polyamide 6/6.  
**BUSHING:** Polyamide 6/6.

IP 67  
ACCORDING TO  
EN 60529:1991+A1:2001  
IEC 60529:2001



## HOW TO ORDER

MODEL NO. BUSHING TERMINATIONS CONTACT SEAL RoHS CAP ADDITIONAL LED LED  
PLATING SOLDERING COLOR HARDWARE COLOR



Model NO.  
**PAS6** SP Off-Mom.  
**PAS7** SP On-Mom.  
(Without LED)

Terminations  
**M1** Solder Lug  
**M4** PC thru-hole  
(PAS6 only),Non-LED  
**M3** 8.20 Solder Lug  
(PAS6 only),Non-LED  
**L** Wire

Bushing  
**B1** Snap-in  
**B2** Threaded bushing  
**B3** Snap-in  
**B6** Square threaded bushing  
(plastic case)  
**D1** Square threaded bushing  
(die-casting)  
**D2** Threaded bushing  
(die-casting)

Bushing plated  
**A** chromium  
**C** Stain-chromium  
**D** Stain-nickel plating

※ If you need bushing plated see page 137.

Seal  
**E** EPOXY (std)

RoHS soldering  
**S** Rohs & Lead Free

Additional hardware  
**5** Additional hardware  
(See page 140)

LED Color	
ITEM NO	COLOR
1	White
3	Red
5	Yellow
6	Green
7	Blue

Cap Color

\* Please kindly note our standard is with flat cap.  
\* only flat cap available with LED.

CAP COLOR	ITEM NO.		
	Flat(std.)	Round	High
White	1	A1	G1
Black (Std)	2	A2	G2
Red (Std)	3	A3	G3
Orange	4	A4	G4
Yellow	5	A5	G5
Green	6	A6	G6
Blue	7	A7	G7

\* Besides standard color, other colors need to check stocks available.

EXAMPLE:  
PAS6B2M1CES-5(Without LED)  
CAP color  
PAS6BM1CES-5L-5  
LED Color  
CAP color

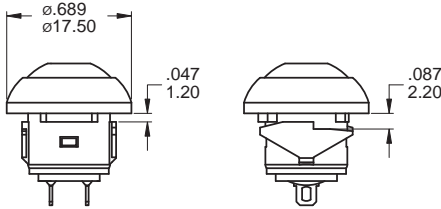
SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		
		POS.1	POS.2	POS.1	POS.2	SCHEMATIC
SP	PAS6	OFF	MOM	OPEN	1-3	
SP	PAS7	ON	OFF(MOM)	1-3	OPEN	

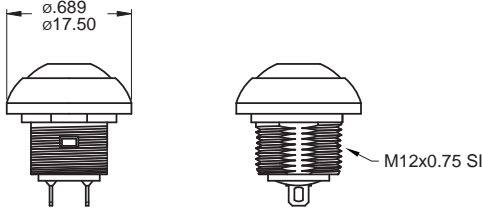
MOM=MOMENTARY

BUSHING TYPE

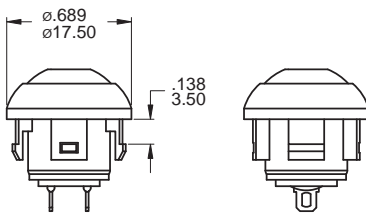
B1



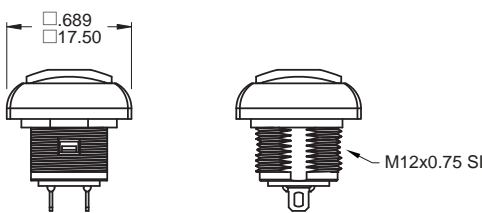
B2 / D2



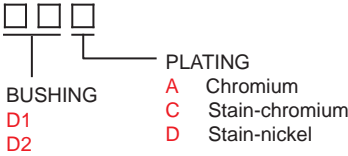
B3



D1 / B6



BUSHING PLATING



Chromium



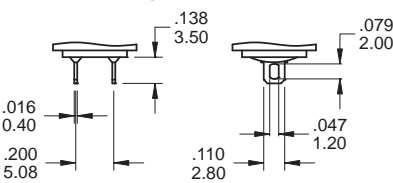
Stain-chromium



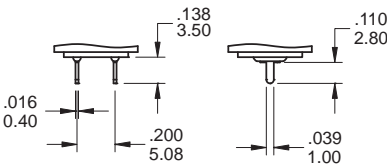
Stain-nickel

TERMINATION OPTIONS

M1 Solder lug

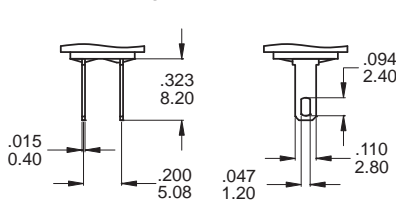


M4 PC Thru-hole



\* Only for PAS6 model type,Non-LED

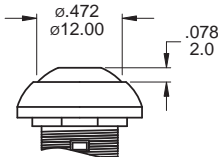
M3 Solder lug



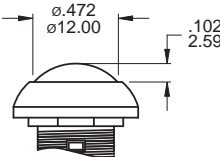
\* Only for PAS6 model type,Non-LED

CAP OPTIONS

FLAT STD

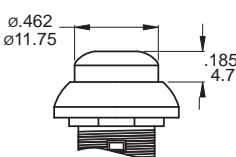


ROUND Non-LED



\* Only for B1,B2,B3,D2 bushing type

HIGH Non-LED



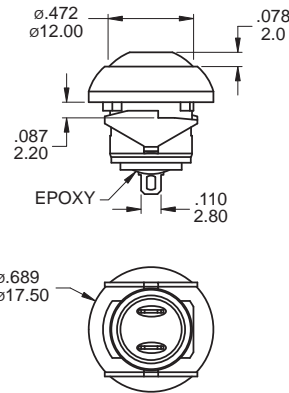
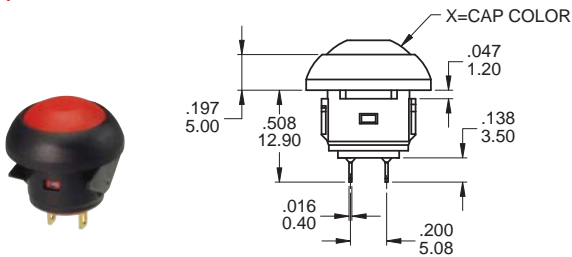
\* Only for B2,D2 bushing and PAS6 model type



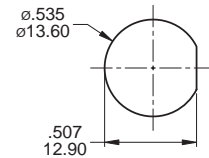
# PA Series

Sub-Miniature Pushbutton Switches

B1



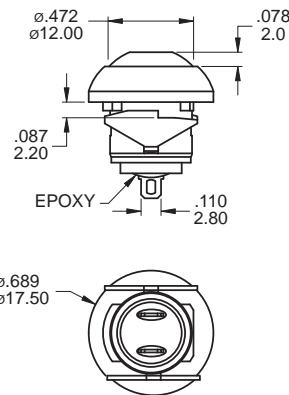
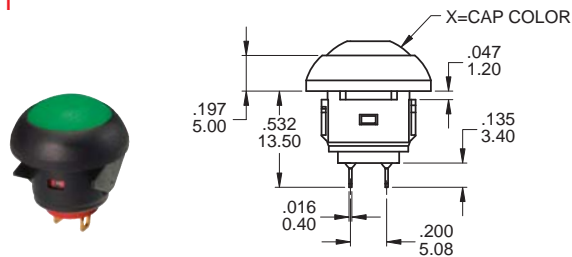
PANEL MOUNTING



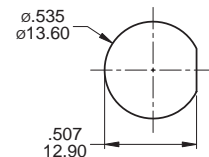
SPST

Part No. Shown : PAS6B1M1CESX-5

B1



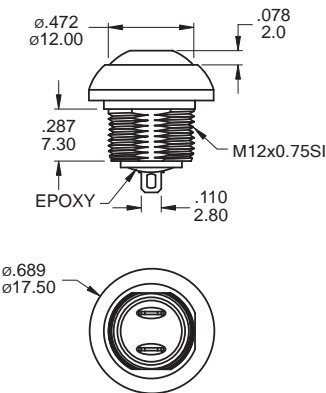
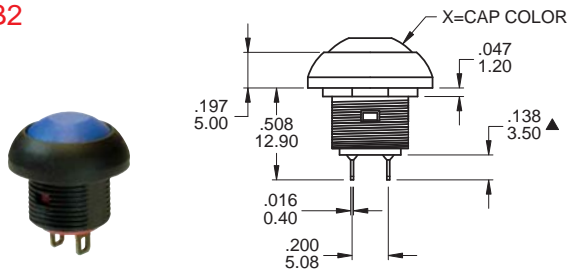
PANEL MOUNTING



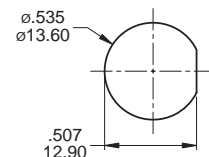
SPST

Part No. Shown : PAS7B1M1CESX-5

B2



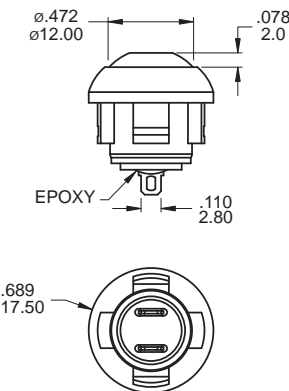
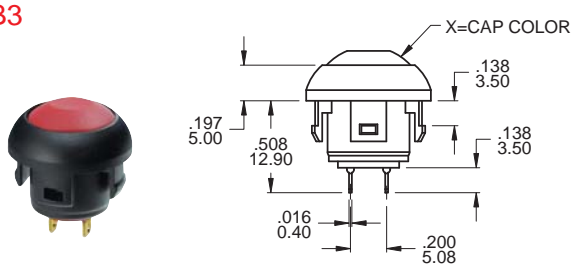
PANEL MOUNTING



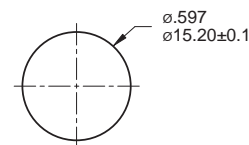
SPST

Part No. Shown : PAS6B2M1CESX-5

B3



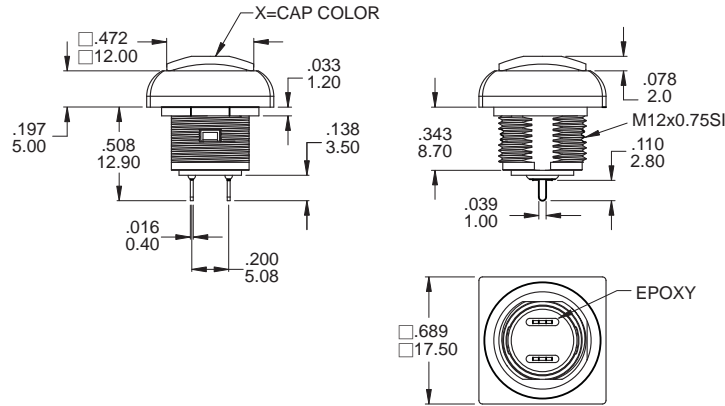
PANEL MOUNTING



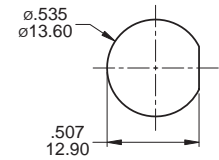
SPST

Part No. Shown : PAS6B3M1CESX-5

B6



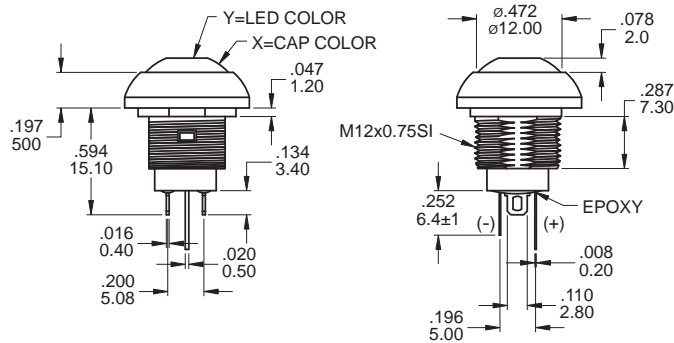
PANEL MOUNTING



SPST

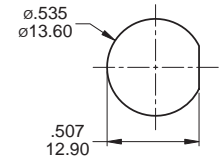
Part No. Shown : PAS6B6M4CESX-5

B2



ø.689  
ø17.50

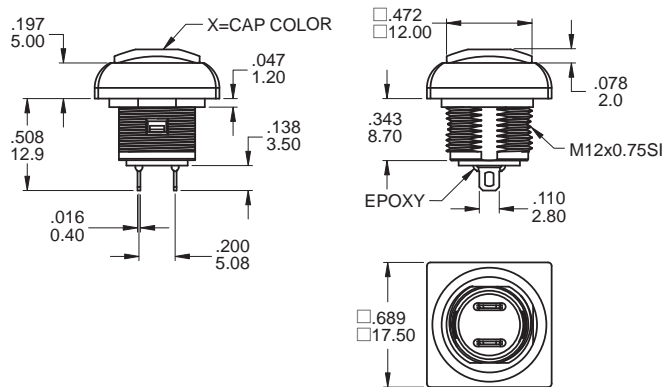
PANEL MOUNTING



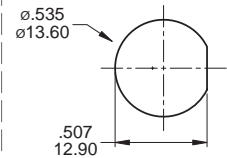
SPST

Part No. Shown : PAS6B2M1CESX-5LY

D1



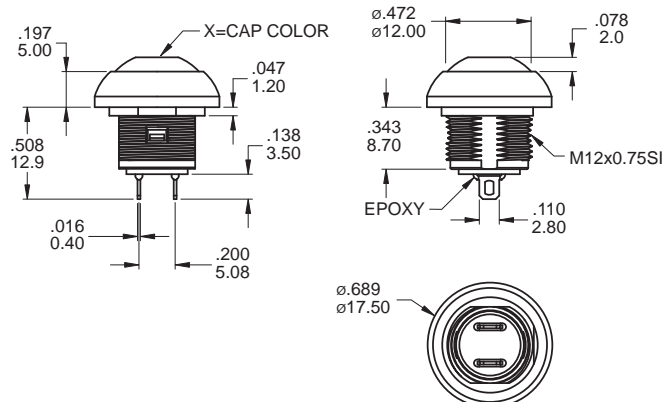
PANEL MOUNTING



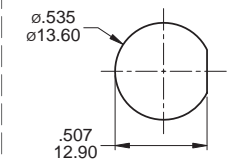
SPST

Part No. Shown : PAS6D1M1CESX-5

D2



PANEL MOUNTING



SPST

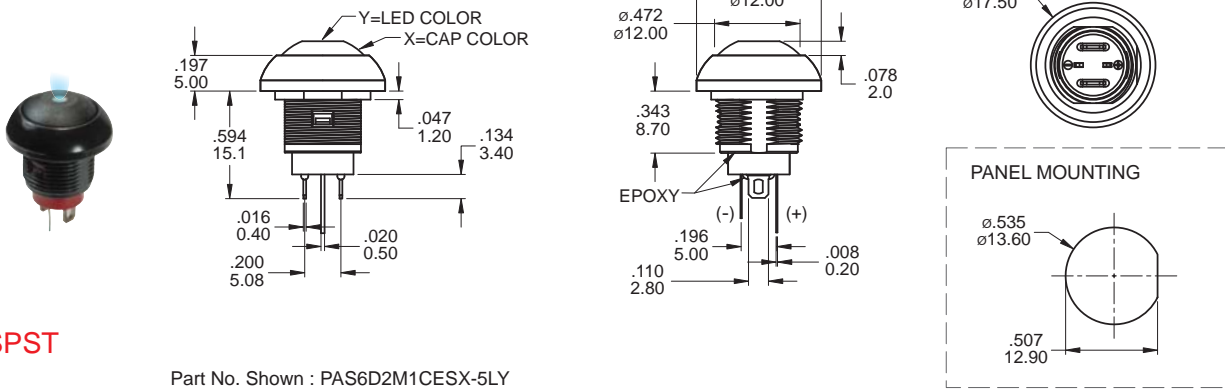
Part No. Shown : PAS6D2M1CESX-5



PA Series

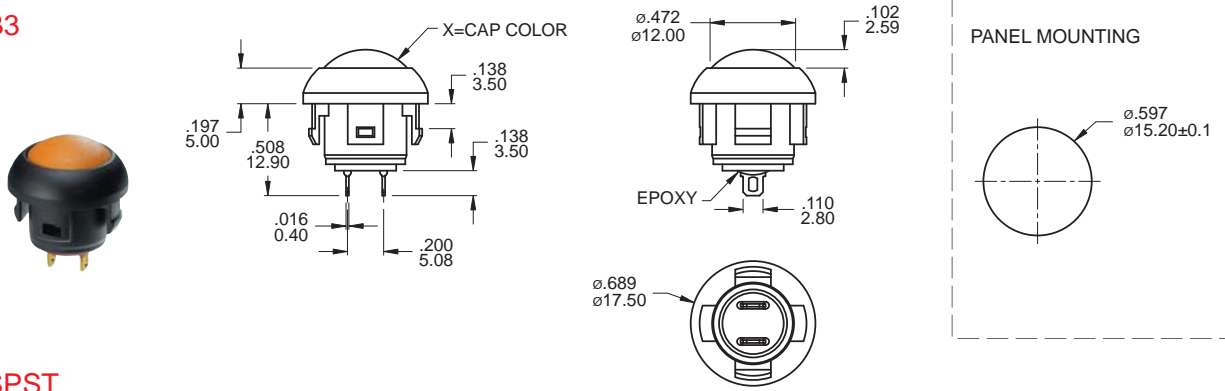
Sub-Miniature Pushbutton Switches

D2



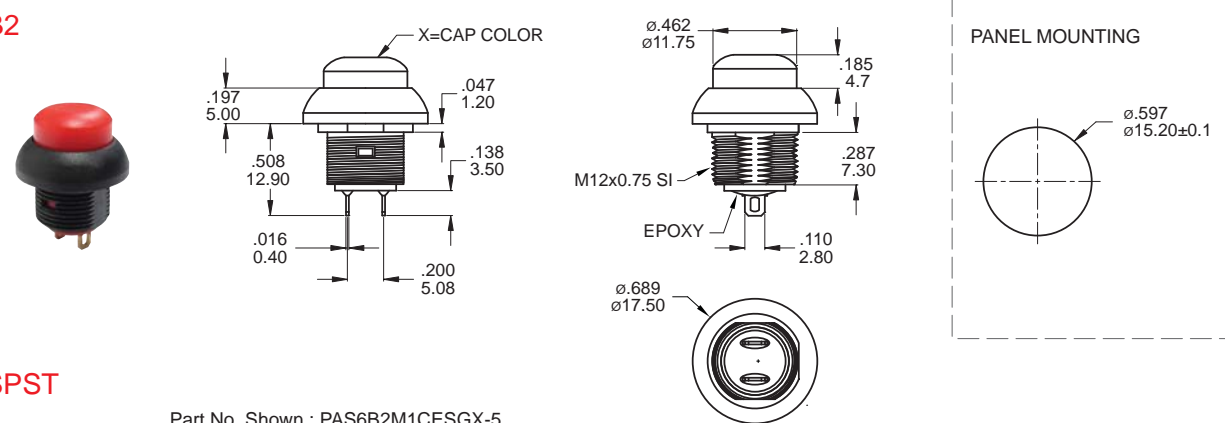
SPST

B3



SPST

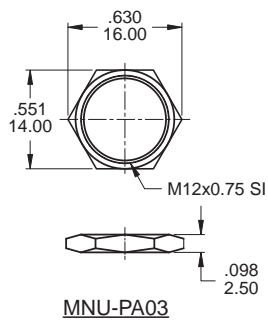
B2



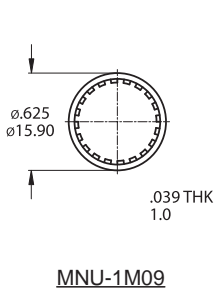
SPST

HARDWARE

M12 NUT

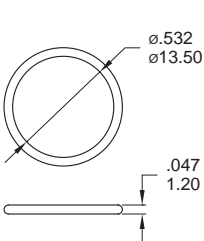


LOCK WASHER



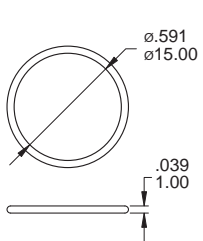
Supplied with B2 / D1 / D2 bushing

O-RING



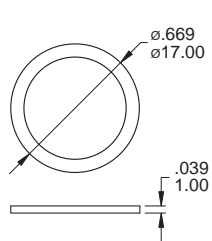
Supplied with PAL6 and D1 / D2 options

O-RING



Supplied standard with B3 options

EVA WASHER



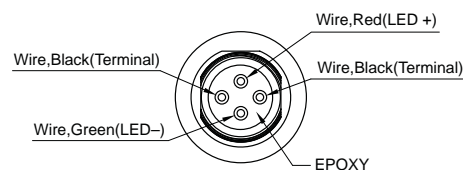
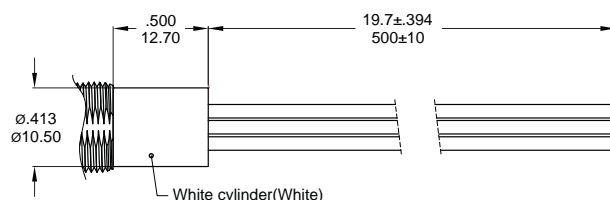
Supplied standard with B1 / B2 options

### WIRE

Note: When the switches with the wire assembly, we only test the electric conduction and will not test the contact resistance on the wire.

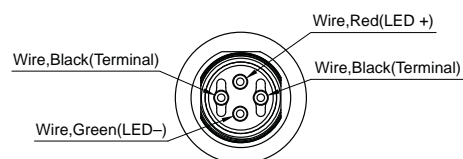
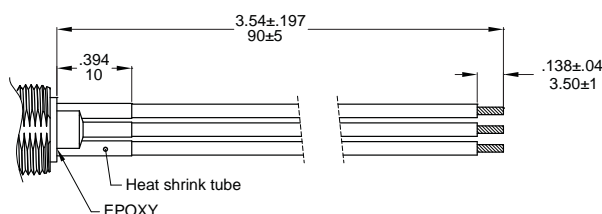
#### L1 Wire length: 500mm

※ Multi-wire lead AWG20, section 0.6mm<sup>2</sup>, UL approved. (Black / Green / Red)



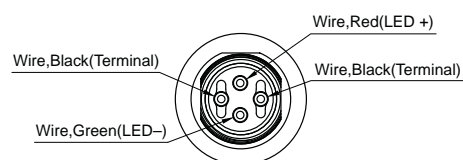
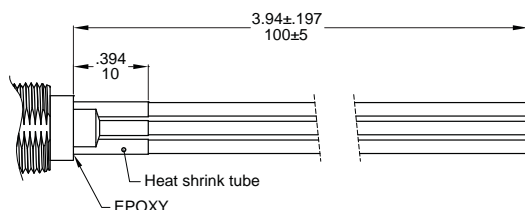
#### L2 Wire length: 90mm

※ Multi-wire lead AWG20, section 0.6mm<sup>2</sup>, UL approved. (Black / Green / Red)



#### L3 Wire length: 100mm

※ Multi-wire lead AWG20, section 0.6mm<sup>2</sup>, UL approved. (Black / Green / Red)

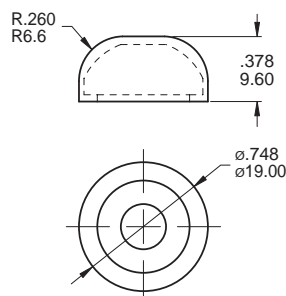


### RUBBER - HOOD

FCP-P003  
(Transparent cap)



FCP-P003-2  
(Black cap)



### SOLDERING PROCESSES

**MANUAL SOLDERING:** Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

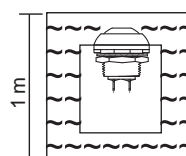
**WAVE SOLDERING:**

Recommended Soldering Temperature: 260 ± 5°C

Duration of Solder Immersion: Max 5 sec.

(PCB is 1.6mm in thickness)

IP 67 for the whole series:  
Protected against the effects of immersion up to 1 m water(30min)



# PA(LOCK) Series

Sub-Miniature Pushbutton Switches

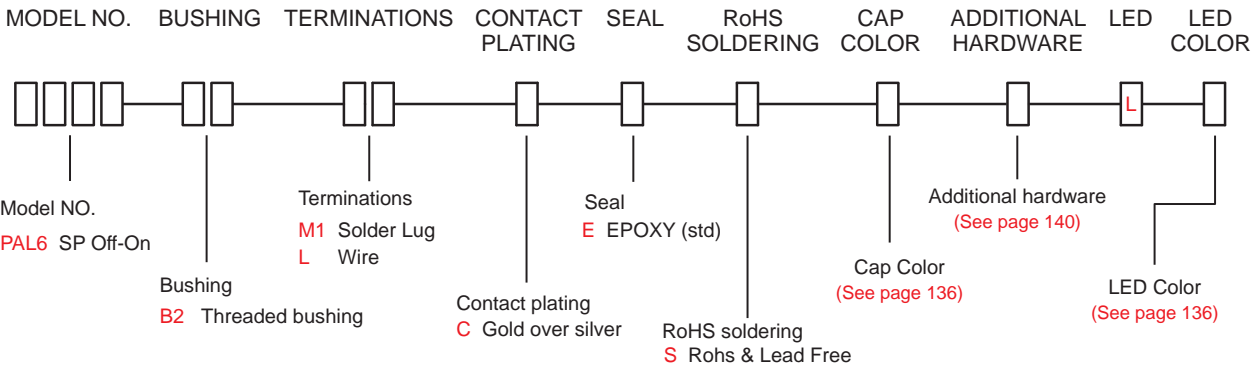


IP 67  
ACCORDING TO  
EN 60529:1991+A1:2001  
IEC 60529:2001



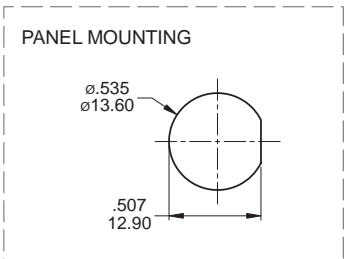
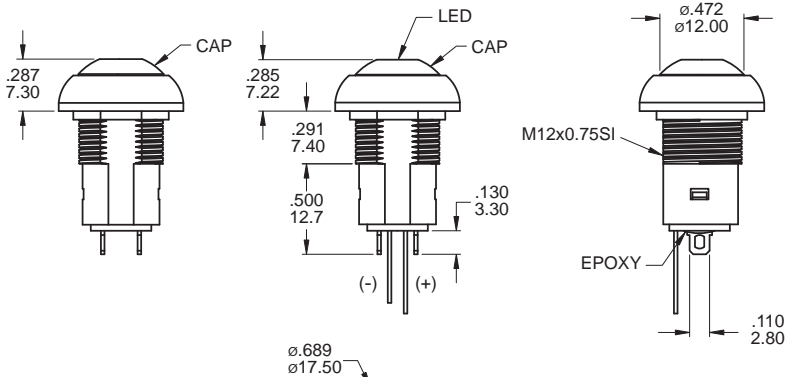
**SPECIFICATION:**  
**MAX. CURRENT/VOLTAGE RATING WITH RESISTIVE LOAD:**  
100mA 24VDC-life expectancy 200,000 cycles  
2A 125VAC-life expectancy 10,000 cycles  
**INITIAL CONTACT RESISTANCE:** 50mΩ max.  
**INSULATION RESISTANCE:** 1GΩ min.at 500VDC.  
**DIELECTRIC STRENGTH:** 1,000 VAC rms.  
**ELECTRICAL LIFE AT FULL LOAD:** 200,000 cycles.  
**OPERATING TEMPERATURE:** -30°C to 85°C.  
**PANEL THICKNESS:** 1.5 mm (.059) min. -4 mm (.157) max.  
**TOTAL TRAVEL:** 2.5 mm(.098)  
**OPERATING FORCE:** 2N~5N  
**CONTACT BOUNCE:** 10 ms.  
**MECHANICAL LIFE:** 1,000,000 cycles.  
**TORQUE:** 0.5 Nm max.applied to nut  
**SOLDERING:** 350°C max.for 5 seconds.

## HOW TO ORDER

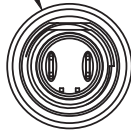


## SWITCH FUNCTION

MODEL NO.	POS.1	POS.2
PAL6	OFF	ON
TERM. COMM.	OPEN	1-3
SCHEMATIC		



Non-LED



LED

- ADDITIONAL HARDWARE**
- 1.M12 X 0.75 NUTS (MNU- PA03)
  - 2.LOCKING WASHER (MNU-1M09)
  - 3.O-RING (FCP-A253)

## Wire

※ Multi-wire lead AWG20,section 0.6mm²,UL approved.(Black / Green / Red)

### L=Wire length

Code:L1=500mm  
Code:L2=90mm  
Code:L3=100mm

