



### 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 : 3.0±0.25 mm (.118)

**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.

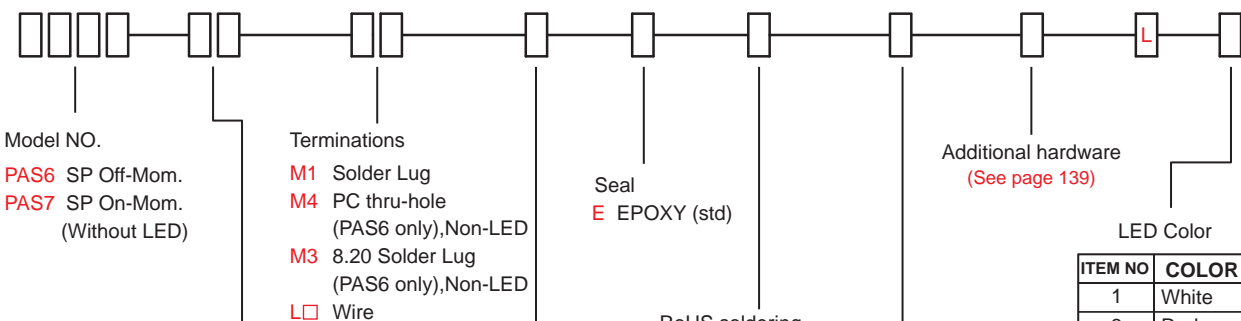
**BUSHING:** Polyamide 6/6.

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



## HOW TO ORDER

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



#### 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 136.

#### Cap Color

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

| CAP<br>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.



# PA Series

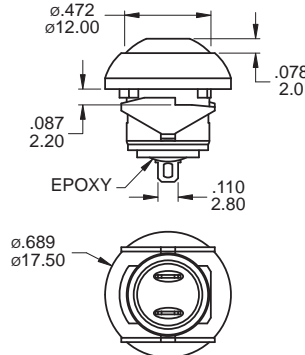
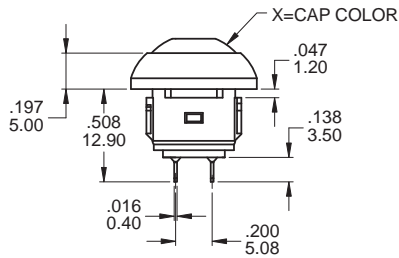
Sub-Miniature Pushbutton Switches

## SWITCH FUNCTION

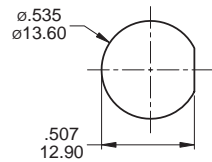
| NO. POLES | MODEL NO. | SWITCH FUNCTION |          | CONNECTED TERMINALS |       |           |
|-----------|-----------|-----------------|----------|---------------------|-------|-----------|
|           |           | POS.1           | POS.2    | POS.1               | POS.2 | SCHEMATIC |
|        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

MOM=MOMENTARY

B1



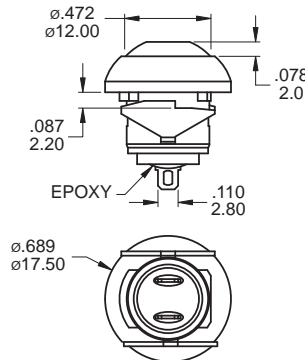
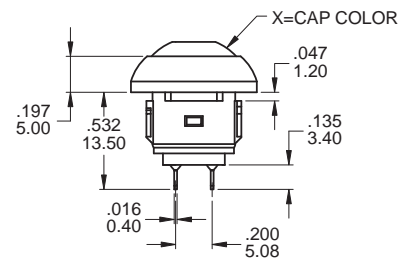
PANEL MOUNTING



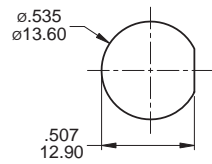
SPST

Part No. Shown : PAS6B1M1CESX-5

B1



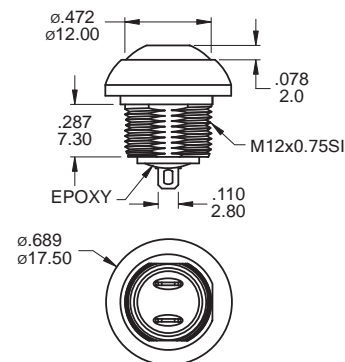
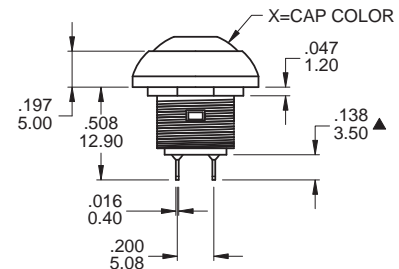
PANEL MOUNTING



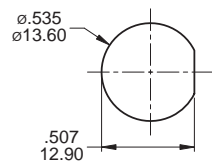
SPST

Part No. Shown : PAS7B1M1CESX-5

B2



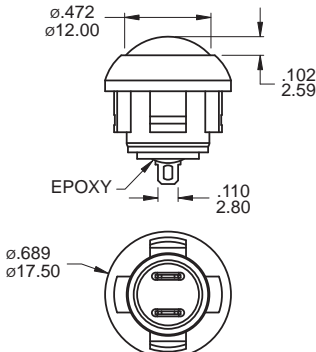
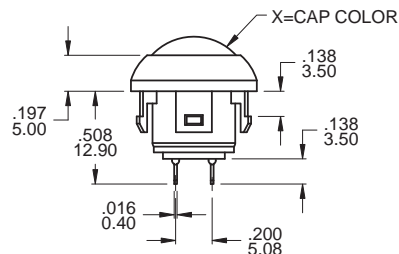
PANEL MOUNTING



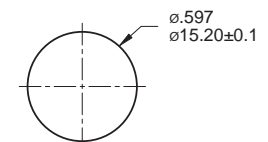
SPST

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B3

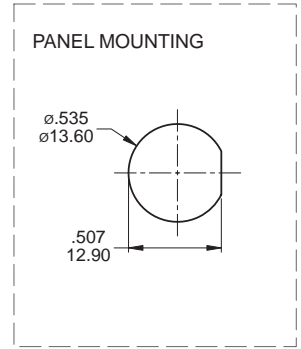
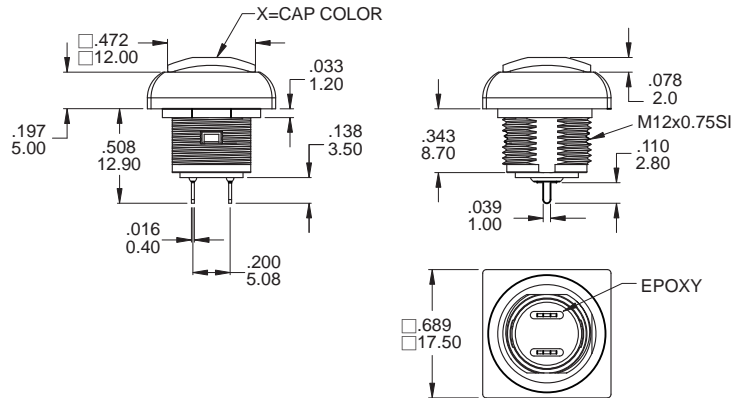


PANEL MOUNTING



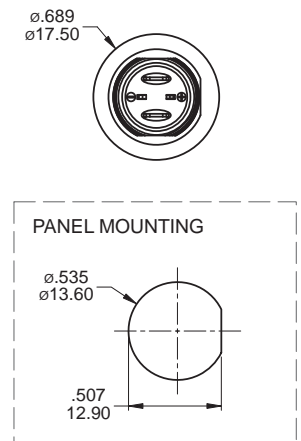
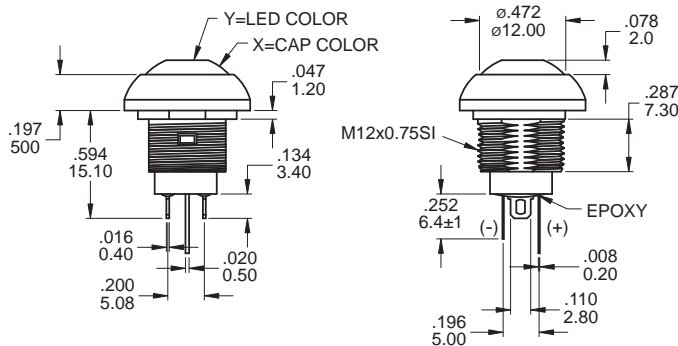
SPST

Part No. Shown : PAS6B3M1CESAX-5



SPST

Part No. Shown : PAS6B6M4CESX-5



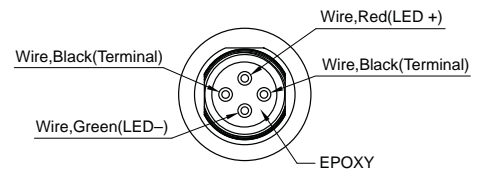
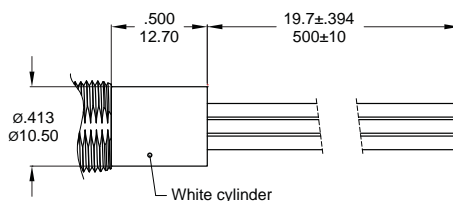
SPST

Part No. Shown : PAS6B2M1CESX-5LY

WIRE

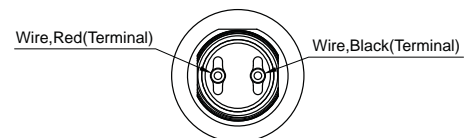
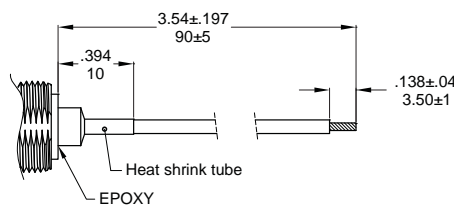
Note: When the switches with the wire assembly, we only test the electric conduction and will not test the contact resistance on the wire.

L1



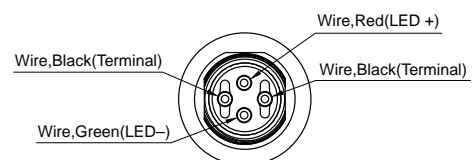
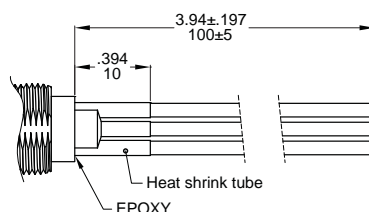
※ Multi-wire lead AWG20, section 0.6mm<sup>2</sup>, UL approved. (Black / Green / Red)

L2



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

L3

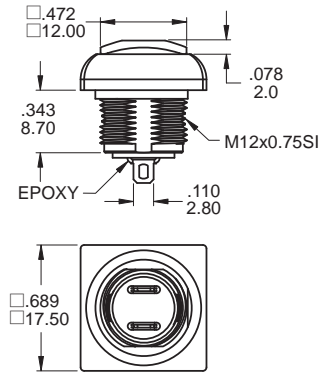
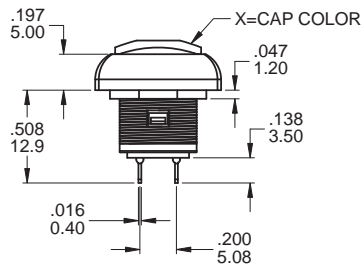


※ Multi-wire lead AWG20, section 0.6mm<sup>2</sup>, UL approved. (Black / Green / Red)

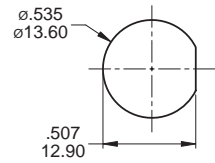


# PA Series

Sub-Miniature Pushbutton Switches

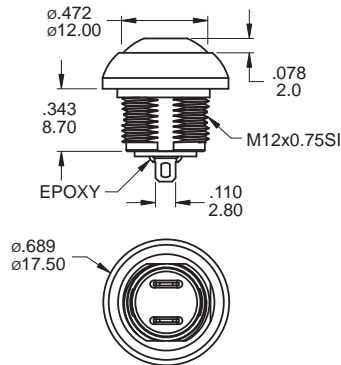
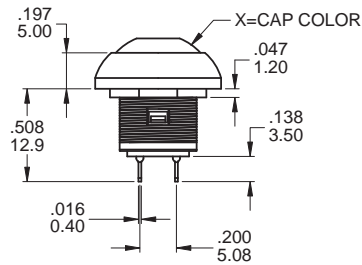


PANEL MOUNTING

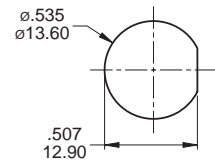


SPST

Part No. Shown : PAS6D1M1CESX-5

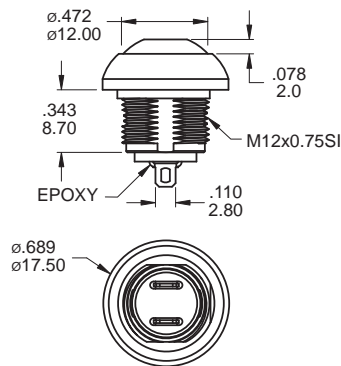
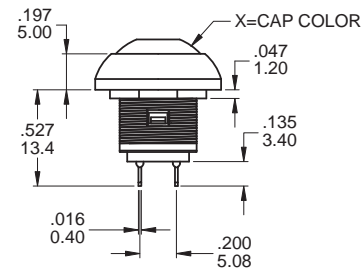


PANEL MOUNTING

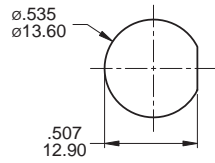


SPST

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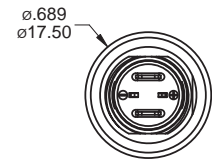
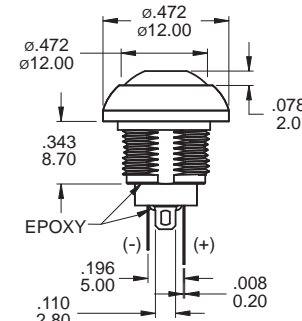
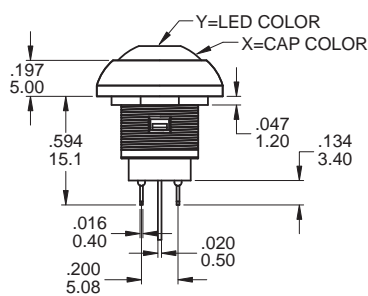


PANEL MOUNTING



SPST

Part No. Shown : PAS7D2M1CESX-5



SPST

Part No. Shown : PAS6D2M1CESX-5LY

## BUSHING PLATING



PLATING

- A Chromium
- C Stain-chromium
- D Stain-nickel



Chromium



Stain-chromium



Stain-nickel



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

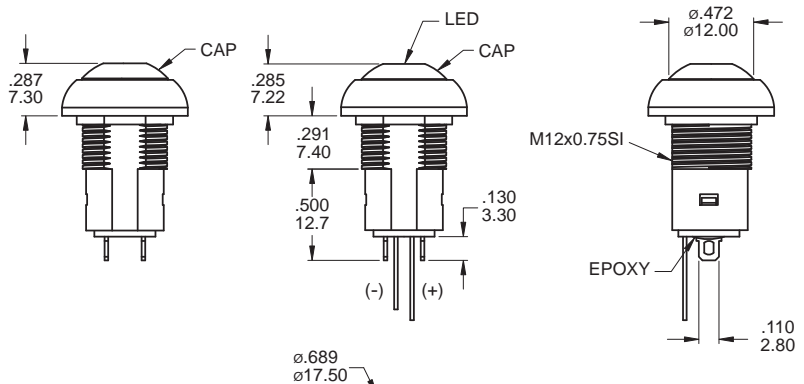
**SOLDERING:** 350°C max.for 5 seconds.

## HOW TO ORDER

| MODEL NO.                          | BUSHING                               | TERMINATIONS   | CONTACT PLATING                              | SEAL                         | RoHS SOLDERING                              | CAP COLOR                   | ADDITIONAL HARDWARE                   | LED             | LED COLOR                   |
|------------------------------------|---------------------------------------|--|--|------------------------------|---|-----------------------------|---------------------------------------|-----------------|-----------------------------|
| Model NO.<br><b>PAL6</b> SP Off-On | Bushing<br><b>B2</b> Threaded bushing | Terminations<br><b>M1</b> Solder Lug<br><b>L</b> Wire (See page 135) | Contact plating<br><b>C</b> Gold over silver | Seal<br><b>E</b> EPOXY (std) | RoHS soldering<br><b>S</b> Rohs & Lead Free | Cap Color<br>(See page 133) | Additional hardware<br>(See page 139) | LED<br><b>L</b> | LED Color<br>(See page 133) |

## SWITCH FUNCTION

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



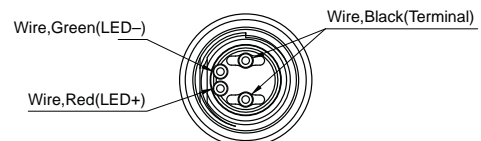
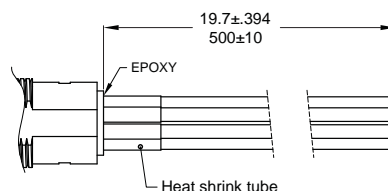
Non-LED

LED

### ADDITIONAL HARDWARE

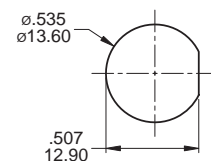
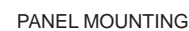
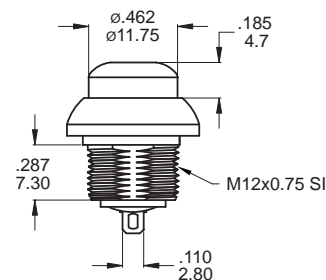
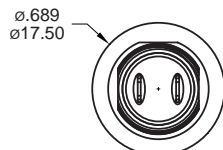
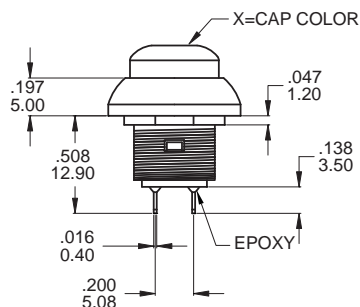
- 1.M12 X 0.75 NUTS (MNU- PA03)
- 2.LOCKING WASHER (MNU-1M09)
- 3.O-RING (FCP-A253)

## L1



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

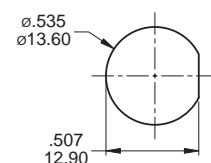
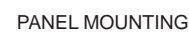
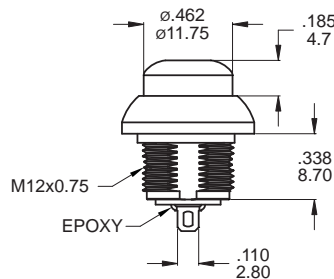
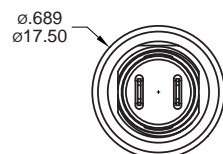
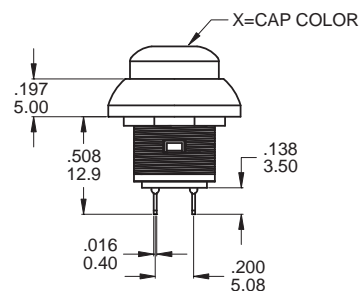
## Sub-Miniature Pushbutton Switches



SPST

Part No. Shown : PAS6B2M1CESGX-5

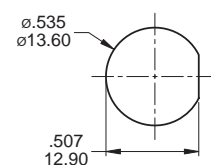
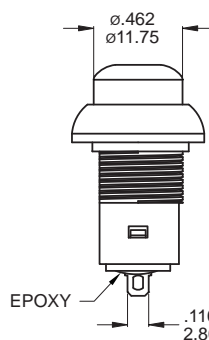
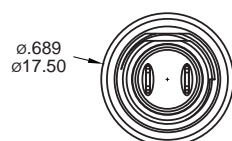
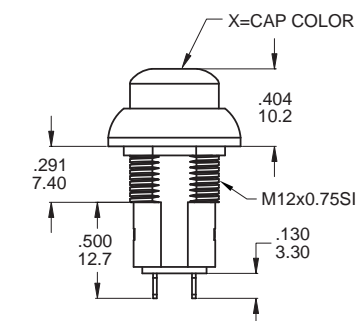
D2



SPST

Part No. Shown : PAS6D2M1CESGX-5

B2

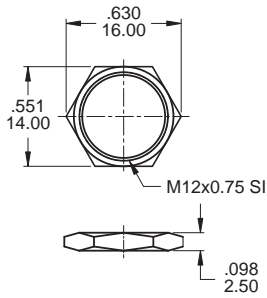


SPST

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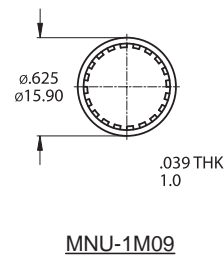
### HARDWARE

#### M12 NUT



MNU-PA03

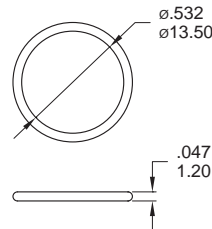
#### LOCK WASHER



MNU-1M09

Supplied with B2 / D1 / D2  
bushing

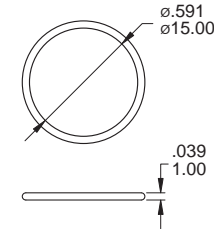
#### O-RING



FCP-A253

Supplied with PAL6 and  
D1 / D2 options

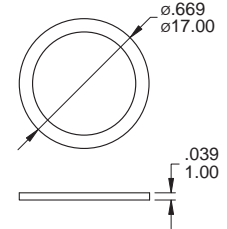
#### O-RING



MCP-P004

Supplied standard with  
B3 options

#### EVA WASHER



FSU-PA01

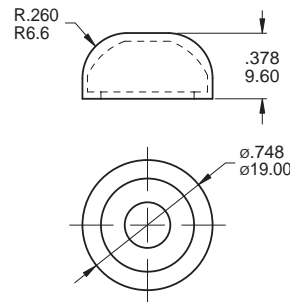
Supplied standard with  
B1 / B2 options

### RUBBER - HOOD

#### MCP-P003 (Transparent cap)



#### MCP-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(30mn)

