



Carling Technologies®  
/// NOW PART OF



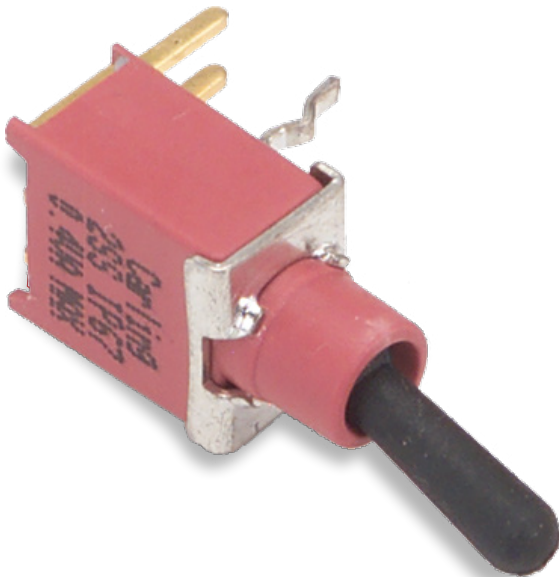
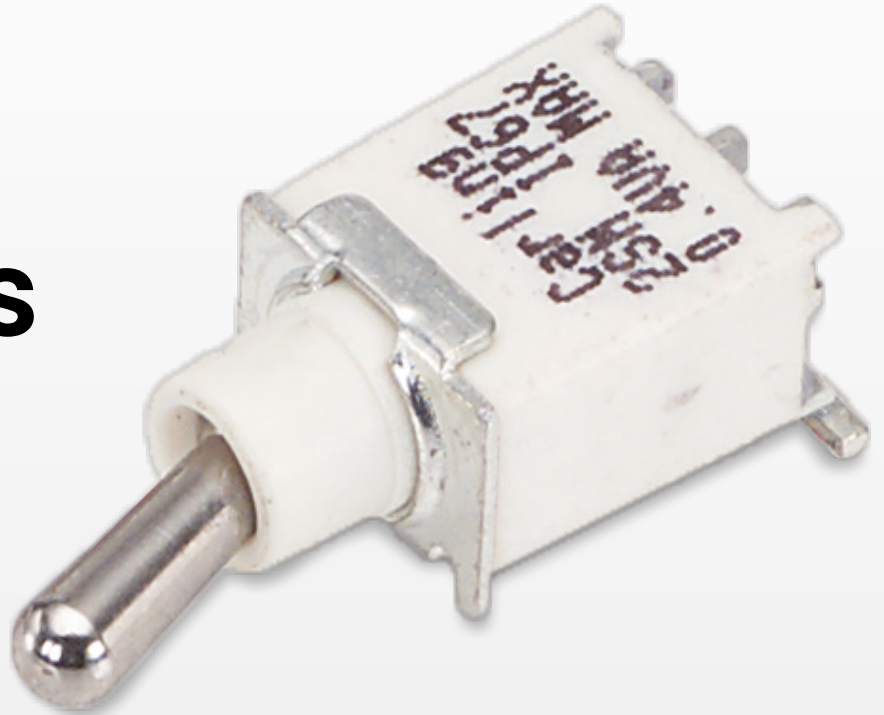
Littelfuse®

# 2S-Series

Miniature Toggles Switches

**PRODUCT WEBPAGE**

*request sample, configure part*



The 2S family of sub-miniature toggle switches is composed of three switch series; the 2SI-Series toggle switch, the 2SS-Series sealed toggle switch, and the 2SM-Series surface mount sealed sub-miniature toggle switch. All of these series offer a variety of ratings, circuits, contact materials, terminal platings, and actuator types.

**1-2**  
Poles

**.4-3**  
Amps

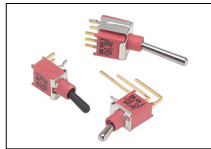
**125, 250**  
VAC

**28**  
VDC

## Typical Applications

- Instrumentation
- Telecommunications
- Networking
- Medical
- Military

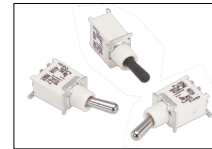
# Tech Specs



**2SS-Series**  
Sealed  
Sub-Miniature  
Toggle Switch



**2SI-Series**  
Sub-Miniature  
Toggle Switch



**2SM-Series**  
Sealed Surface Mount  
Sub-Miniature  
Toggle Switch

## Electrical

Contact Rating	refer to ordering scheme
Electrical Life	30,000 make & break cycles @ full load
Contact Resistance	20 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

## Physical

Operating Temperature	-30°C to +85°C
Index of Protection	2SS & 2SM-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

## Material

Case	all UL94 V-0 <b>2SI-Series:</b> Dially phthalate (DAP) <b>2SS-Series:</b> Glass filled nylon 6/6, flame retardant, heat stabilized <b>2SM-Series:</b> Glass filled nylon 4/6, flame retardant, heat stabilized
Rocker	<b>2SI-Series:</b> Brass, chrome plated. <b>2SS &amp; 2SM-Series:</b> Brass, chrome plated or nylon, internal o-ring seal
Bushing	<b>2SI-Series:</b> Brass, nickel plated <b>2SS-Series:</b> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) <b>2SM-Series:</b> Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
Housing	Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy

# Ordering Scheme

Sample Part Number **2SS - MSP 1 - T1 - B4 - M6 G E**

Selection 1 2 3 4 5 6 7 8

### 1. SERIES

**2SS** Sealed Sub-Miniature Toggle Switch

### 2. POLES

**MSP** Single pole - uses terminals 1, 2 & 3  
**MDP** Double pole - uses terminals 1, 2, 3, 4, 5 & 6

### 3. CIRCUIT

() - momentary			
Position:	1	2	3
	2-3, 5-6	Connected Terminals	2-1, 5-4
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

### 4. ACTUATOR STYLE / LENGTH

<b>T1</b> Round toggle .421" [10.70 mm]	<b>P2</b> ESD resistant toggle .268" [6.80 mm]
<b>T2</b> Round toggle .240" [6.10 mm]	
<b>T3</b> Round toggle .342" [8.70 mm]	<b>P3</b> ESD resistant toggle .244" [6.20 mm]
<b>T4</b> Round toggle .551" [14.00 mm]	
<b>P1</b> ESD resistant toggle .425" [10.80 mm]	<b>P4</b> ESD resistant toggle .291" [7.40 mm]

### 5. BUSHING

**B1** Threaded **B4** Unthreaded

### 6. TERMINATION

**M1** Solder Lug **M7** PC Mount, 90° vertical  
**M2** PCB **M71** Snap-In, U bracket, 90° horizontal  
**M6** PC Mount, 90° horizontal  
**M61** Snap-In, U bracket, 90° horizontal  
**VS2** PC Mount, U bracket  
**VS21** Snap-In, U bracket

### 7. CONTACTS / TERMINALS

Contact	Material	Terminal Plating	Rating	Approvals
<b>G</b>	silver <sup>1</sup>	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
<b>K</b>	gold <sup>2</sup>	tin <sup>3</sup>	0.4VA max 20V max (AC/DC)	IP67
<b>P</b>	silver <sup>1</sup>	tin <sup>3</sup>	3A 125VAC o28VDC, 1.5A 250VAC	IP67
<b>R</b>	gold <sup>2</sup>	gold <sup>2</sup>	0.4VA max 20V max (AC/DC)	IP67

### 8. EPOXY SEAL

**E** Epoxy Seal **0** without Epoxy Seal

Notes:

Tin option not available with M1 terminal.

1 Movable contact & terminal platings: silver over copper alloy

2 Movable contact & terminal platings: gold over nickel over copper alloy

3 Terminal platings: tin over nickel over copper alloy

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

# Ordering Schemes

Sample Part Number 2S1 - MSP 1 - T1 - B4 - M6 Q E

Selection 1 2 3 4 5 6 7 8

## 1. SERIES

**2S1** Sub-Miniature Toggle Switch

## 2. POLES

**MSP** Single pole - uses terminals 1, 2 & 3  
**MDP** Double pole - uses terminals 1, 2, 3, 4, 5 & 6

## 3. CIRCUIT

( ) - momentary  
**Position:** 1 2 3  
 1 2-3, 5-6 ON Connected Terminals 2-1, 5-4  
 2 ON NONE (ON)  
 3 ON OFF ON  
 4 (ON) OFF (ON)  
 5 ON OFF (ON)

## 4. ACTUATOR STYLE

**T1** Round toggle .374" [9.50 mm] **T4** Round toggle .449" [11.40 mm]  
**T3** Round toggle .311" [7.90 mm]  
**T2** Round toggle .236" [6.00 mm]

## 5. BUSHING

**B1** Threaded Standard, keyway **B5** High Torque, flat, .276"  
**B2** Non-Threaded Standard, keyway **B6** High Torque, keyway, .276"  
**B3** Threaded Short, keyway **B7** Long threaded  
**B4** Non-Threaded Short, keyway **B8** Non threaded Long, keyway

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

## 6. TERMINATION

**M1** Solder Lug **M6** PC Mount, 90° horizontal  
**M71** Right Angle PC Thru Hole, vertical **VS21** Snap-In, U bracket  
**M2** PCB **M61** Snap-In, Right Angle  
**VS2** PC Mount, U bracket **M7** PC Mount, 90° vertical

## 7. CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
<b>G</b> silver <sup>2</sup>	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
<b>K</b> <sup>8</sup> gold <sup>3,6</sup>	tin <sup>5</sup>	0.4VA max 20V max (AC/DC)	N/A
<b>P</b> <sup>8</sup> silver <sup>2,7</sup>	1.5A 250VAC silver <sup>2</sup>	3A 125VAC or 28VDC	UL, CE
<b>Q</b> silver <sup>2</sup>	1.5A 250VAC gold <sup>4</sup>	0.4VA max 20V max (AC/DC)	N/A
<b>R</b> gold <sup>3</sup>			

## 8. EPOXY SEAL

**E** Epoxy Seal **0** without Epoxy Seal

Notes: Tin option available with PC type terminations only.

- All Switches come with standard nut, washer and locking ring shipped bulk. B5 & B7 using styles use small locking ring. See page 76-77
- Movable contact and terminal platings: silver over copper alloy
- Movable contact and terminal platings: gold over nickel over copper alloy
- Terminal platings: gold over nickel over copper alloy
- Terminal platings: tin over copper alloy
- Terminal contact platings: gold over nickel alloy
- Terminal contact platings: silver over nickel alloy
- Not available with M1 terminal
- Lengths shown are with B1 - B4 bushings. For B5 & B6 subtract .108", for B7 & B8 subtract .043"

Sample Part Number 2SM - MSP 1 - T1 - M6 G E T/R

Selection 1 2 3 4 5 6 7 8

## 1. SERIES

**2M1** Miniature Toggle Switch

## 2. POLES

**MSP** Single pole - uses terminals 1, 2 & 3

## 3. CIRCUIT

( ) - momentary  
**Position:** 1 2 3  
 1 2-3 ON Connected Terminals 2-1  
 2 ON NONE (ON)  
 3 ON OFF ON  
 4 (ON) OFF (ON)  
 5 ON OFF (ON)

## 4. ACTUATOR STYLE / LENGTH

**T1** Round toggle .425" [10.80 mm] .244" [6.20 mm]  
**T2** Round toggle .240" [6.10 mm] **P4** ESD resistant plastic toggle .291" [7.40 mm]  
**P1** ESD resistant plastic toggle .425" [10.80 mm]  
**P2** ESD resistant plastic toggle .268" [6.80 mm]  
**P3** ESD resistant plastic toggle

## 5. TERMINATION

**K6** Surface Mount, .433" [11.00 mm] **M7** Surface Mount, 90° vertical  
**L6** Surface Mount, .354" [9.00 mm] **S6** Surface Mount, 90°, .353" [8.96 mm]  
**M6** Surface Mount, 90° flat, .2X86" [7.26 mm] See dimensional specifications.

## 6. CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
<b>G</b> silver <sup>2</sup>	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
<b>K</b> gold <sup>3</sup>	tin <sup>4</sup>	0.4VA max 20V max (AC/DC)	IP67
<b>P</b> silver <sup>2</sup>	tin <sup>4</sup>	3A 125VAC or 28VDC, 250VAC	IP67
<b>Q</b> silver <sup>2</sup>	1.5A silver <sup>2</sup>	3A 125VAC or 28VDC, 250VAC	IP67
<b>R</b> gold <sup>3</sup>	1.5A gold <sup>3</sup>	0.4VA max 20V max (AC/DC)	IP67

## 7. EPOXY SEAL

**E** Epoxy Seal **0** without Epoxy Seal

## 8. PACKAGING

**T/R** tape reel - 500 pieces per reel  
 Switches are bulk packed, unless T/R is specified at the end of the part number.

Notes:

- Tin option available with PC type terminations only.
- Bushing is unthreaded .177" [4.50 mm] height
- Movable contact & terminal platings: silver over copper alloy
- Movable contact & terminal platings: gold over nickel over copper alloy
- Terminal platings: tin over nickel over copper alloy

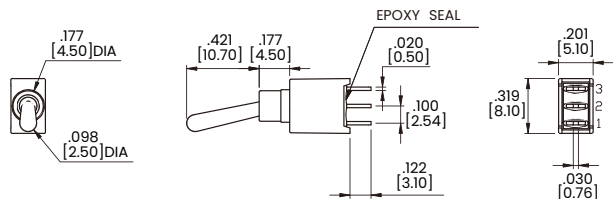
[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

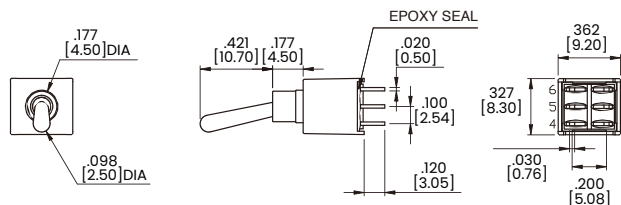
# Dimensional Specs

inches [millimeters]

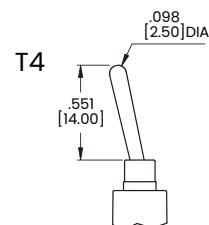
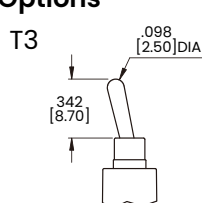
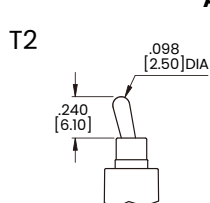
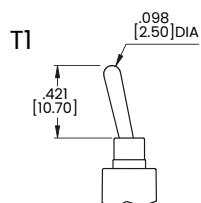
## Single Pole



## Double Pole

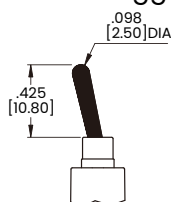


## Actuator Options

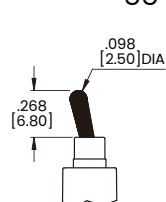


\* B4 bushing shown. Subtract 2.55mm from toggle length for B1 bushing.

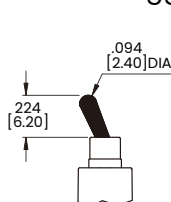
## P1 Plastic Toggle



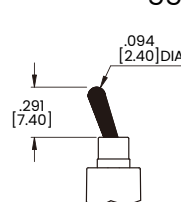
## P2 Plastic Toggle



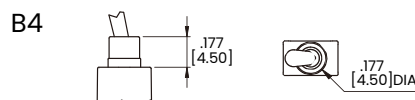
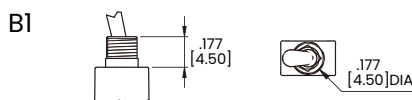
## P3 Plastic Toggle



## P4 Plastic Toggle



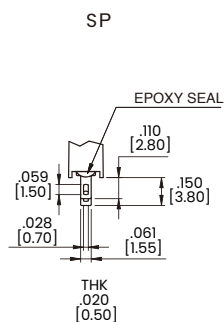
## Bushing Options



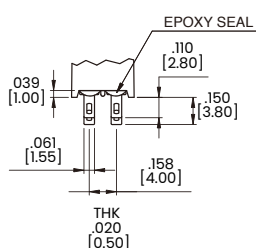
\* Subtract 2.55mm from toggle length for B1 bushing.

## Termination Options

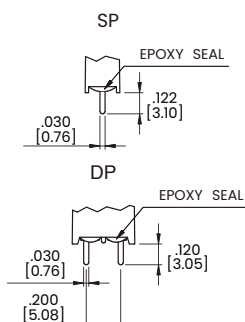
### M1 STD. Solder Lug



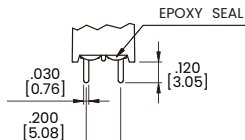
### DP



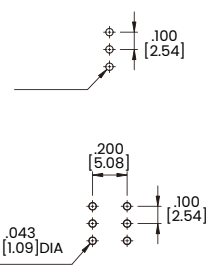
### M2 PC Thru-Hole



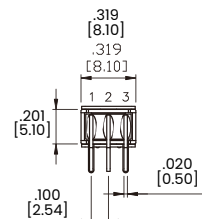
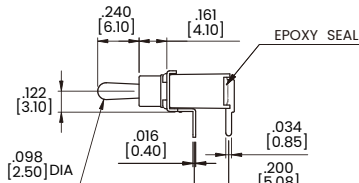
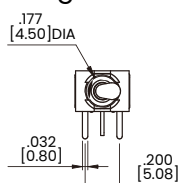
### DP



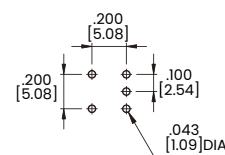
### P.C.MOUNTING



## M6 Single Pole



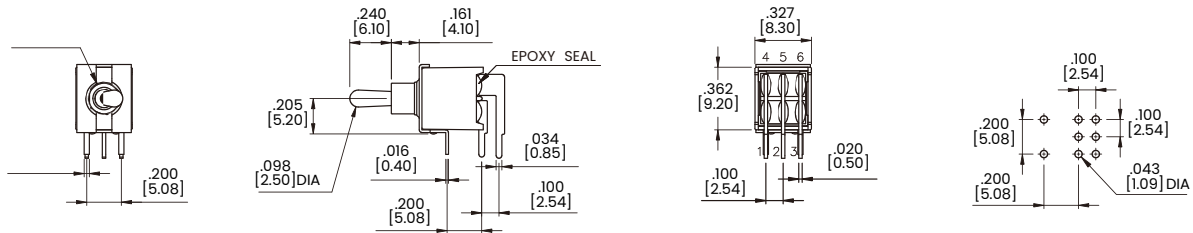
## P.C.MOUNTING



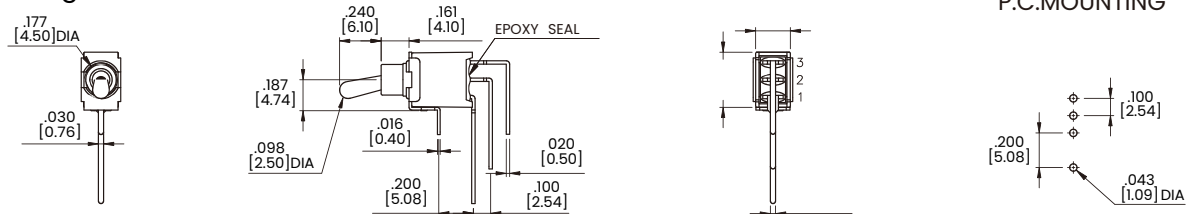
# Dimensional Specs

inches [millimeters]

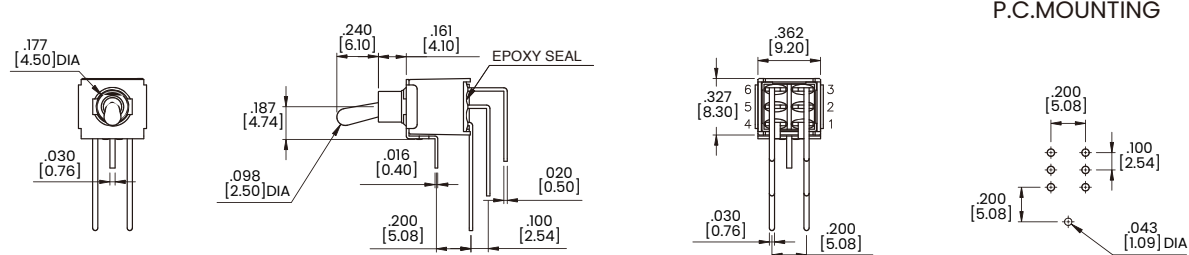
## M6 Double Pole



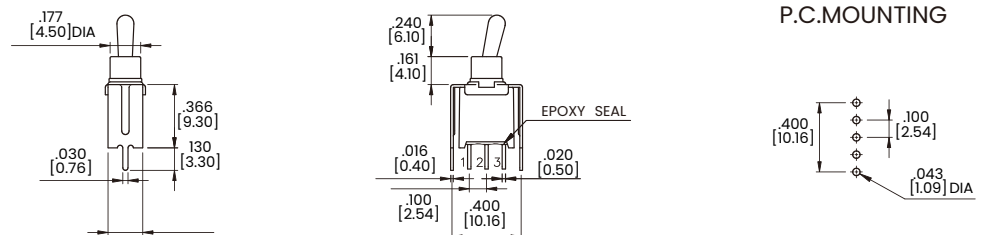
## M7 Single Pole



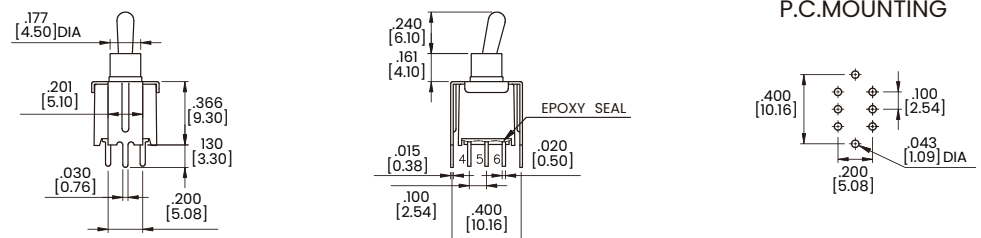
## M7 Double Pole



## VS2 Single Pole

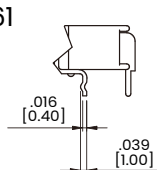


## VS2 Double Pole

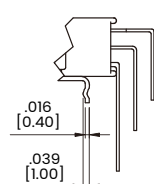


## Snap-In Termination Options

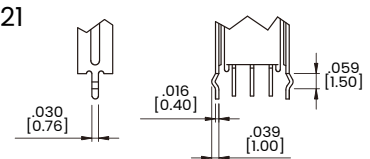
### M61



### M71



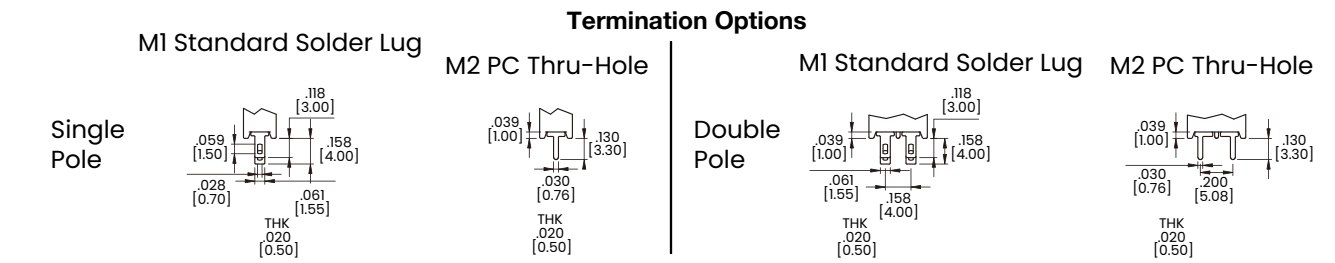
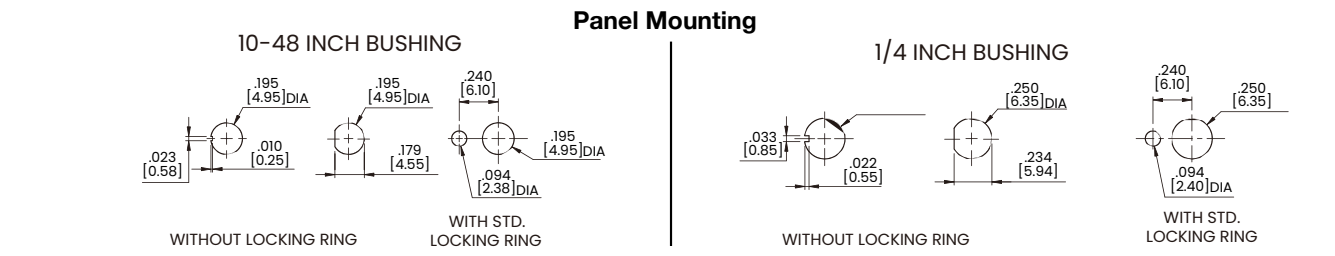
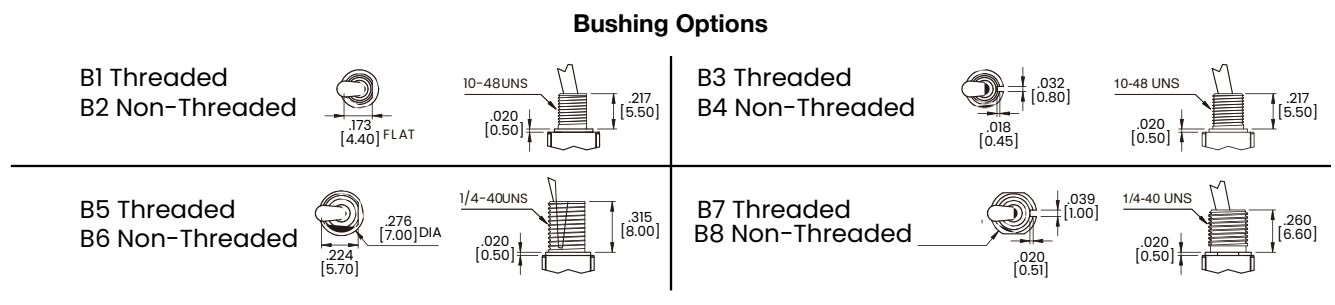
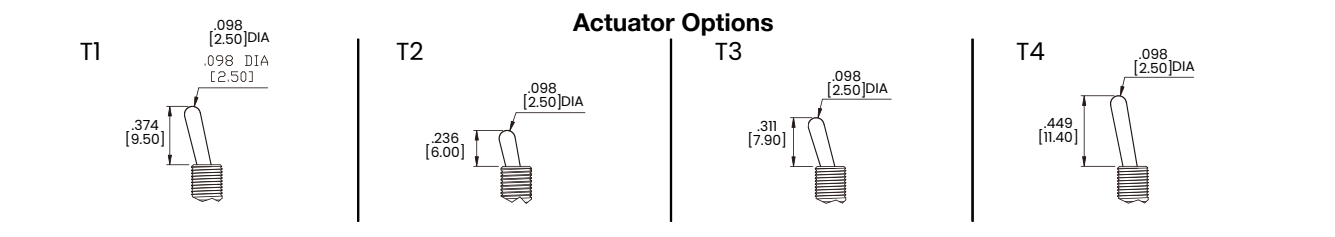
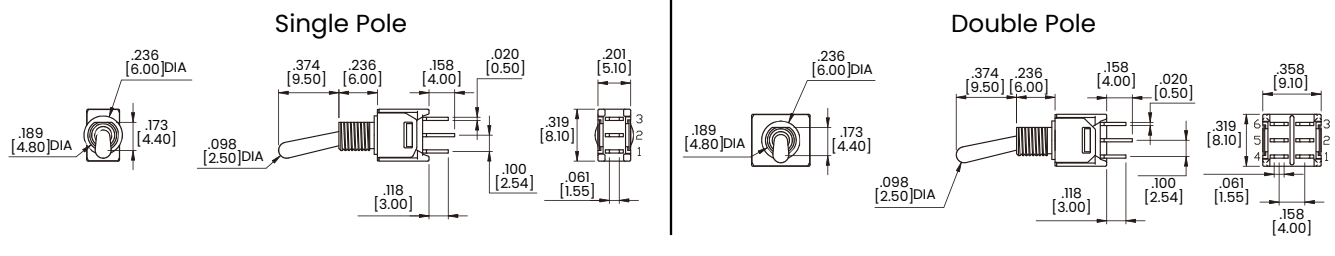
### VS21



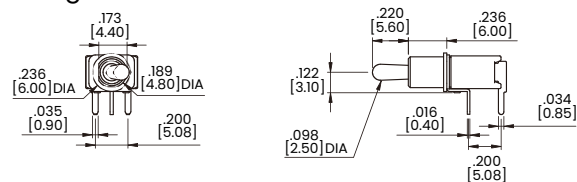
\* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

# Dimensional Specs

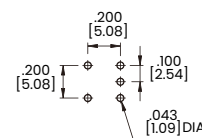
inches [millimeters]



## M6 Single Pole



## P.C. MOUNTING

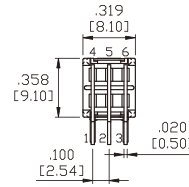
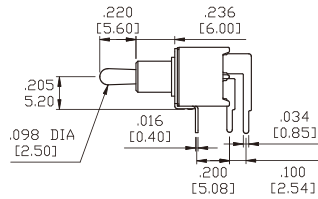
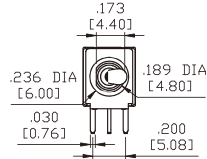


# Dimensional Specs

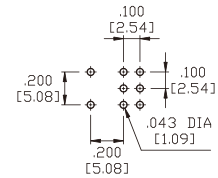
inches [millimeters]

## Termination Options

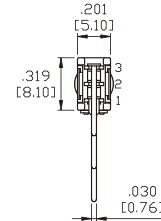
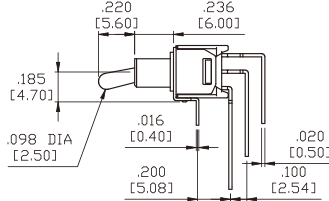
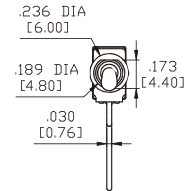
### M6 Double Pole



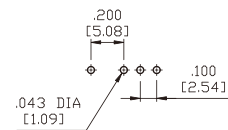
### P.C.MOUNTING



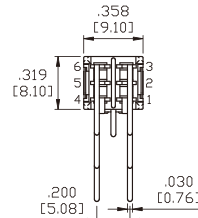
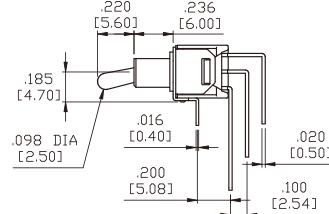
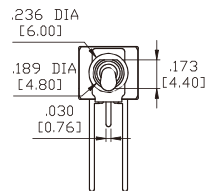
### M7 Single Pole



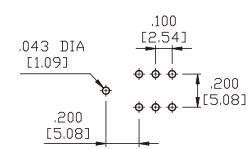
### P.C.MOUNTING



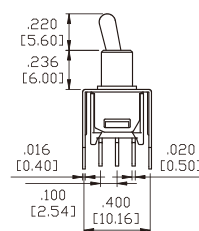
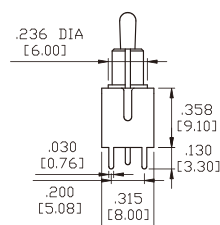
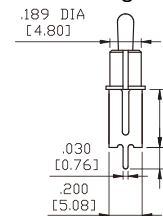
### M7 Double Pole



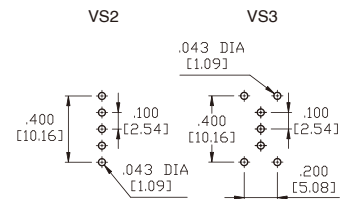
### P.C.MOUNTING



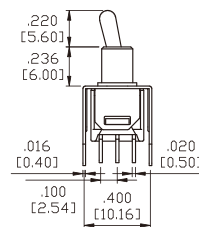
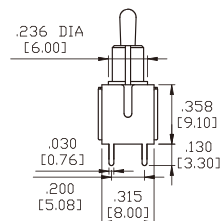
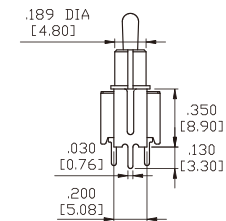
### VS2-VS3 Single Pole



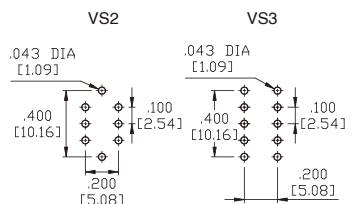
### P.C.MOUNTING



### VS2-VS3 Double Pole

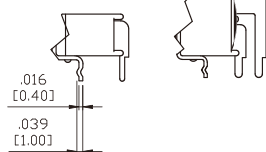


### P.C.MOUNTING

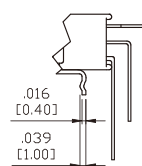


## Snap-In Termination Options

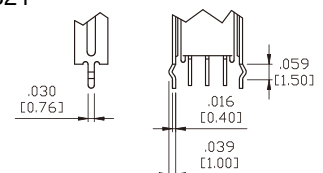
### M61



### M71



### VS21

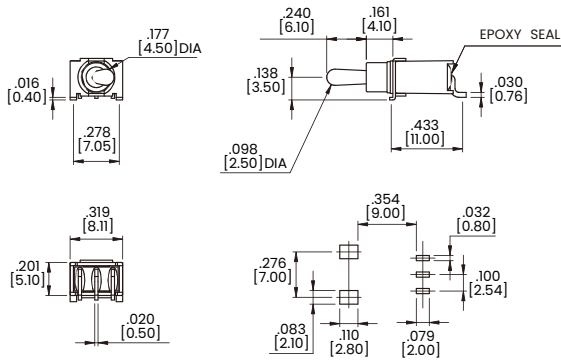


\* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

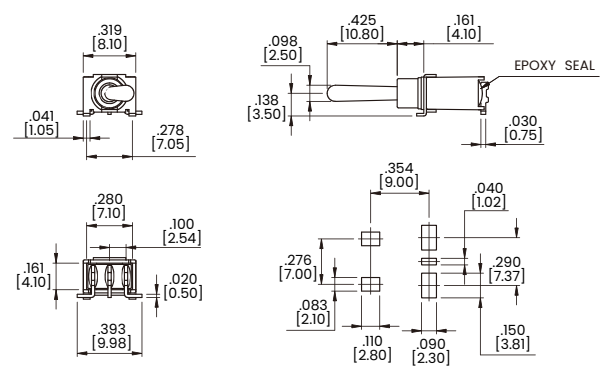
# Dimensional Specs

inches [millimeters]

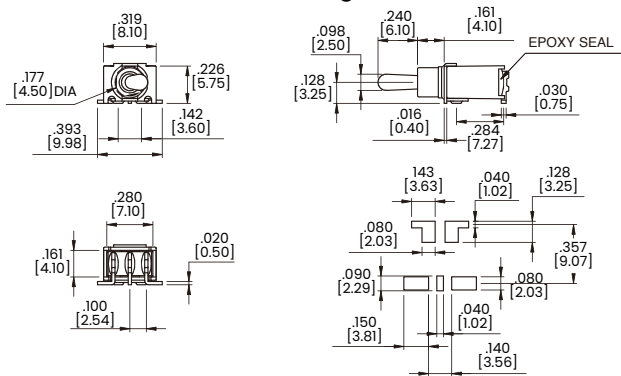
## K6 Single Pole



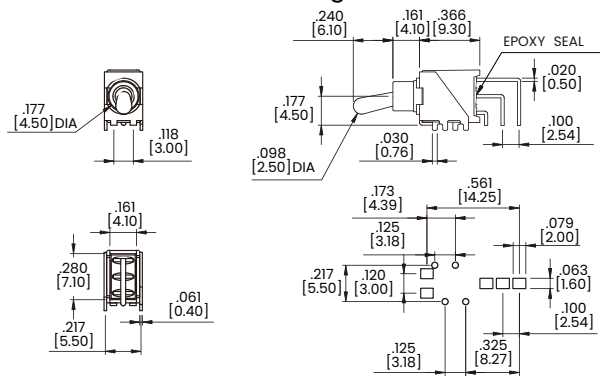
## L6 Single Pole



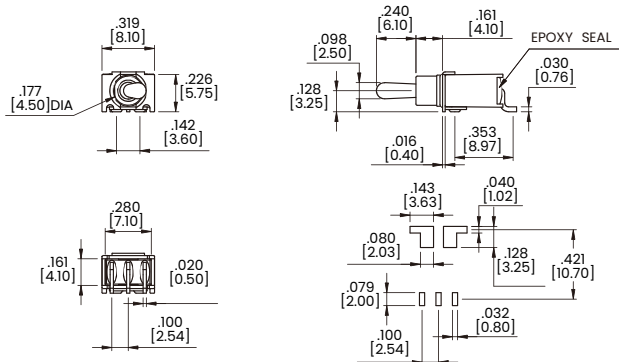
## M6 Single Pole



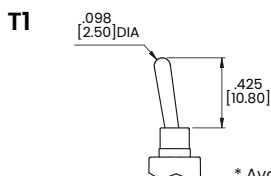
## M7 Single Pole



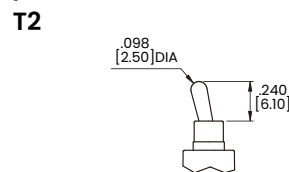
## S6 Single Pole



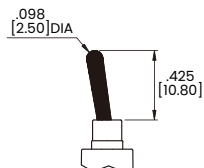
## Actuator Options



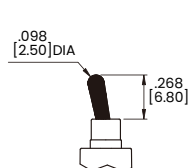
\* Available with L6, S6, K6, M7 terminals only.



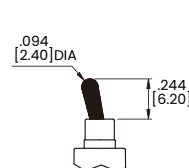
## P1 Plastic Toggle



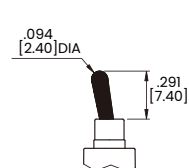
## P2 Plastic Toggle



## P3 Plastic Toggle



## P4 Plastic Toggle





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