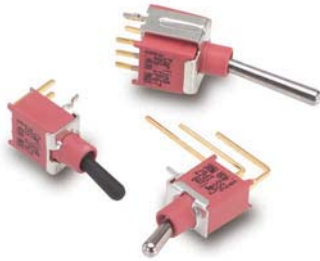




**2S1-Series**  
Sub-Miniature Toggle  
Switch



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



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

### Specifications

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

### Materials

Case . . . . .	all UL 94 V-0 <b>2S1-Series:</b> Diallyl 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
Toggle. . . . .	<b>2S1-Series:</b> Brass, chrome plated. <b>2SS &amp; 2SM-Series:</b> Brass, chrome plated or nylon, internal o-ring sealed
Bushing . . . . .	<b>2S1-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

### 2S1-Series Ordering Scheme

<b>2S1</b>	-	<b>MSP</b>		<b>1</b>	-	<b>T1</b>	-	<b>B4</b>	-	<b>M6</b>	<b>Q</b>	<b>E</b>
1		2		3		4		5		6	7	8
Series		Poles		Circuit		Actuator Style		Bushing		Termination	Contact	Seal

#### 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

	Switching Position:		
	2-3, 5-6	OPEN	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

<b>T1</b> Round toggle .358 length	<b>T3</b> Round toggle .299 length
<b>T2</b> Round toggle .220 length	<b>T4</b> Round toggle .433 length

#### 5 BUSHING<sup>1</sup>

<b>B1</b>	Threaded Standard, keyway
<b>B2</b>	Non-Threaded Standard, keyway
<b>B3</b>	Threaded Short, keyway
<b>B4</b>	Non-Threaded Short, keyway
<b>B5</b>	High Torque, 7.5mm, flat
<b>B6</b>	High Torque, 8.0mm, keyway
<b>B7</b>	Long threaded
<b>B8</b>	Metric

Note:  
1 All Switches come with standard nut, washer and locking ring shipped bulk. B5 & B7 bushing styles use small locking ring.

#### 6 TERMINATION

<b>M1</b>	Solder Lug
<b>M2</b>	PCB
<b>M6</b>	PC Mount, 90° horizontal
<b>M7</b>	PC Mount, 90° vertical
<b>VS2</b>	PC Mount, U bracket, .620 mounting x .460 high
<b>VS3</b>	PC Mount, U bracket, .620 mounting x .630 high
<b>VS21</b>	Snap-In, U bracket

#### 7 CONTACT

	Material	Terminal Plating	Rating	Approvals
<b>G</b>	silver <sup>1</sup>	gold over silver <sup>3</sup>	3A@125VAC or 28VDC, 1.5A @ 250VAC	UL CSA
<b>K</b>	gold <sup>2</sup>	tin-lead <sup>4</sup>	0.4VA max. @20V max (AC/DC)	—
<b>P</b>	silver <sup>1</sup>	tin-lead <sup>4</sup>	3A@125VAC or 28VDC, 1.5A @ 250VAC	UL CSA
<b>Q</b>	silver <sup>1</sup>	silver <sup>1</sup>	3A@125VAC or 28VDC, 1.5A @ 250VAC	UL CSA
<b>R</b>	gold <sup>2</sup>	gold <sup>2</sup>	0.4VA max. @20V max (AC/DC)	—

#### NOTE:

- Tin-lead option available with PC type terminations only.  
1 Moveable contact & terminals: copper alloy, silver plate  
2 Moveable contact & terminals: copper alloy with gold plated over nickel plate  
3 Terminals: silver plate with outer layer in gold plating  
4 Outer terminals: copper alloy with tin-lead over nickel plate

#### 8 EPOXY SEAL

**E** epoxy seal

### 2SS-Series Ordering Scheme



#### 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

##### Switching Position:

	2-3, 5-6	OPEN	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

**T1** Round toggle .358 length  
**T2** Round toggle .220 length  
**T3** Round toggle .299 length  
**T4** Round toggle .433 length  
**P1** ESD resistant plastic toggle .421 length  
**P2** ESD resistant plastic toggle .272 length

#### 5 BUSHING

**B4** Unthreaded bushing

#### 6 TERMINATION

**M2** PCB  
**M6** PC Mount, 90° horizontal  
**M61** Snap-In PC Mount, 90° horizontal  
**M7** PC Mount, 90° vertical  
**M71** Snap-In PC Mount, 90° vertical  
**VS2** PC Mount, U bracket, .620 mounting x .460 high  
**VS21** Snap-In, U bracket

#### 7 CONTACT

	Material	Terminal Plating	Rating	
<b>G</b>	silver <sup>1</sup>	gold over silver <sup>3</sup>	3A @ 125VAC or 28VDC, 1.5A @ 250VAC	IP67
<b>K</b>	gold <sup>2</sup>	tin-lead plated <sup>4</sup>	0.4VA max. @ 20V max (AC/DC)	IP67
<b>P</b>	silver <sup>1</sup>	tin-lead plated <sup>4</sup>	3A @ 125VAC or 28VDC, 1.5A @ 250VAC	IP67
<b>R</b>	gold <sup>2</sup>	gold plated <sup>2</sup>	0.4VA max. @ 20V max (AC/DC)	IP67

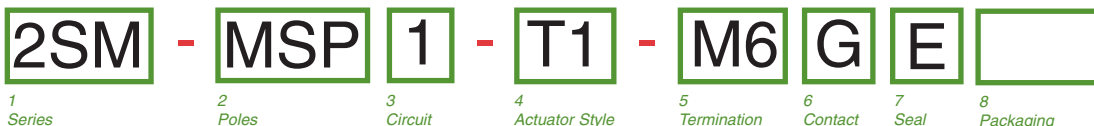
##### NOTE:

- Tin-lead option available with PC type terminations only.  
1 Moveable contact & terminals: copper alloy, silver plate  
2 Moveable contact & terminals: copper alloy with gold plate over nickel plate  
3 Terminals: silver plate with outer layer in gold plating  
4 Outer terminals: copper alloy with tin-lead over nickel plate

#### 8 EPOXY SEAL

**E** epoxy seal

### 2SM-Series Ordering Scheme



#### 1 SERIES

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

#### 2 POLES

**MSP** single pole - uses terminals 1, 2 & 3.

#### 3 CIRCUIT

( ) - momentary

##### Switching Position:

	2-3	OPEN	2-1
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

#### 4 ACTUATOR STYLE

**T1** Round toggle .358 length  
**T2** Round toggle .220 length  
**P1** ESD resistant plastic toggle .421 length  
**P2** ESD resistant plastic toggle .272 length

#### 5 TERMINATION

**M6** Surface Mount, 90° flat  
**M7** Surface Mount, 90° vertical  
**S6** Surface Mount, 90° horizontal

#### 6 CONTACT

	Material	Terminal Plating	Rating	
<b>G</b>	silver <sup>1</sup>	gold over silver <sup>3</sup>	3A @ 125VAC or 28VDC, 1.5A @ 250VAC	IP67
<b>K</b>	gold <sup>2</sup>	tin-lead plated <sup>4</sup>	0.4VA max. @ 20V max (AC/DC)	IP67
<b>P</b>	silver <sup>1</sup>	tin-lead plated <sup>4</sup>	3A @ 125VAC or 28VDC, 1.5A @ 250VAC	IP67
<b>R</b>	gold <sup>2</sup>	gold plated <sup>2</sup>	0.4VA max. @ 20V max (AC/DC)	IP67

##### NOTE:

- Tin-lead option available with PC type terminations only.  
1 Moveable contact & terminals: copper alloy, silver plate  
2 Moveable contact & terminals: copper alloy with gold plate over nickel plate  
3 Terminals: silver plate with outer layer in gold plating  
4 Outer terminals: copper alloy with tin-lead over nickel plate

#### 7 EPOXY SEAL

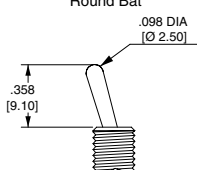
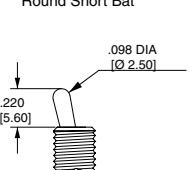
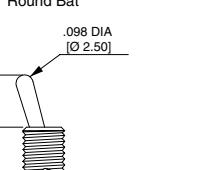
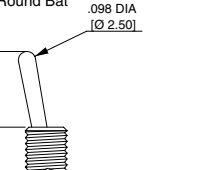
**E** epoxy seal

#### 8 PACKAGING

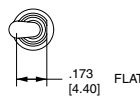
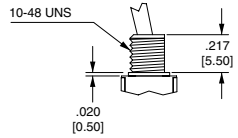
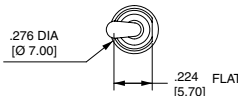
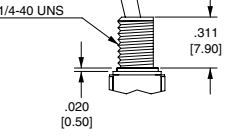
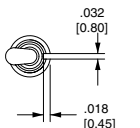
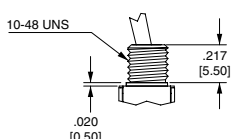
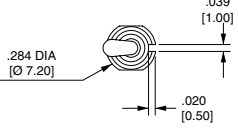
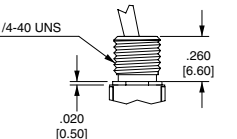
Switches are bulk packed, unless **T/R** is specified at the end of the part number.

**T/R** tape reel - 500 pieces per reel

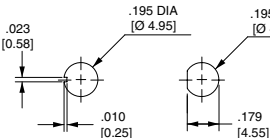
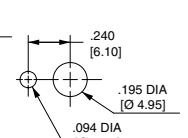
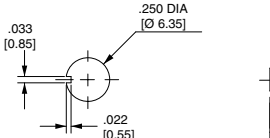
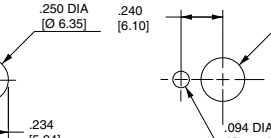
**2S-Series Dimensional Specifications: in. [mm]**
**2S1-Series**
**ACTUATOR**

<b>T1<sup>1</sup></b> Round Bat 	<b>T2<sup>1</sup></b> Round Short Bat 	<b>T3</b> Round Bat 	<b>T4</b> Long Round Bat 
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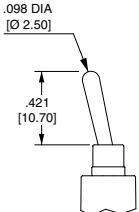
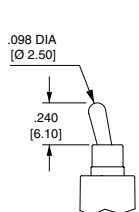
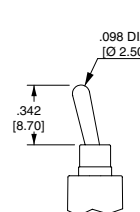
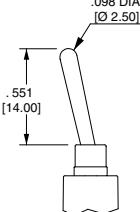
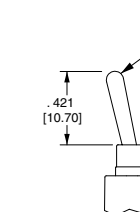
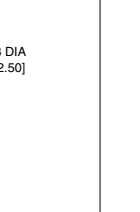
**BUSHING**

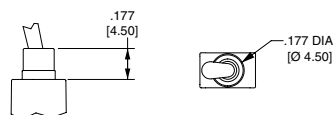
<b>B1<sup>1</sup></b> Threaded, Flat <b>B2</b> Non-Threaded, Flat 		<b>B5</b> Threaded, Flat <b>B6</b> Non-Threaded, Flat 	
<b>B3</b> Threaded Keyway <b>B4</b> Non-Threaded Keyway 		<b>B7</b> Threaded Keyway <b>B8</b> Non-Threaded Keyway 	

**PANEL MOUNTING**

<b>10-48 BUSHING (B1,B2,B3,B4 BUSHINGS)</b> 		<b>1/4 IN. BUSHING (B5,B6,B7,B8 BUSHINGS)</b> 	
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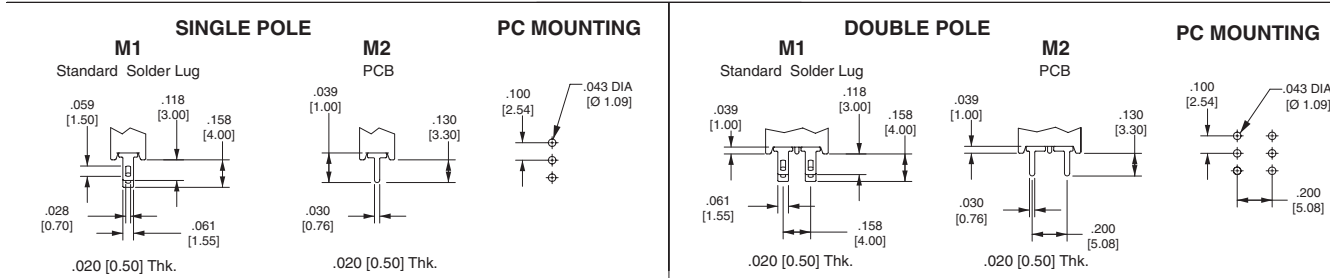
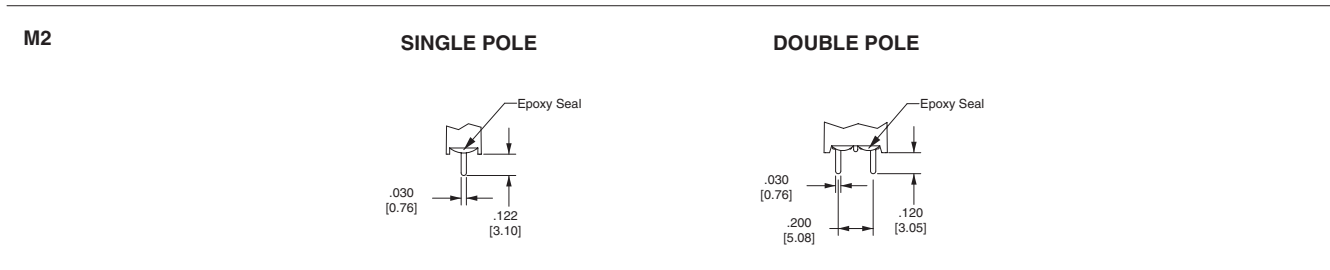
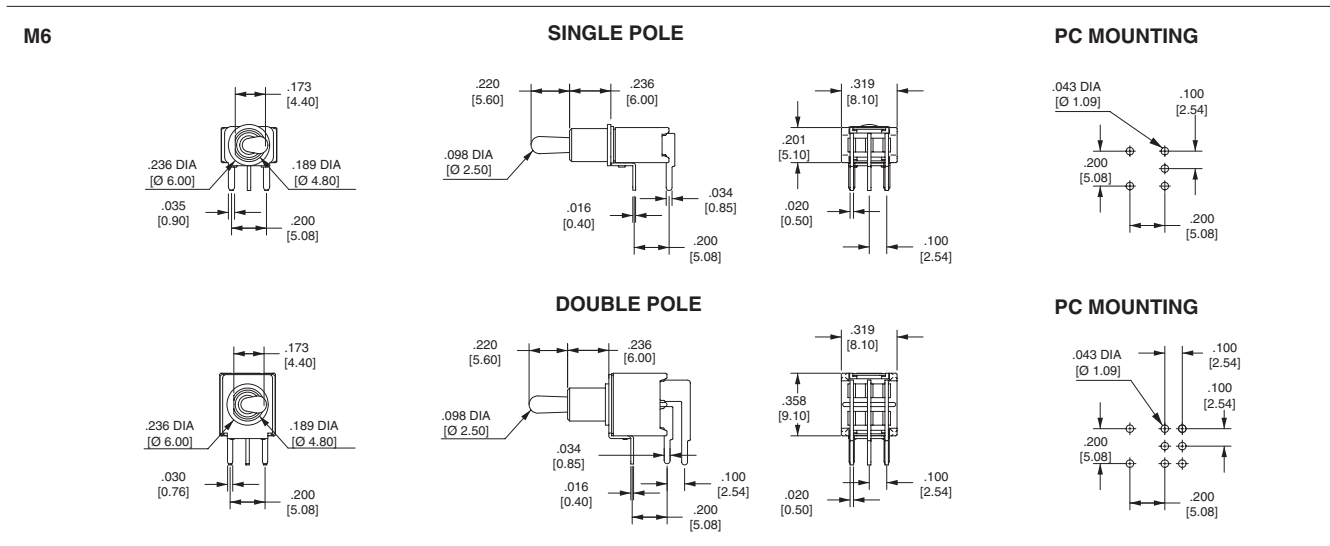
**2SS-Series**
**ACTUATOR**

<b>T1</b> 	<b>T2</b> 	<b>T3</b> 	<b>T4</b> 	<b>P1 ESD Resistant Plastic Toggle</b> 	<b>P2 ESD Resistant Plastic Toggle</b> 
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**BUSHING**
**B4**


NOTE:

1 Subtract 2.55mm from toggle length for B1 bushing.

**2S-Series Dimensional Specifications: in. [mm]**
**TERMINATION**
**2S1-Series**

**2SS-Series**

**2S-Series**


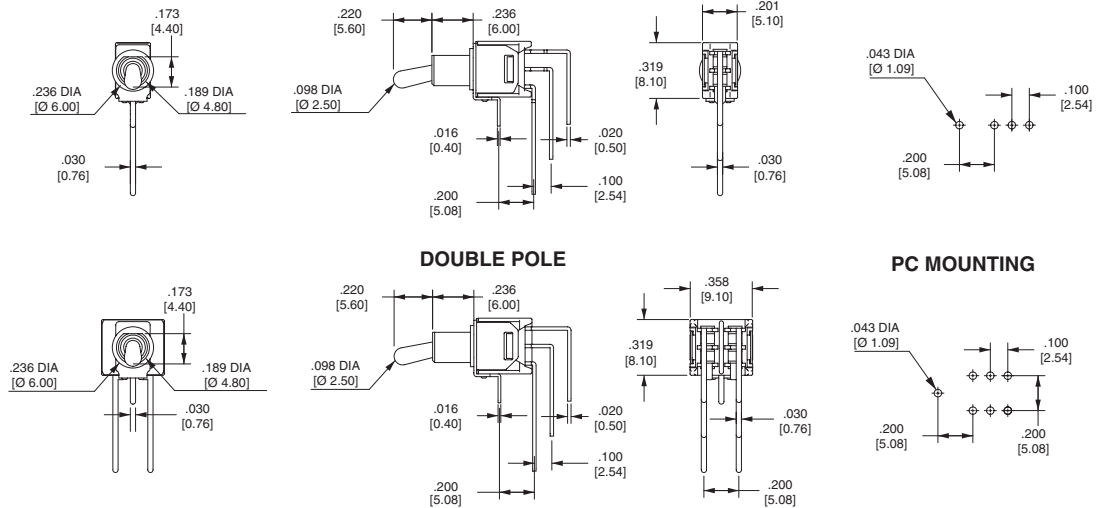
## 2S-Series Dimensional Specifications: in. [mm]

### TERMINATION

#### M7

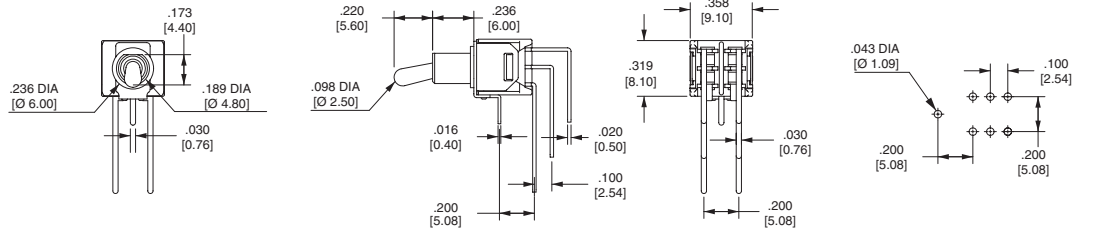
#### SINGLE POLE

#### PC MOUNTING



#### DOUBLE POLE

#### PC MOUNTING



#### VS2-VS3

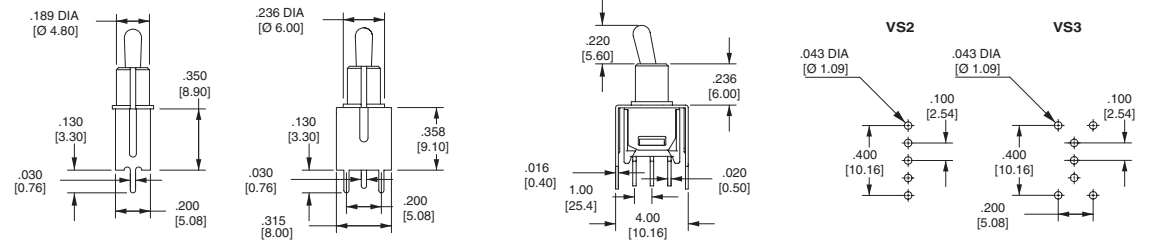
U Bracket Snap-in

#### VS2

#### VS3

#### SINGLE POLE

#### PC MOUNTING

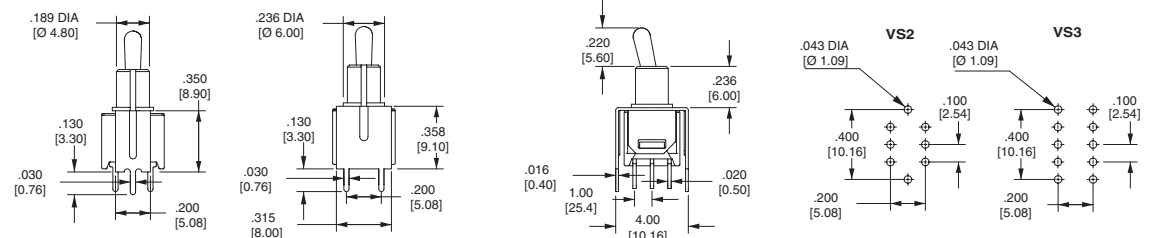


#### VS2

#### VS3

#### DOUBLE POLE

#### PC MOUNTING

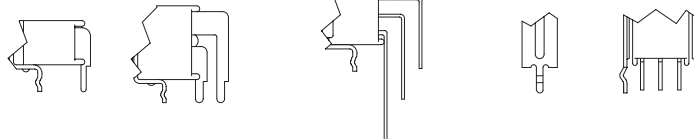


### SNAP-IN TERMINATION

#### M61

#### M71

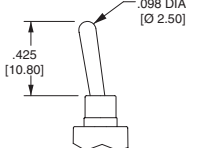
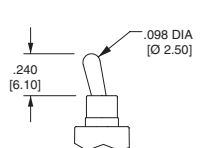
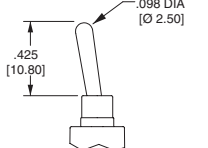
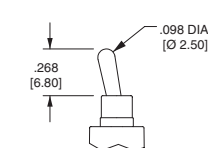
#### VS21



M61,M71,VS21 have the same P.C. mounting but with snap-in bracket.

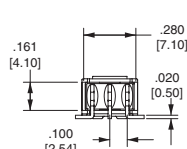
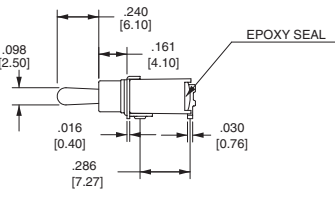
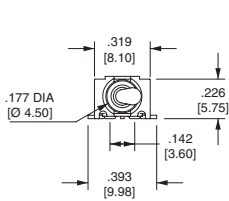
### 2SM-Series Dimensional Specifications: in. [mm]

#### ACTUATOR

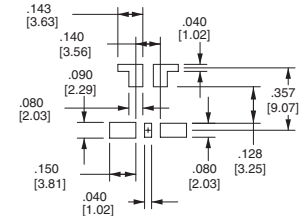
<b>T1</b> Round Bat   .098 DIA [Ø 2.50] .425 [10.80] For S6,M7 Only	<b>T2</b> Round Bat   .098 DIA [Ø 2.50] .240 [6.10]	<b>P1</b> ESD Resistant Plastic Toggle   .098 DIA [Ø 2.50] .425 [10.80]	<b>P2</b> ESD Resistant Plastic Toggle   .098 DIA [Ø 2.50] .268 [6.80]
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#### TERMINATION

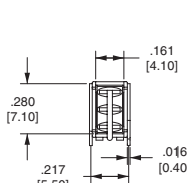
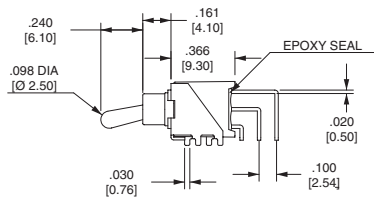
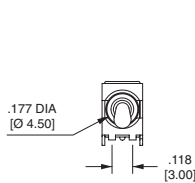
##### M6 90° Horizontal



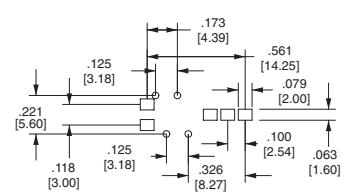
##### PC MOUNTING



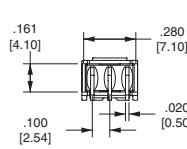
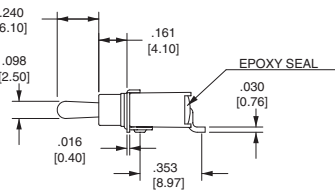
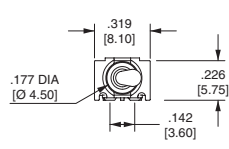
##### M7 90° Vertical



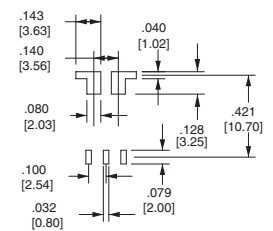
##### PC MOUNTING



##### S6 90° Horizontal



##### PC MOUNTING



**2SM-Series Dimensional Specifications: in. [mm]**
**REEL TAPING**
