

# 1SS/1S1/1SM

## 1S-Series

### SUB-MINIATURE ROCKERS

The 1S family of sub-miniature rocker switches is composed of three switch series; the **1S1-Series** sub-miniature rocker switch, the **1SS-Series** sealed sub-miniature rocker switch, and the **1SM-Series** surface mount sealed sub-miniature rocker switch. All of these series offer a variety of ratings, circuits, contact materials, terminal platings, and actuator colors.



1SS-Series



1S1-Series



1SM-Series

#### Product Highlights:

- ♦ IP67 Sealing
- ♦ 5 Circuit Configurations
- ♦ 3 Rocker Styles to choose from
- ♦ Dry-Circuit thru 3A 125VAC Rating
- ♦ Snap-in, Solder Lug or PC Terminations

#### Typical Applications:

- ♦ Instrumentation
- ♦ Test Equipment
- ♦ Telecommunications
- ♦ Networking
- ♦ Handheld Appliances

#### Resources:

Download 3D CAD Files

[IGS >](#) [STP >](#)



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**1SS-Series**  
**Sealed**  
Sub-Miniature  
Rocker Switch



**1S1-Series**  
Sub-Miniature  
Rocker Switch



**1SM-Series**  
**Sealed Surface Mount**  
Sub-Miniature  
Rocker Switch

## Electrical

|                       |                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Contact Rating        | refer to ordering scheme                                                                                                         |
| Electrical Life       | <b>1S1-Series:</b> 30,000 make & break cycles @ full load<br><b>1SS &amp; 1SM-Series:</b> 50,000 make & break cycles @ full load |
| Contact Resistance    | 20 mΩ max. initial @ 2-4 VDC<br>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    | 1SS & 1SM-Series: IP67  |
| Solder Heat Resistance | MIL-STD-202, Method 210 |
| Actuator Travel        | 25°                     |

## Material

|                |                                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case           | all UL94 V-0<br><b>1S1-Series:</b> Diallyl phthalate (DAP)<br><b>1SS-Series:</b> Glass filled nylon 6/6, flame retardant, heat stabilized<br><b>1SM-Series:</b> Glass filled nylon 4/6, flame retardant, heat stabilized    |
| Rocker         | <b>1S1-Series:</b> Nylon (UL 94V-0)<br><b>1SS &amp; 1SM-Series:</b> Nylon, black standard, internal o-ring sealed                                                                                                           |
| Bushing        | <b>1S1-Series:</b> Brass, nickel plated<br><b>1SS-Series:</b> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)<br><b>1SM-Series:</b> Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0) |
| Housing        | <b>1S1-Series:</b> Stainless Steel                                                                                                                                                                                          |
| Switch Support | <b>1S1 &amp; 1SM-Series:</b> Brass, tin plated                                                                                                                                                                              |
| Terminal Seal  | Epoxy                                                                                                                                                                                                                       |

**1SS** - **WMSP** **1** - **R2** / **2** **M2** **G** **E**

1 Series      2 Poles      3 Circuit      4 Actuator Style      5 Actuator Color      6 Termination      7 Contacts      8 Seal

### 1 SERIES

**1SS** Sealed Sub-Miniature Rocker Switch

### 2 POLES

**WMSP** Single pole - uses terminals 1, 2 & 3  
**WMDP** Double pole - uses terminals 1, 2, 3, 4, 5 & 6

### 3 CIRCUIT

|                  |          |                     |
|------------------|----------|---------------------|
| ( ) - momentary  |          |                     |
| <b>Position:</b> | <b>1</b> | <b>2</b>            |
|                  | 2-3, 5-6 | Connected Terminals |
| <b>1</b>         | ON       | NONE                |
| <b>2</b>         | ON       | NONE                |
| <b>3</b>         | ON       | OFF                 |
| <b>4</b>         | (ON)     | OFF                 |
| <b>5</b>         | ON       | OFF                 |

### 4 ACTUATOR STYLE

**R1** Small Rocker  
**R2** Narrow Black Rocker

### 5 ACTUATOR COLOR

**1** White  
**2** Black  
**3** Red  
Other colors available, consult factory.

### 6 TERMINATION

|                                    |                                               |
|------------------------------------|-----------------------------------------------|
| <b>M1</b> Solder Lug               | <b>M61</b> Snap-In, U bracket, 90° horizontal |
| <b>M2</b> PCB                      |                                               |
| <b>M6</b> PC Mount, 90° horizontal | <b>M71</b> Snap-In, U bracket, 90° horizontal |
| <b>M7</b> PC Mount, 90° vertical   | <b>VS21</b> Snap-In, U bracket                |
| <b>VS2</b> PC Mount, U bracket     |                                               |

See page 6-7 for dimensional specifications.

### 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 2.5              | tin <sup>4</sup>    | 0.4VA max 20V max (AC/DC)       | IP67      |
| <b>P</b> silver <sup>1,6</sup> | tin <sup>4</sup>    | 3A 125VAC or 28VDC, 1.5A 250VAC | IP67      |
| <b>R</b> gold <sup>2</sup>     | gold <sup>2,3</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.
- <sup>1</sup> Movable contact and terminal platings: silver over copper alloy
- <sup>2</sup> Movable contact platings: gold over nickel over copper alloy
- <sup>3</sup> Terminal platings: gold over nickel over copper alloy
- <sup>4</sup> Terminal platings: tin over copper alloy
- <sup>5</sup> Terminal contact platings: gold over nickel alloy
- <sup>6</sup> Terminal contact platings: silver over nickel alloy

# 1S1 - MSP 1 - R2 / 2 M6 Q E

1 Series      2 Poles      3 Circuit      4 Actuator Style      5 Actuator Color      6 Termination      7 Contacts      8 Seal

**1 SERIES****1S1** Sub-Miniature Rocker 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**

**R1** Small Rocker  
**R2** Narrow Black Rocker  
**R3** Medium Rocker

**5 ACTUATOR COLOR**

1 White  
 2 Black  
 3 Red

Other colors available, consult factory.

**6 TERMINATION**

**M1** Solder Lug      **M61** Snap-In, U bracket, 90° horizontal  
**M2** PCB      **M71** Snap-In, U bracket, 90° horizontal  
**M6** PC Mount, 90° horizontal      **M7** PC Mount, 90° vertical  
**M7** PC Mount, 90° vertical      **VS21** Snap-In, U bracket  
**VS2** PC Mount, U bracket  
**VS3** PC Mount, U bracket

See page 8-9 for dimensional specifications.

**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 | UL, CE    |
| <b>K</b> | gold <sup>2</sup>   | tin <sup>3</sup>    | 0.4VA max 20V max (AC/DC)       | N/A       |
| <b>P</b> | silver <sup>1</sup> | tin <sup>3</sup>    | 3A 125VAC or 28VDC, 1.5A 250VAC | UL, CE    |
| <b>Q</b> | silver <sup>1</sup> | silver <sup>1</sup> | 3A 125VAC or 28VDC, 1.5A 250VAC | UL, CE    |
| <b>R</b> | gold <sup>2</sup>   | gold <sup>2</sup>   | 0.4VA max 20V max (AC/DC)       | N/A       |

**8 EPOXY SEAL****E** Epoxy Seal      0 without Epoxy Seal

## Notes:

Tin option available with M1 termination.

- 1 Movable contact and terminal platings: silver over copper alloy  
 2 Movable contact and terminal platings: gold over nickel over copper alloy  
 3 Terminal platings: tin over nickel over copper alloy

# 1SM - WMSP 1 - R2 - M2 G E

1 Series      2 Poles      3 Circuit      4 Actuator Style      5 Termination      6 Contacts      7 Seal      8 Packaging

**1 SERIES****1SM** Sealed Surface Mount Sub-Miniature Rocker Switch**2 POLES****WMSP** Single pole - uses terminals 1, 2 & 3**3 CIRCUIT**

() - momentary

| Position: | 1    | 2                   | 3    |
|-----------|------|---------------------|------|
|           | 2-3  | Connected Terminals | 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****R2** Narrow Black Rocker**5 TERMINATION**

**M6** Surface Mount, 90° flat - horizontal / side  
**S6** Surface Mount, 90° horizontal / back  
**S7** Surface Mount, 90° vertical

See page 10 for dimensional specifications.

**6 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>2,5</sup>   | tin <sup>4</sup>    | 0.4VA max 20V max (AC/DC)       | IP67      |
| <b>P</b> | silver <sup>1,6</sup> | tin <sup>4</sup>    | 3A 125VAC or 28VDC, 1.5A 250VAC | IP67      |
| <b>Q</b> | silver <sup>1</sup>   | silver <sup>1</sup> | 3A 125VAC or 28VDC, 1.5A 250VAC | IP67      |
| <b>R</b> | gold <sup>2</sup>     | 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

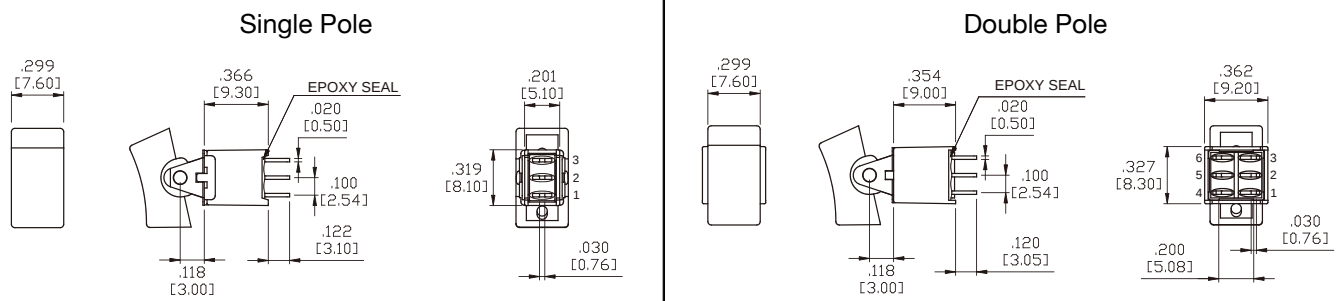
Switches are bulk packed, unless T/R is specified at the end of the part number.

## Notes:

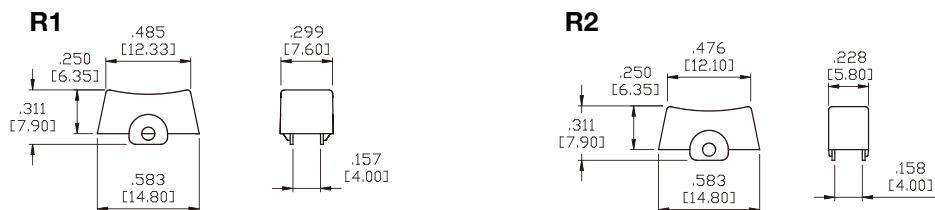
Tin option not available with M1 termination.

- 1 Movable contact and terminal platings: silver over copper alloy  
 2 Movable contact platings: gold over nickel over copper alloy  
 3 Terminal platings: gold over nickel over copper alloy  
 4 Terminal platings: tin over copper alloy  
 5 Terminal contact platings: gold over nickel alloy  
 6 Terminal contact platings: silver over nickel alloy

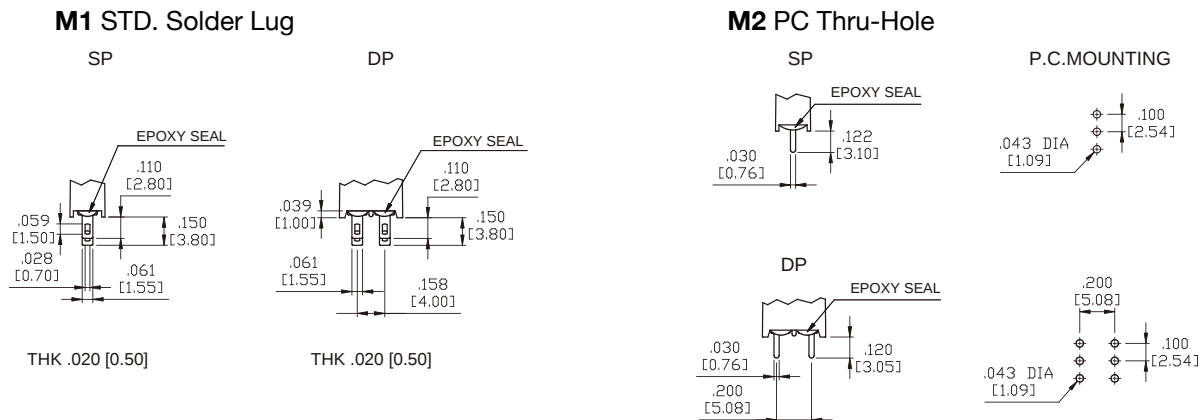
# 1SS-Series Dimensional Specifications: in. [mm]



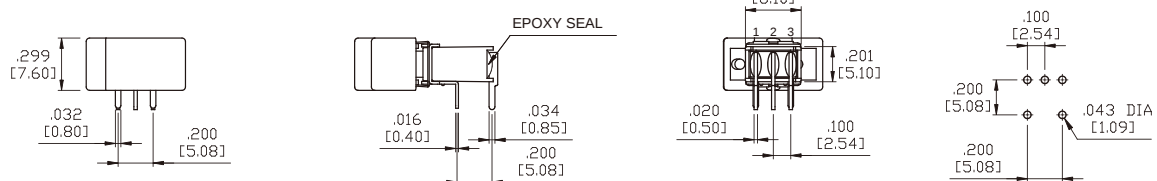
## Actuator Options



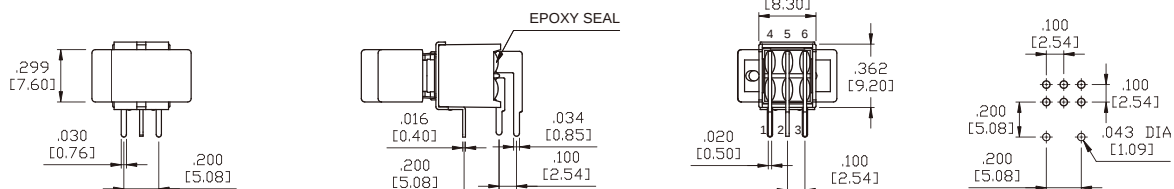
## Termination Options



## M6 Single Pole



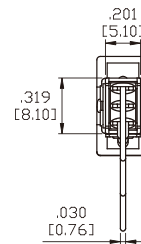
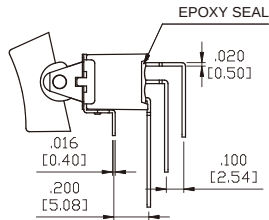
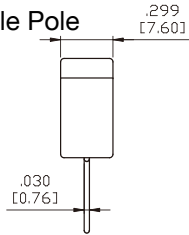
## M6 Double Pole



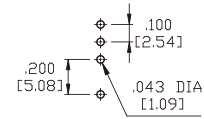
## 1SS-Series Dimensional Specifications: in. [mm]

### Termination Options

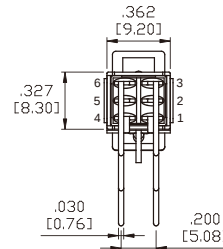
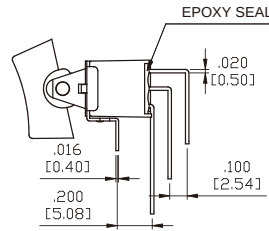
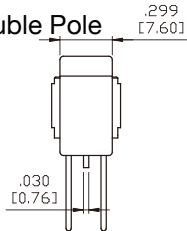
#### M7 Single Pole



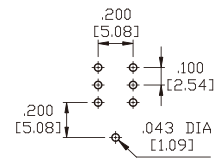
#### P.C.MOUNTING



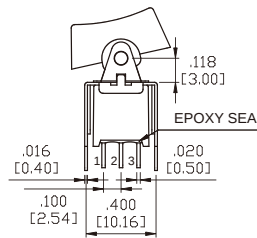
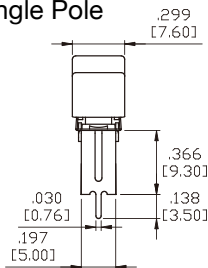
#### M7 Double Pole



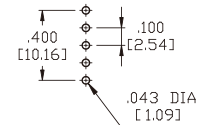
#### P.C.MOUNTING



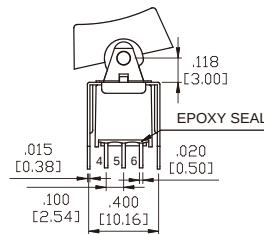
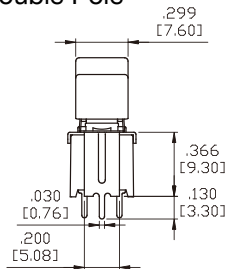
#### VS2 Single Pole



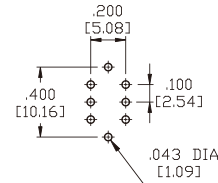
#### P.C.MOUNTING



#### VS2 Double Pole

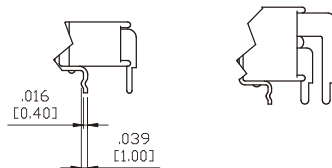


#### P.C.MOUNTING

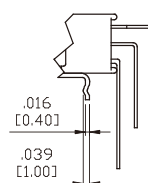


### Snap-In Termination Options

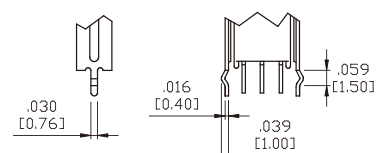
#### M61



#### M71

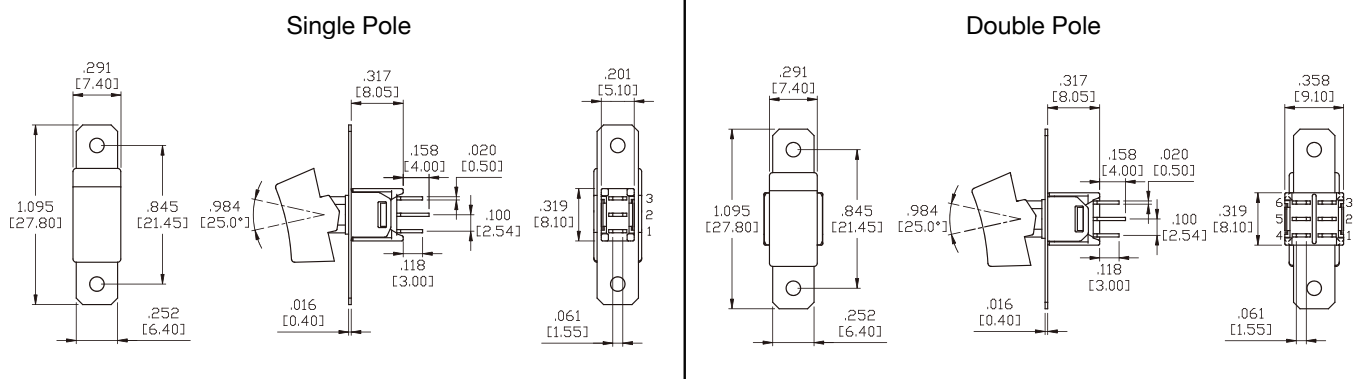


#### VS21

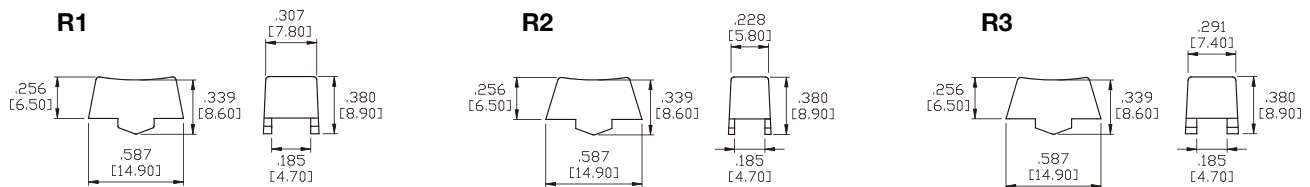


\* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

# 1S1-Series Dimensional Specifications: in. [mm]

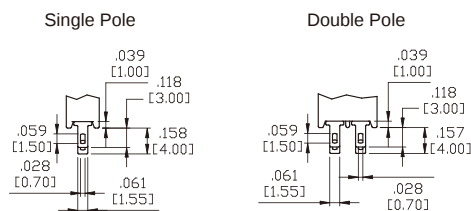


## Actuator Options

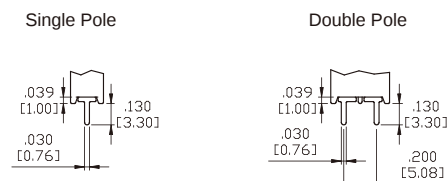


## Termination Options

### M1 STD. Solder Lug



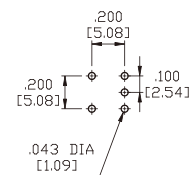
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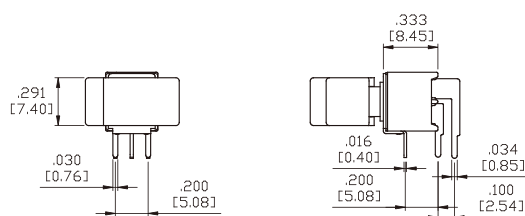
### M6 Single Pole



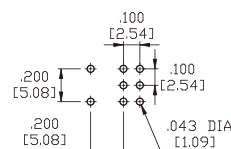
### P.C.MOUNTING



### M6 Double Pole



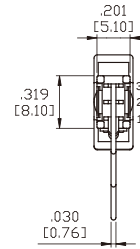
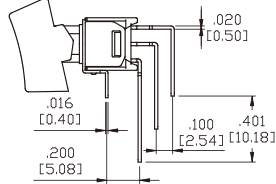
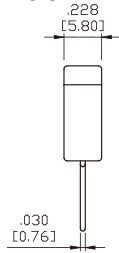
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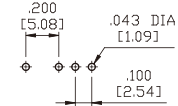
# 1S1-Series Dimensional Specifications: in. [mm]

## Termination Options

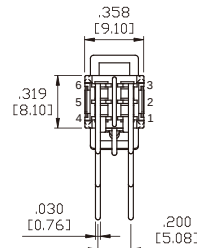
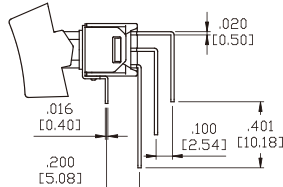
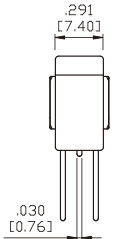
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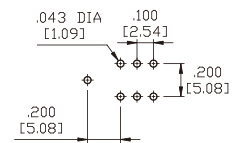
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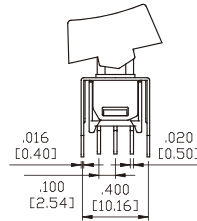
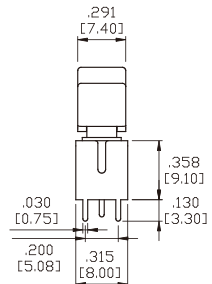
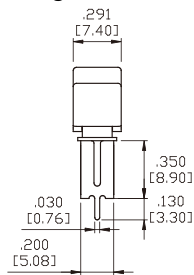
### M7 Double Pole



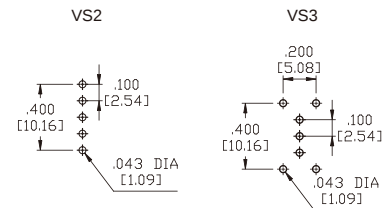
### P.C.MOUNTING



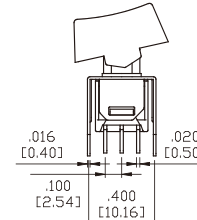
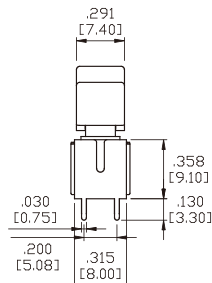
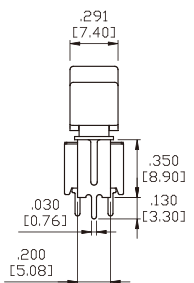
### VS2-VS3 Single Pole



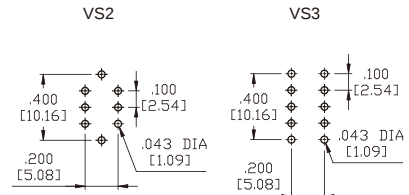
### P.C.MOUNTING



### VS2-VS3 Double Pole

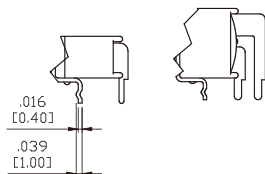


### P.C.MOUNTING

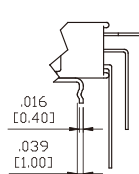


## Snap-In Termination Options

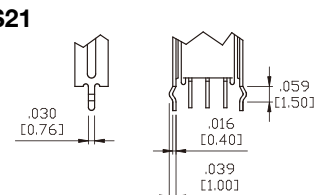
### M61



### M71

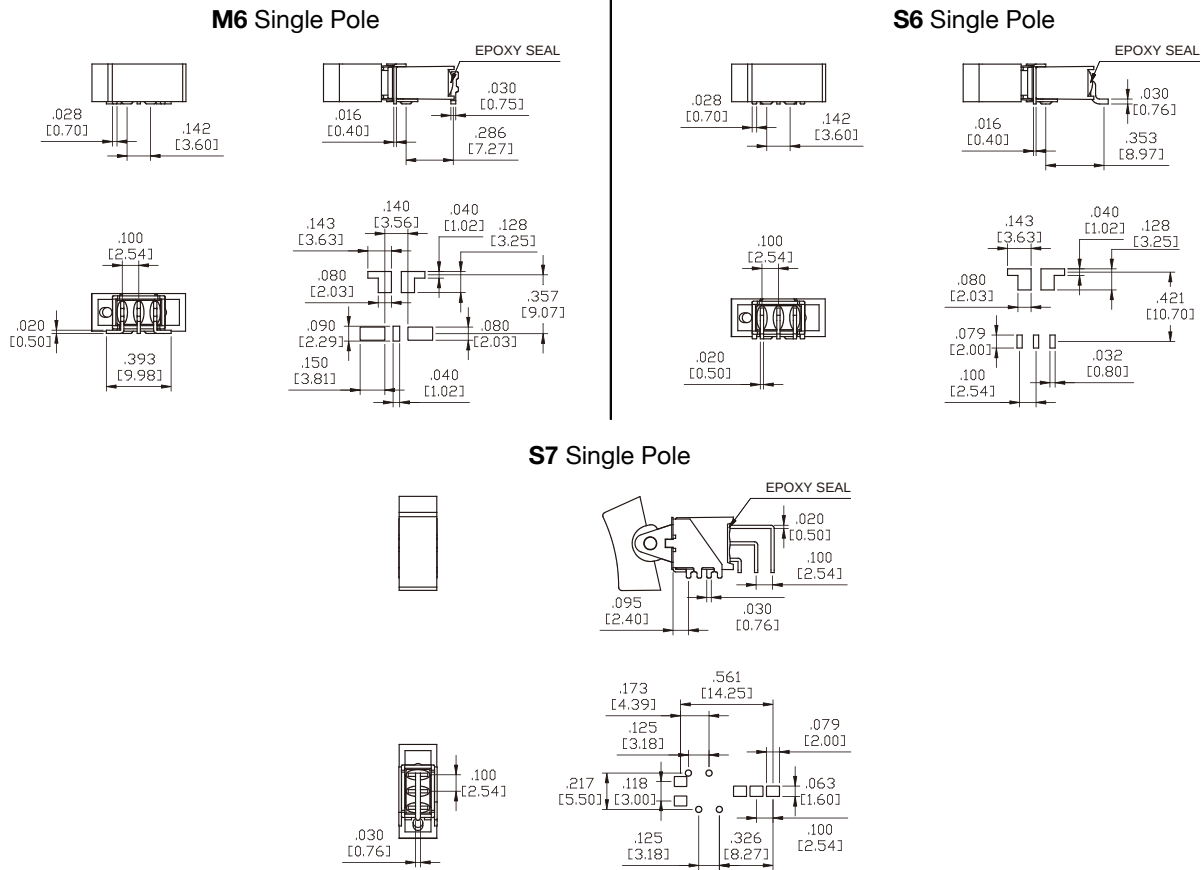


### VS21

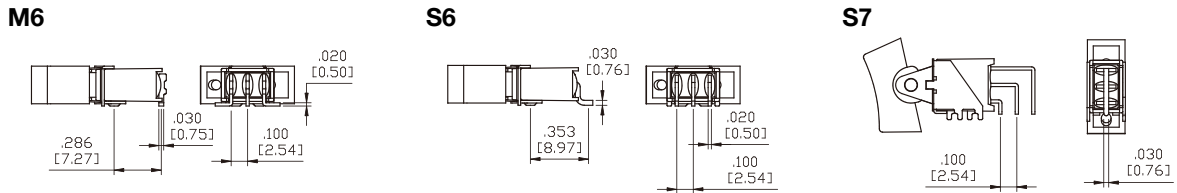


\* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

# 1SM-Series Dimensional Specifications: in. [mm]



## Termination Options



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