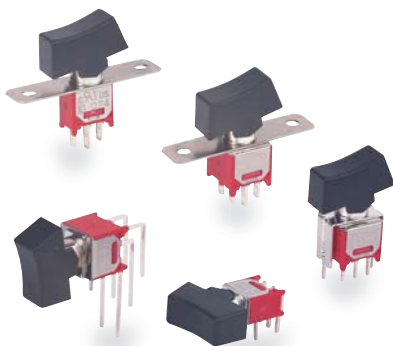




KSD-4M  
Rocker Switches

# KSD

## SWITCH CONNECTOR



### SPECIFICATIONS

- CONTACT RATING:** Dependent upon contact material, see page 68.
- MECHANICAL LIFE:** 30,000 make-and-break cycles.
- CONTACT RESISTANCE:** 20 mΩ max. (initial value) @ 2-4VDC  
100mA for both silver and gold plated contacts.
- INSULATION RESISTANCE:** 1,000 MΩ min./1000VDC
- DIELECTRIC STRENGTH:** 1,000 Vrms min. @ sea level. (initial value)
- OPERATING TEMPERATURE:** -40°C to 85°C.

### MATERIALS

- CASE:** Diallyl phthalate (DAP) (UL94v-0).
  - ACTUATOR:** Nylon, black std.
  - BUSHING:** Brass or zinc, nickel plated.
  - HOUSING:** Stainless Steel.
  - SWITCH SUPPORT:** SUS or brass, tin plated.
  - TERMINAL/CONTACT:** Copper or brass with silver or gold plated.
- (See page 68)

## HOW TO ORDER

MODEL NO.	ACTUATOR	ACTUATOR COLOR	ACTUATOR MARKING	TERMINAL TYPE	TERMINAL PLATING	SEAL	RoHS SOLDERING																			
<b>SP</b> 4MS1 ON-NONE-ON 4MS2 ON-NONE-(ON) 4MS3 ON-OFF-ON 4MS4 (ON)-OFF-(ON) 4MS5 ON-OFF-(ON) 4MS6 OFF-NONE-ON  <b>DP</b> 4MD1 ON-NONE-ON 4MD2 ON-NONE-(ON) 4MD3 ON-OFF-ON	<b>R1</b> (STD) Rocker, 7.62 wide, 14.73 length <b>R2</b> (STD) Rocker, 5.84 wide, 14.73 length <b>R3</b> 5.84 wide, 10.23 length		<table border="1"> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>5</td><td></td></tr> <tr><td>6</td><td></td></tr> <tr><td>7</td><td></td></tr> <tr><td>8</td><td></td></tr> <tr><td>9</td><td></td></tr> <tr><td>J</td><td></td></tr> </table>	1		2		5		6		7		8		9		J			<b>Q</b> Silver <b>R</b> Gold <b>C</b> Gold over silver	<b>E</b> EPOXY (std) <b>N</b> NO EPOXY	<b>S</b> RoHS & Lead Free			
1																										
2																										
5																										
6																										
7																										
8																										
9																										
J																										
			<table border="1"> <thead> <tr> <th>ITEM NO</th> <th>COLOR</th> </tr> </thead> <tbody> <tr><td>00</td><td>Without</td></tr> <tr><td>01</td><td>White</td></tr> <tr><td>02</td><td>Black (Std)</td></tr> <tr><td>03</td><td>Red</td></tr> <tr><td>04</td><td>Orange</td></tr> <tr><td>05</td><td>Yellow</td></tr> <tr><td>06</td><td>Green</td></tr> <tr><td>07</td><td>Blue</td></tr> <tr><td>09</td><td>Gray</td></tr> </tbody> </table>	ITEM NO	COLOR	00	Without	01	White	02	Black (Std)	03	Red	04	Orange	05	Yellow	06	Green	07	Blue	09	Gray		<b>M1</b> Solder Lug <b>M2</b> PC thru-hole <b>M5</b> wire wrap <b>M6</b> Right angle, PC thru-hole * <b>M6N</b> Right angle, snap-in, PC thru-hole * <b>M7</b> Vertical right angle, PC thru-hole * <b>M7N</b> Vertical right angle, snap-in, PC thru-hole *  <b>V-bracket</b> <b>VS2</b> 8.94 high <b>V2N</b> 8.94 high, snap-in <b>VS3</b> 8.94 high <b>V3N</b> 8.94 high, snap-in	
ITEM NO	COLOR																									
00	Without																									
01	White																									
02	Black (Std)																									
03	Red																									
04	Orange																									
05	Yellow																									
06	Green																									
07	Blue																									
09	Gray																									

\*\*

\* The terminal type of M6, M6N, M7, M7N are not suitable for 4MS6.  
 \*\* Except standard color, for other colors information please consult sales representativity.

EXAMPLE:  
 4MS1R1□M1QES (STD)

└─ Actuator color

4MS1R1□□M1QES

└─ Actuator marking

└─ Actuator color

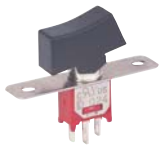


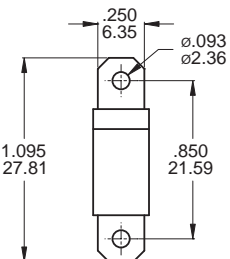
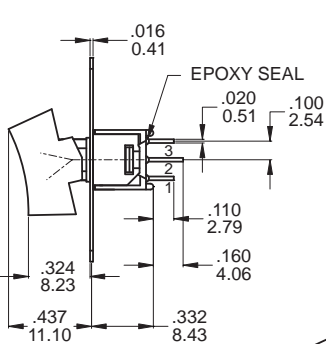
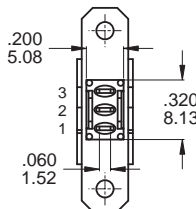
## SWITCH FUNCTION

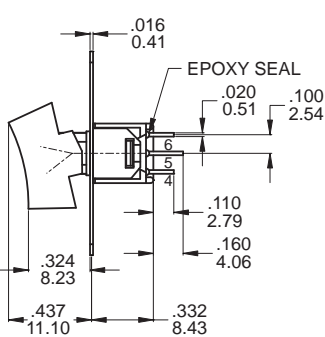
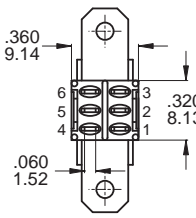
NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC		
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3
SP	Q2411	4MS1	ON	NONE	ON	2-3 	N/A	2-1 
	Q2412	4MS2	ON	NONE	(ON)		OPEN	
	Q2413	4MS3	ON	OFF	ON			
	Q2414	4MS4	(ON)	OFF	(ON)	OPEN	N/A	3-1
	Q2415	4MS5	ON	OFF	(ON)	OPEN	N/A	3-1
	Q2416	4MS6*	OFF	NONE	ON	OPEN	N/A	3-1
DP	Q2421	4MD1	ON	NONE	ON	2-3,5-6 	N/A	2-1,5-4 
	Q2422	4MD2	ON	NONE	(ON)		OPEN	
	Q2423	4MD3	ON	OFF	ON	OPEN	N/A	3-1

( )=MOMENTARY


## POLE OPTIONS

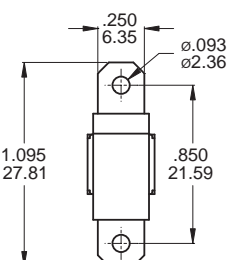
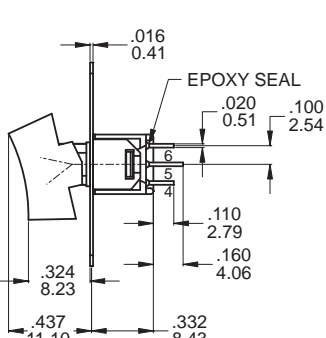
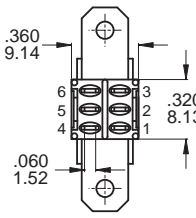


**SPDT** Model name. KSD-4MS1R102M1QES \* 4MS6 Models: Omit terminal 2



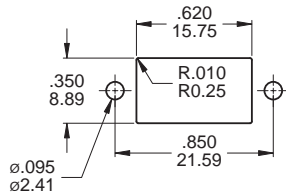
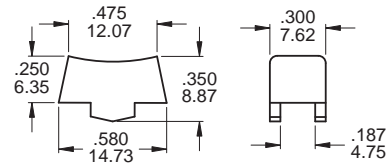




**DPDT** Model name. KSD-4MD1R102M1QES



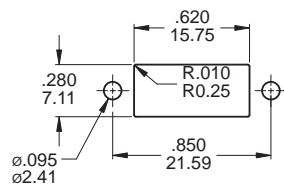
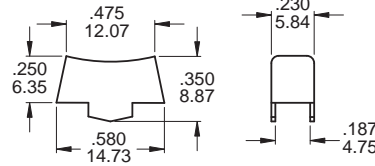
## ▼ TERMINAL OPTIONS

### R1



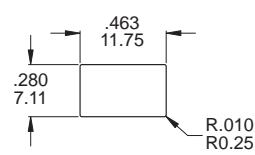
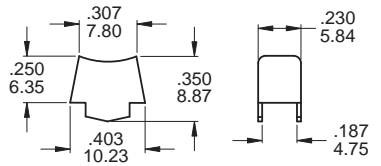
PANEL MOUNTING

### R2



PANEL MOUNTING

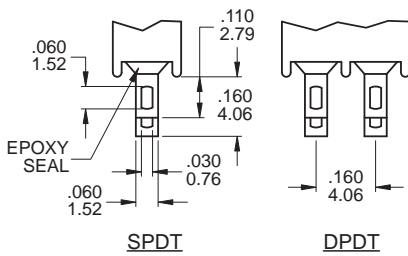
### R3



PANEL MOUNTING

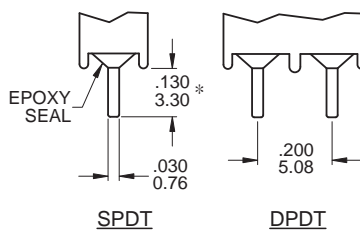
## ▼ TERMINAL OPTIONS

### M1 Solder lug



.020inch(0.51mm) THK.

### M2 PC Thru-hole



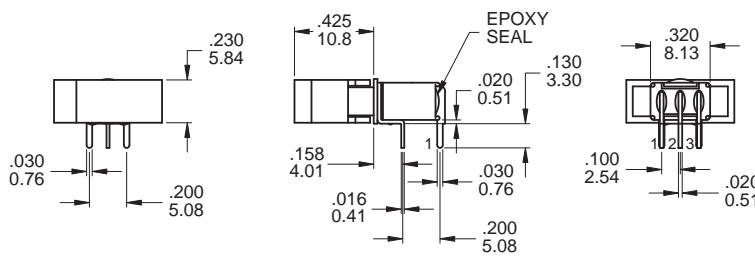
.020inch(0.51mm) THK.

\* The wire wrap terminal M51 is .600inch(15.24mm), only for SPDT

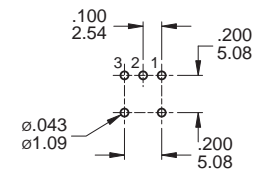
### OTHER TERMINAL OPTIONS

- M6** Right angle P.C. Mount
- M6N** Right angle P.C. Mount Snap-in bracket
- M7** Vertical right angle P.C. Mount
- M7N** Vertical right angle P.C. Mount Snap-in bracket
- VS2-VS3** Vertical bracket P.C. Mount
- V2N-V3N** Vertical bracket P.C. Mount Snap-in bracket

### M6 (M6N - Snap-in)



### PCB MOUNTING

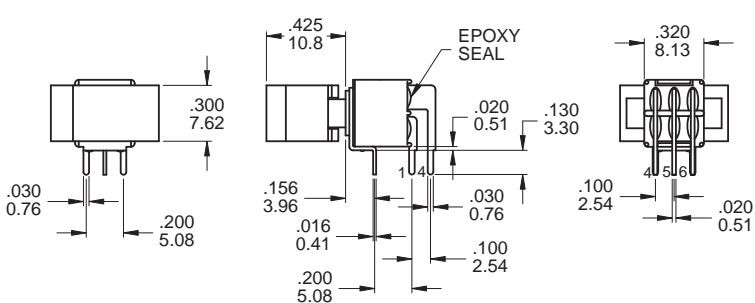


Note: Not available for 4MS6.

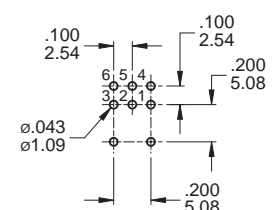
### SPDT

Model name. KSD-4MS1R202M6QES

### M6 (M6N - Snap-in)



### PCB MOUNTING



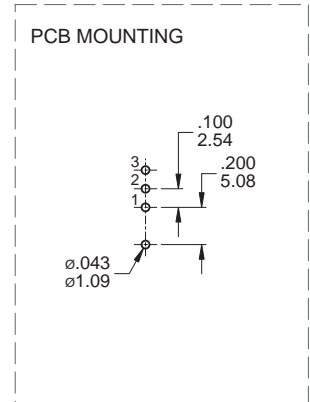
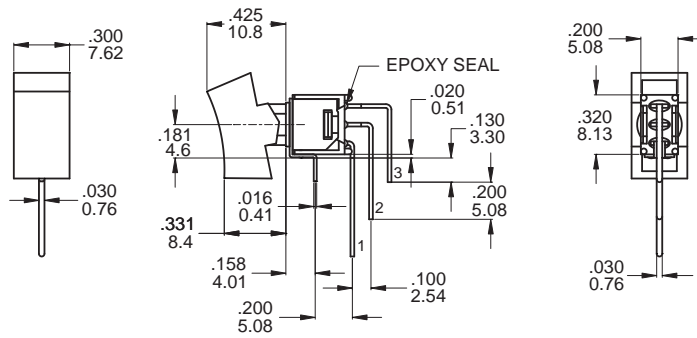
Note: Not available for 4MS6.

### DPDT

Model name. KSD-4MD1R102M6QES



**M7**  
(M7N - Snap-in)

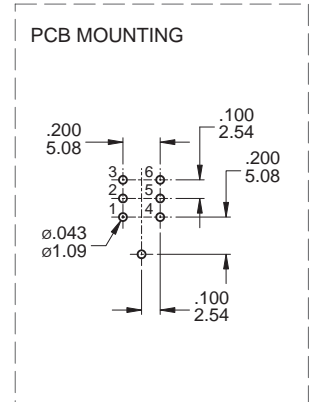
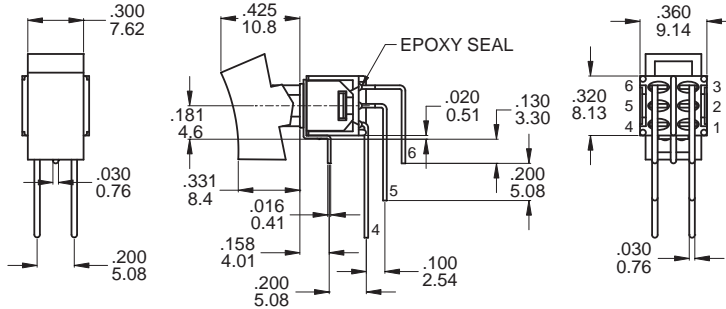


Note: Not available for 4MS6.

**SPDT**

Model name: KSD-4MS1R102M7QES

**M7**  
(M7N - Snap-in)

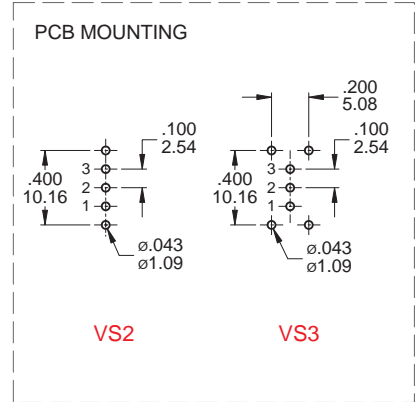
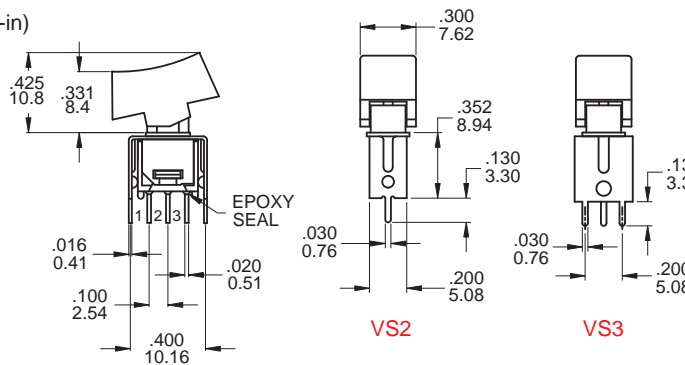


Note: Not available for 4MS6.

**DPDT**

Model name: KSD-4MD1R102M7QES

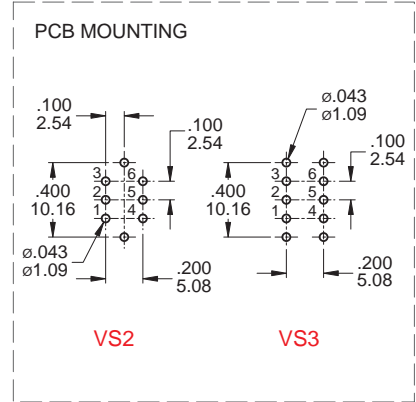
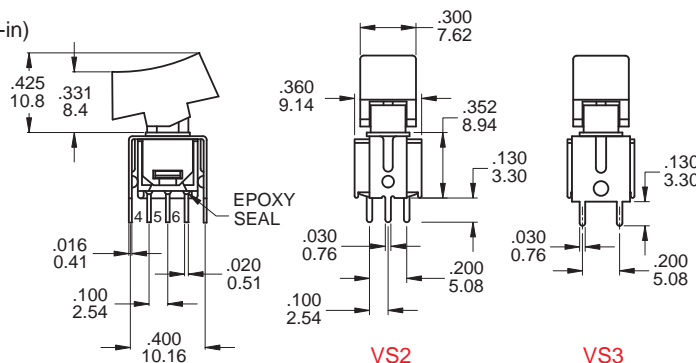
**VS2 - VS3**  
(V2N-V3N - Snap-in)



**SPDT**

Model name: KSD-4MS1R102VS2QES

**VS2 - VS3**  
(V2N-V3N - Snap-in)



**DPDT**

Model name: KSD-4MD1R102VS2QES

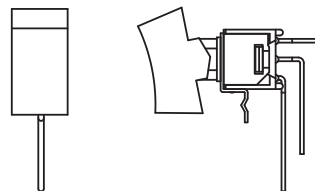


## ▼ SNAP-IN TERMINAL OPTIONS

**M6N**

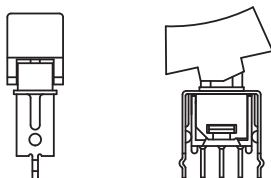


**M7N**

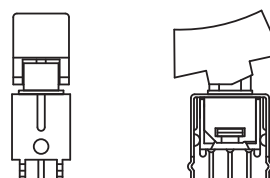


Note: The terminal type of M6N, M7N are not suitable for 4MS6.

**V2N**



**V3N**



## ▼ CONTACT & TERMINAL PLATING OPTIONS

	CONTACT PLATING	TERMINAL PLATING	RATINGS
<b>Q</b>	Silver	Silver	3 Amps with resistant load @ 120VAC or 28VDC 1 Amps with resistant load @ 250VAC
<b>C</b>	Gold over Silver	Gold over silver	
<b>R</b>	Gold	Gold	0.4 Volt - Amps ( VA ) max. @ 20V max. ( AC or DC )

## ▼ SOLDERING PROCESS

**MANUAL SOLDERING:** Use 30 watts soldering iron and controlled the temperature at 350°.

Duration of solder immersion: Max. 5 sec.

**WAVE SOLDERING:** Recommend soldering temperature: 260 ± 5°C

Duration of solder immersion: Max. 5 sec. (PCB thickness is 1.6mm)