



Carling Technologies®
/// NOW PART OF



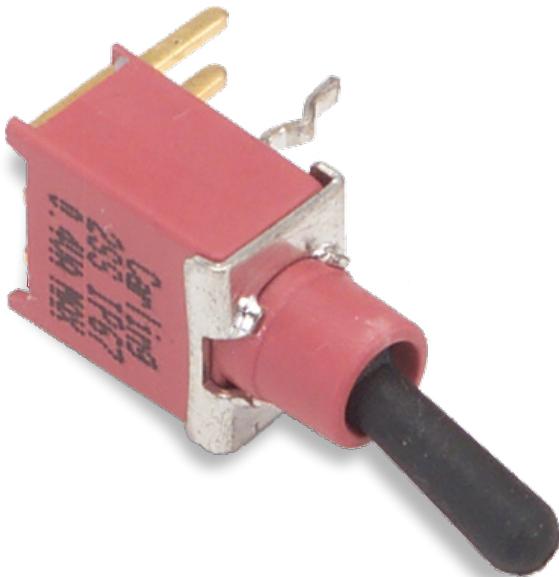
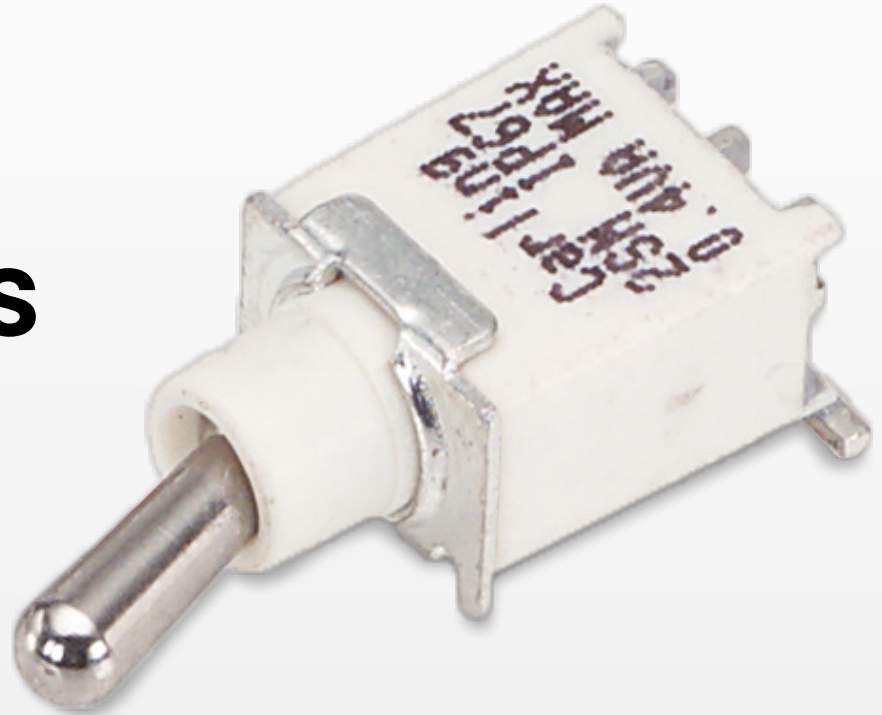
Littelfuse®

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

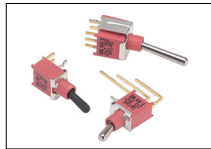
125, 250
VAC

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 2SI-Series: Dially phthalate (DAP) 2SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized 2SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
Rocker	2SI-Series: Brass, chrome plated. 2SS & 2SM-Series: Brass, chrome plated or nylon, internal o-ring seal
Bushing	2SI-Series: Brass, nickel plated 2SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) 2SM-Series: 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

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

4. ACTUATOR STYLE / LENGTH

T1 Round toggle .421" [10.70 mm]	P2 ESD resistant toggle .268" [6.80 mm]
T2 Round toggle .240" [6.10 mm]	
T3 Round toggle .342" [8.70 mm]	P3 ESD resistant toggle .244" [6.20 mm]
T4 Round toggle .551" [14.00 mm]	
P1 ESD resistant toggle .425" [10.80 mm]	P4 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
G	silver ¹	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
K	gold ²	tin ³	0.4VA max 20V max (AC/DC)	IP67
P	silver ¹	tin ³	3A 125VAC o28VDC, 1.5A 250VAC	IP67
R	gold ²	gold ²	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 (ON)
3 ON OFF OFF ON
4 (ON) OFF OFF (ON)
5 ON OFF 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
G silver ²	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
K ⁸ gold ^{3,6}	tin ⁵	0.4VA max 20V max (AC/DC)	N/A
P ⁸ silver ^{2,7}	1.5A 250VAC silver ²	3A 125VAC or 28VDC	UL, CE
Q silver ²	1.5A 250VAC gold ⁴	0.4VA max 20V max (AC/DC)	N/A
R gold ³			

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 (ON)
3 ON OFF OFF ON
4 (ON) OFF OFF (ON)
5 ON OFF 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
G silver ²	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
K gold ³	tin ⁴	0.4VA max 20V max (AC/DC)	IP67
P silver ²	tin ⁴	3A 125VAC or 28VDC, 250VAC	IP67
Q silver ²	1.5A silver ²	3A 125VAC or 28VDC, 250VAC	IP67
R gold ³	1.5A gold ³	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

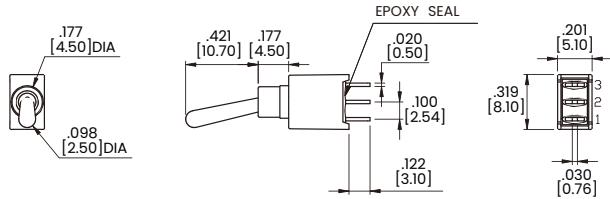
[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

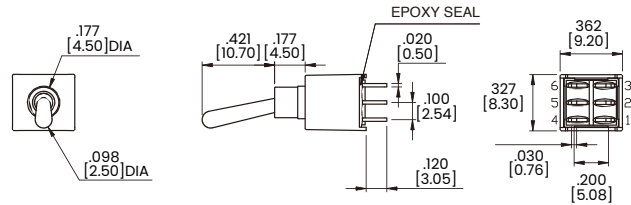
Dimensional Specs

inches [millimeters]

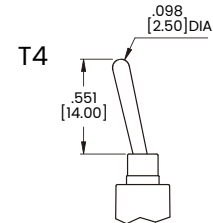
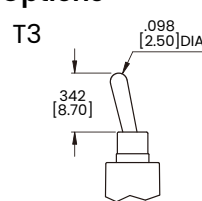
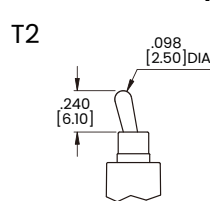
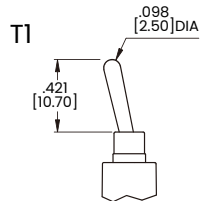
Single Pole



Double Pole

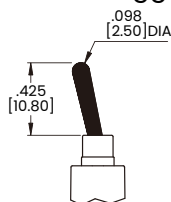


Actuator Options

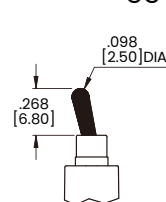


* B4 bushing shown. Subtract 2.55mm from toggle length for B1 bushing.

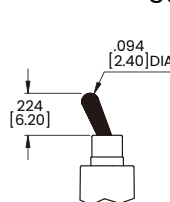
P1 Plastic Toggle



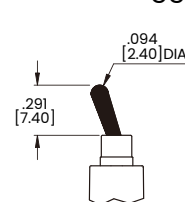
P2 Plastic Toggle



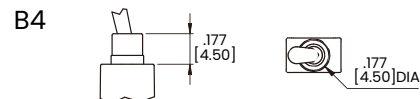
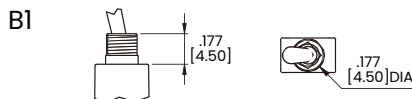
P3 Plastic Toggle



P4 Plastic Toggle



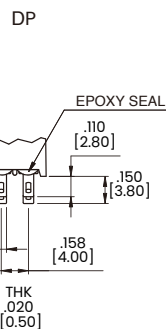
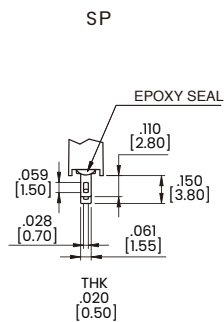
Bushing Options



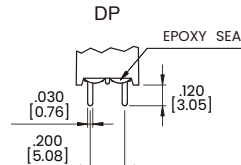
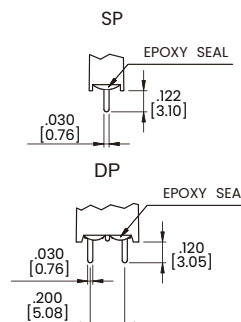
* Subtract 2.55mm from toggle length for B1 bushing.

Termination Options

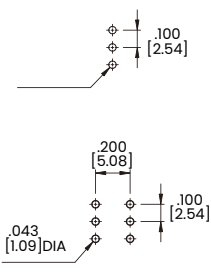
M1 STD. Solder Lug



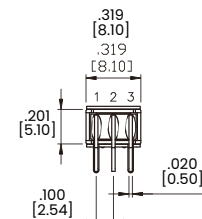
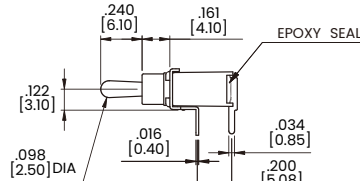
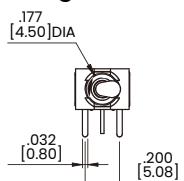
M2 PC Thru-Hole



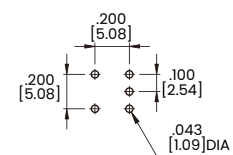
P.C.MOUNTING



M6 Single Pole



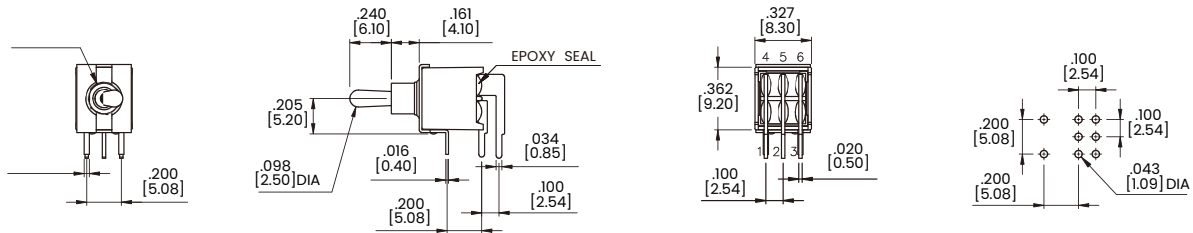
P.C.MOUNTING



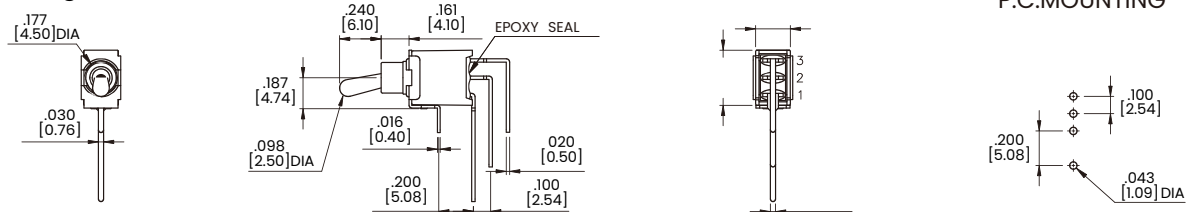
Dimensional Specs

inches [millimeters]

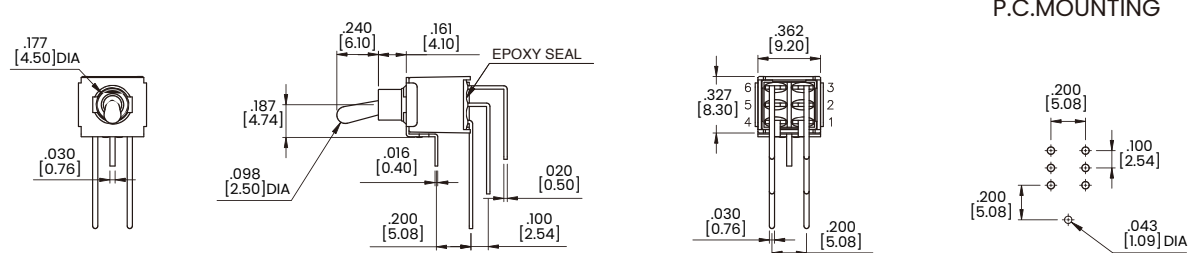
M6 Double Pole



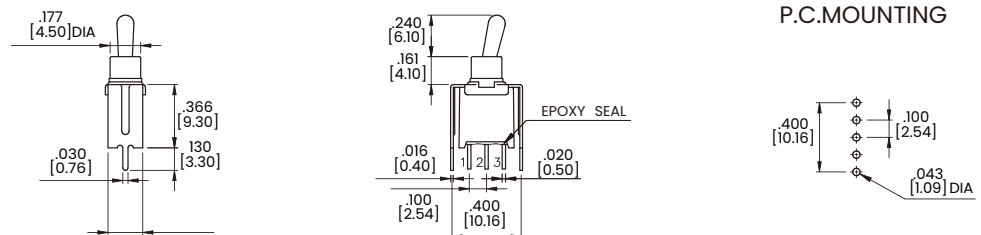
M7 Single Pole



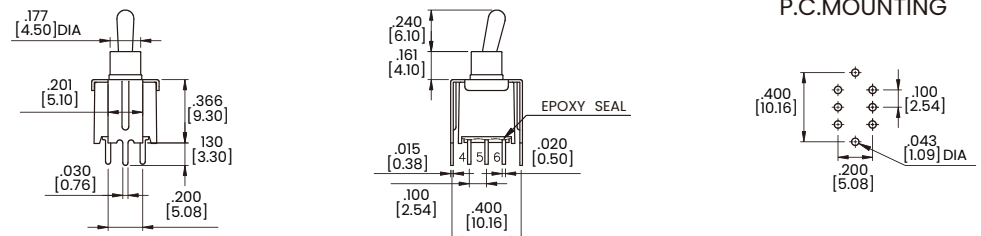
M7 Double Pole



VS2 Single Pole

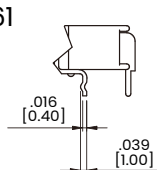


VS2 Double Pole

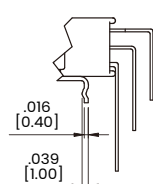


Snap-In Termination Options

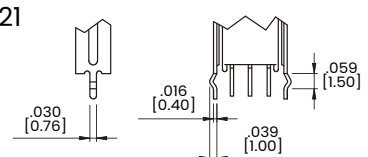
M61



M71



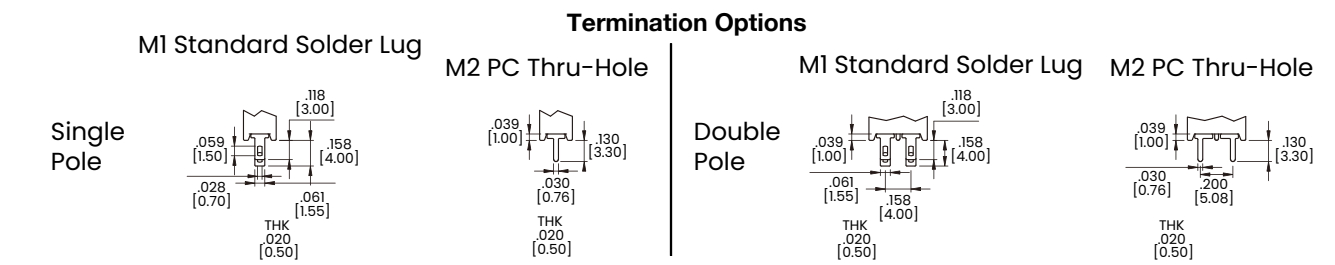
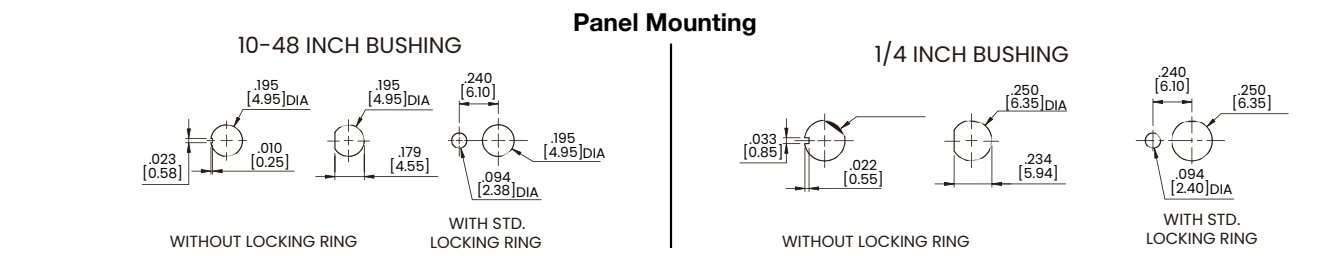
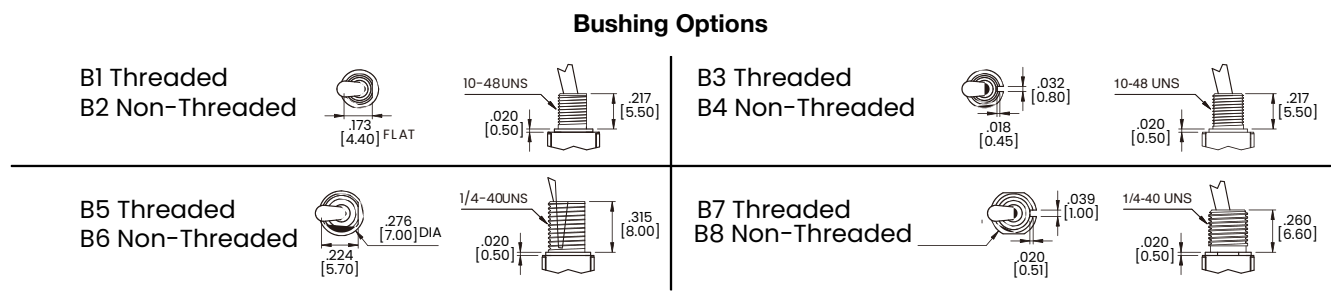
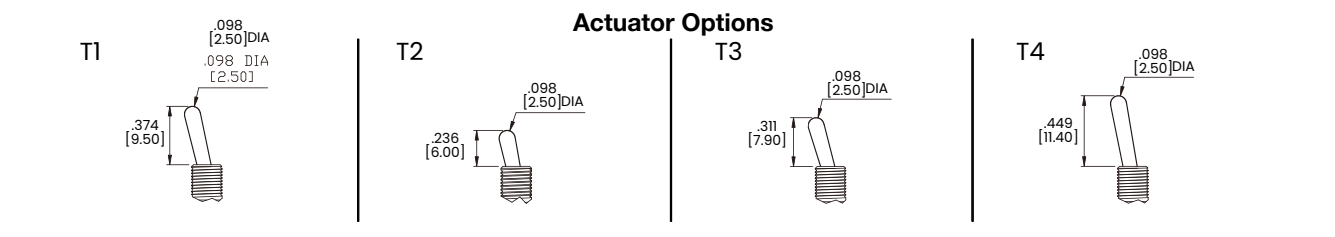
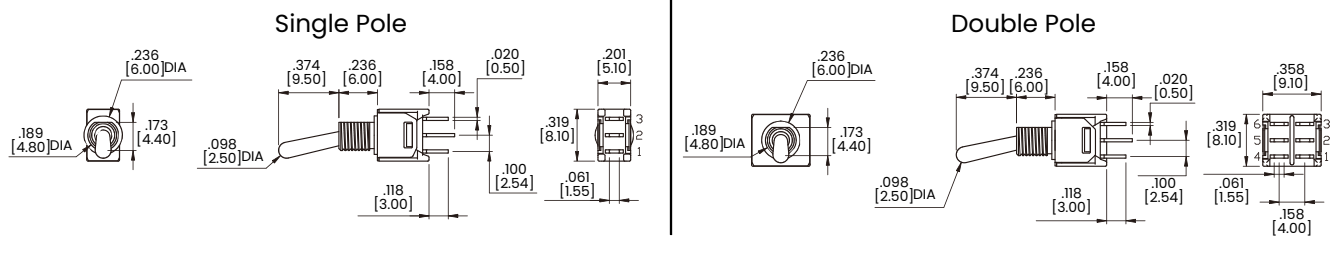
VS21



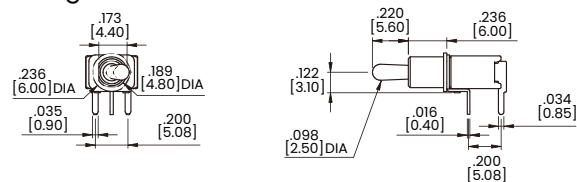
* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

Dimensional Specs

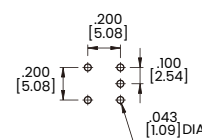
inches [millimeters]



M6 Single Pole



P.C. MOUNTING

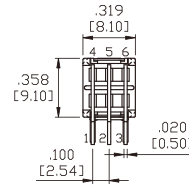
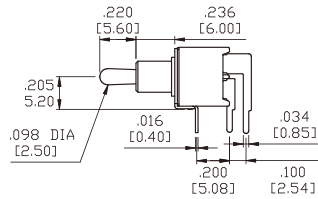
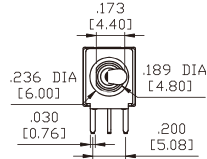


Dimensional Specs

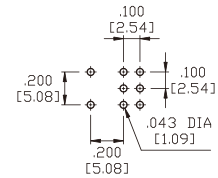
inches [millimeters]

Termination Options

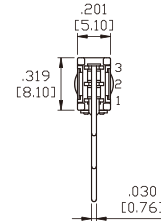
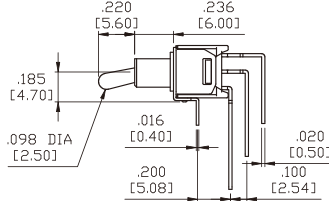
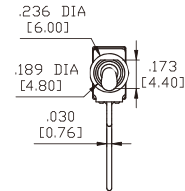
M6 Double Pole



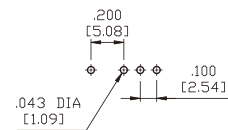
P.C.MOUNTING



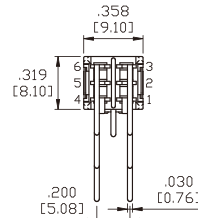
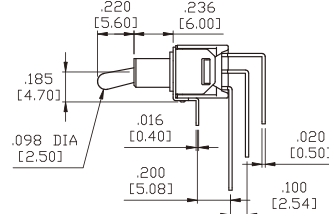
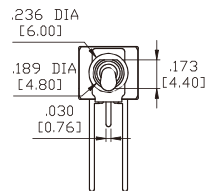
M7 Single Pole



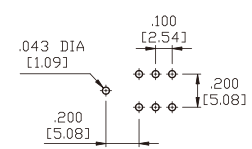
P.C.MOUNTING



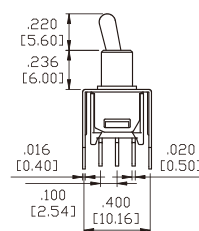
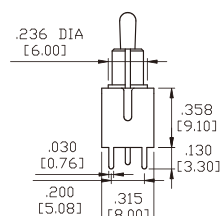
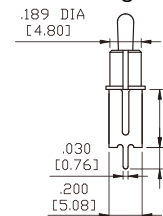
M7 Double Pole



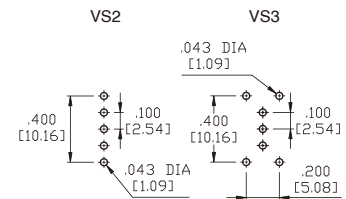
P.C.MOUNTING



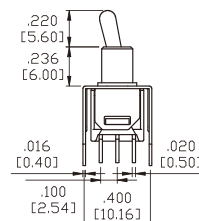
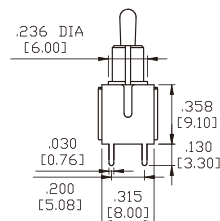
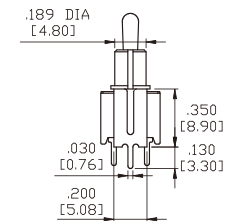
VS2-VS3 Single Pole



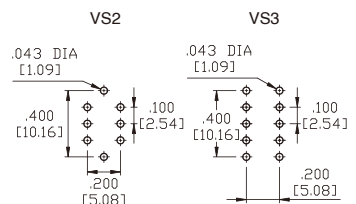
P.C.MOUNTING



VS2-VS3 Double Pole

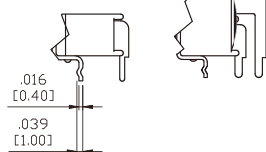


P.C.MOUNTING

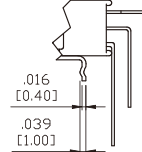


Snap-In Termination Options

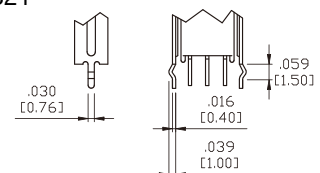
M61



M71



VS21

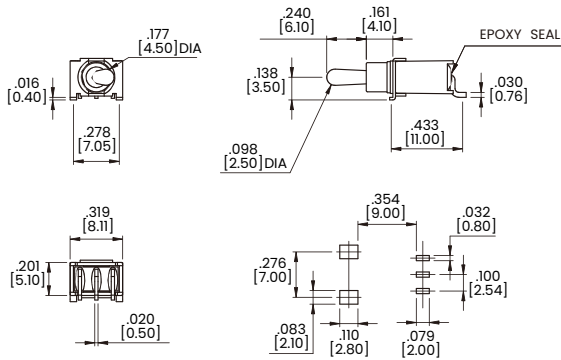


* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

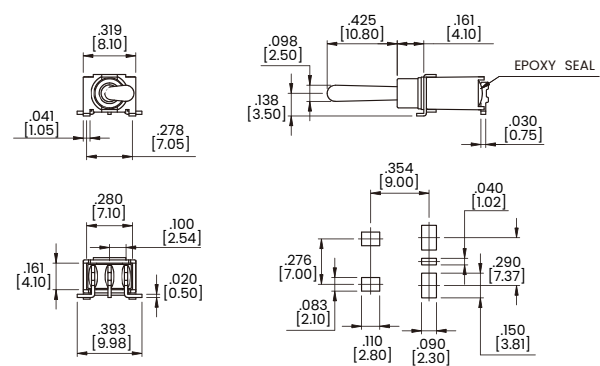
Dimensional Specs

inches [millimeters]

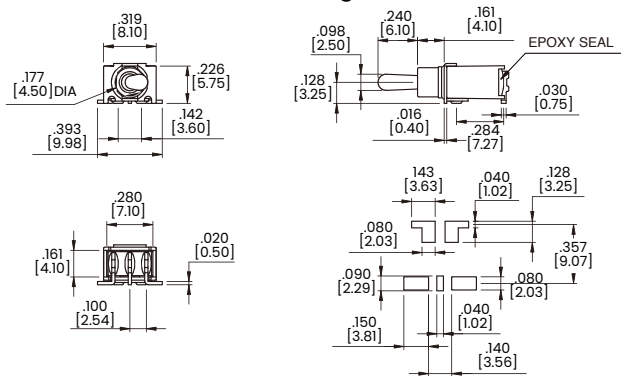
K6 Single Pole



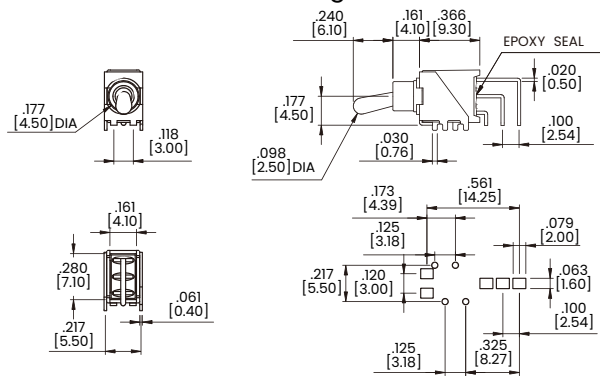
L6 Single Pole



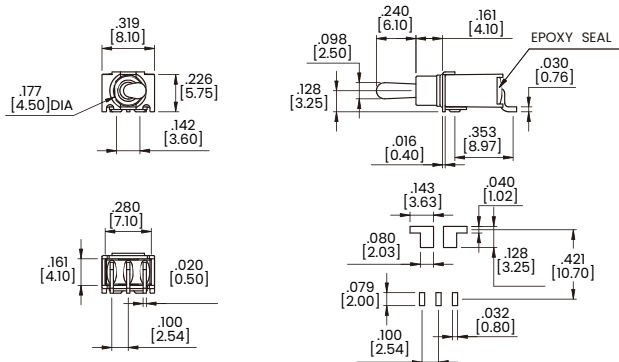
M6 Single Pole



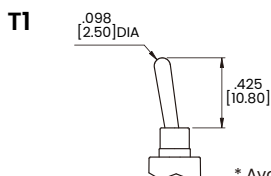
M7 Single Pole



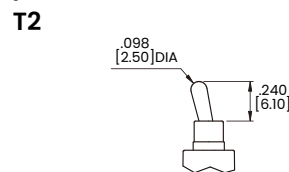
S6 Single Pole



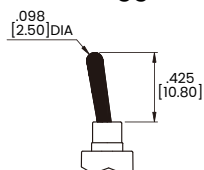
Actuator Options



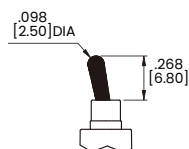
* Available with L6, S6, K6, M7 terminals only.



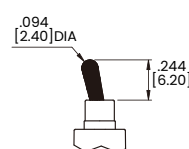
P1 Plastic Toggle



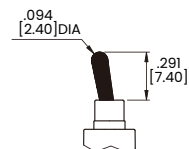
P2 Plastic Toggle



P3 Plastic Toggle



P4 Plastic Toggle



Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit www.carlingtech.com/findarep.



About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With six ISO9001 and IATF16949 registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.

To view all of Carling's environmental, quality, health & safety certifications please visit www.carlingtech.com/environmental-certifications.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Carling Technologies:

[2SS-MSP1-T2-B4-M7RE](#) [2S1-MSP1-T3-B2-M6QE](#) [2S1-MSP3-T2-B2-M7RE](#) [2S1-MSP5-T2-B2-M7RE](#) [2S1-MDP1-T1-B5-M6RE](#) [2S1-MSP3-T4-B1-M1QE](#) [2SS-MSP4-T2-B4-M6RE](#) [2S1-MSP1-T1-B1-M2QE](#) [2S1-MDP1-T1-B1-M2QE](#) [2S1-MDP2-T3-B1-M1QE](#) [2S1-MDP3-T1-B1-M2QE](#) [2S1-MDP4-T2-B1-M1QE](#) [2S1-MDP4-T3-B1-M1QE](#) [2S1-MSP1-T2-B1-M1QE](#) [2SS-MSP1-P2-B4-M6GE](#) [2SS-MSP1-T1-B4-M2RE](#) [2SS-MSP1-T1-B4-M6RE](#) [2SS-MSP4-T2-B4-M7RE](#) [2S1-MSP4-T1-B1-M2QE](#) [2S1-MSP4-T2-B2-M2RE](#) [2SM-MSP2-T2-M6KET/R](#) [2SS-MDP1-T2-B4-M2RE](#) [2SS-MDP4-T2-B4-M6RE](#) [2SS-MSP1-P2-B4-M2GE](#) [2S1-MSP1-T2-B2-M6QE](#) [2S1-MSP1-T3-B5-M1QE](#) [2S1-MSP1-T3-B7-M2RE](#) [2S1-MSP2-T2-B2-M7RE](#) [2S1-MSP3-T1-B1-M2QE](#) [2S1-MSP3-T2-B1-M1QE](#) [2S1-00000015](#) [2S1-00000024](#) [2S1-00000035](#) [2S1-00000036](#) [2S1-00000037](#) [2SS-00000027](#) [2SS-00000028](#) [2SS-00000029](#) [2SS-00000030](#) [2SS-00000019](#) [2SS-00000020](#) [2SS-00000021](#) [2SS-00000024](#) [2SS-00000025](#) [2SS-00000026](#) [2SM-00000004](#) [2SM-00000005](#) [2SM-00000006](#) [2SM-00000007](#) [2SS-00000008](#) [2SS-00000015](#) [2S1-00000048](#) [2S1-00000049](#) [2S1-00000050](#) [2S1-00000051](#) [2S1-00000052](#) [2SM-00000003](#) [2S1-00000038](#) [2S1-00000040](#) [2S1-00000041](#) [2S1-00000042](#) [2S1-00000043](#) [2S1-00000045](#)