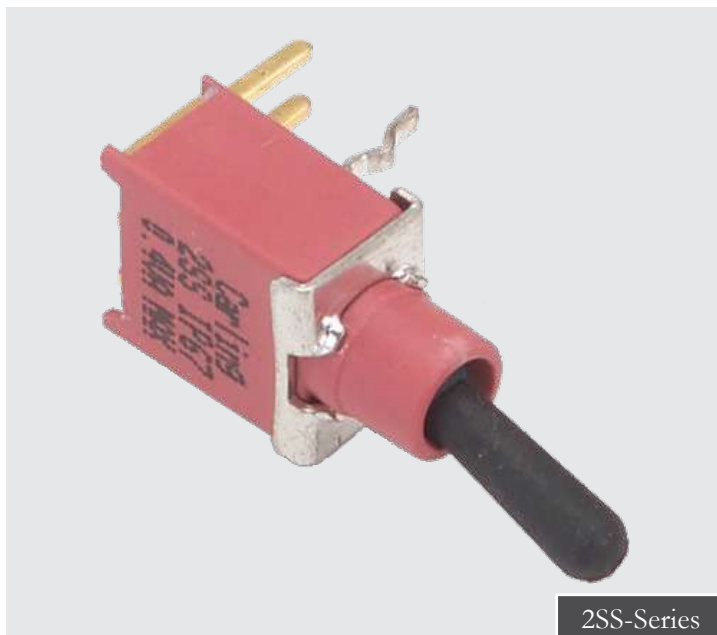


2SS/2S1/2SM

2S-Series

SUB-MINIATURE TOGGLES

The 2S family of sub-miniature toggle switches is composed of three switch series; the **2S1-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.



Product Highlights:

- ♦ IP67 Sealing
- ♦ 6 Actuator Options
- ♦ Surface, Thru Hole or Snap-in Mounting
- ♦ Dry-Circuit thru 3A 125VAC Ratings
- ♦ UL, CSA Approvals

Typical Applications:

- ♦ Telecommunications
- ♦ Instrumentation
- ♦ Networking
- ♦ Medical Equipment

Resources:

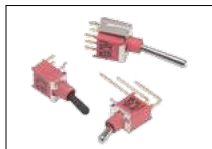
Download 3D CAD Files

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



Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062
Email: sales@carlingtech.com
Application Support: team2@carlingtech.com
Phone: 860.793.9281 Fax: 860.793.9231

www.carlingtech.com



2SS-Series
Sealed
Sub-Miniature
Toggle Switch



2S1-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 2S1-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	2S1-Series: Brass, chrome plated. 2SS & 2SM-Series: Brass, chrome plated or nylon, internal o-ring sealed
Bushing	2S1-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

2SS - **MSP** **1** - **T1** - **B4** - **M6** **G** **E**

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

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

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

5 BUSHING

B1 Threaded
B4 Unthreaded

6 TERMINATION

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

See page 27-28 for dimensional specifications.

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 or 28VDC, 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.
- 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

*Manufacturer reserves the right to change product specification without prior notice.

2S1 - **MSP** **1** - **T1** - **B4** - **M6** **Q** **E**

1 Series 2 Poles 3 Circuit 4 Actuator Style 5 Bushing 6 Termination 7 Contacts 8 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
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 ⁹

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

5 BUSHING ¹

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

6 TERMINATION

M1 Solder Lug **M71** Right Angle PC Thru Hole, vertical
M2 PCB **VS2** PC Mount, U bracket
M6 PC Mount, 90° horizontal **VS21** Snap-In, U bracket
M61 Snap-In, Right Angle
M7 PC Mount, 90° vertical
 See page 29-30 for dimensional specifications.

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}	tin ⁵	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
Q	silver ²	silver ²	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
R	gold ³	gold ⁴	0.4VA max 20V max (AC/DC)	N/A

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 bushing 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"

2SM - **MSP** **1** - **T1** - **M6** **G** **E**

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

1 SERIES

2SM Sealed Surface Mount Sub-Miniature Toggle Switch

2 POLES

MSP 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 / LENGTH ¹

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

5 TERMINATION

K6 Surface Mount, .433" [11.00 mm]
L6 Surface Mount, .354" [9.00 mm]
M6 Surface Mount, 90° flat, .286" [7.26 mm]
M7 Surface Mount, 90° vertical
S6 Surface Mount, 90°, .353" [8.96 mm]
 See page 31 for 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, 1.5A 250VAC	IP67
Q	silver ²	silver ²	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
R	gold ³	gold ³	0.4VA max 20V max (AC/DC)	IP67

7 EPOXY SEAL

E Epoxy Seal **0** without Epoxy Seal

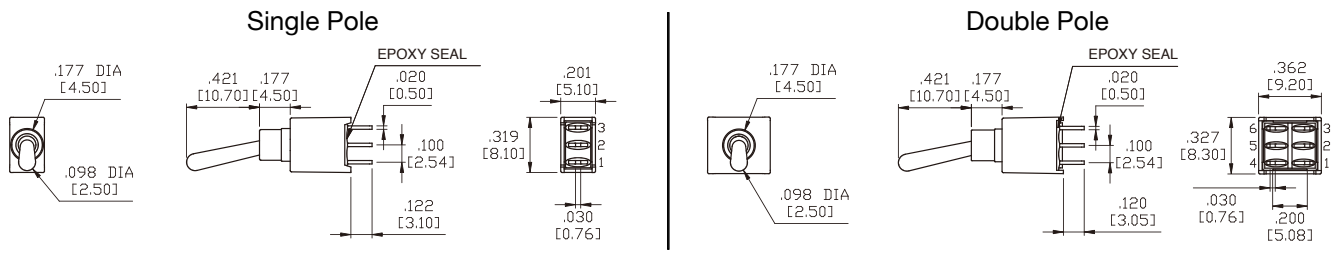
8 PACKAGING

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

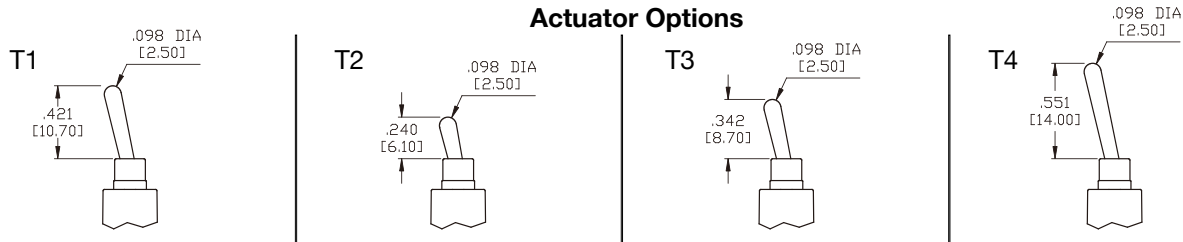
Notes:

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

2SS-Series Dimensional Specifications: in. [mm]

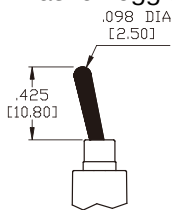


Actuator Options

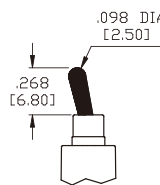


* B4 bushing shown. Subtract 2.55mm from toggle length for B1 bushing.

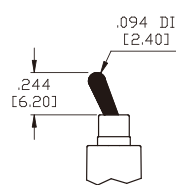
P1 Plastic Toggle



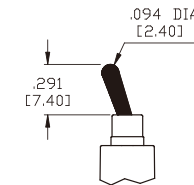
P2 Plastic Toggle



P3 Plastic Toggle



P4 Plastic Toggle



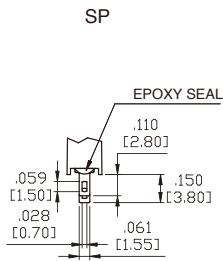
Bushing Options



* Subtract 2.55mm from toggle length for B1 bushing.

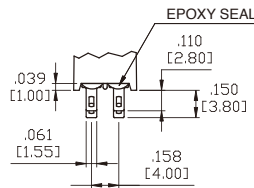
Termination Options

M1 STD. Solder Lug



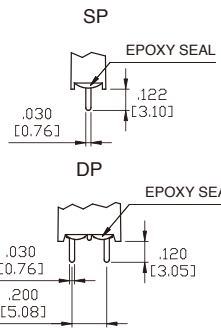
THK .020 [0.50]

DP

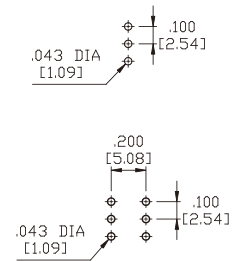


THK .020 [0.50]

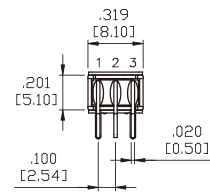
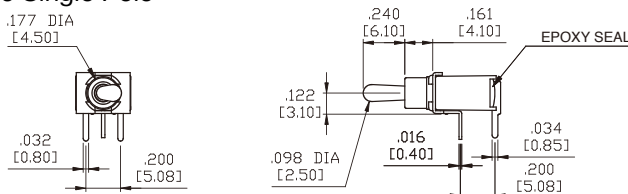
M2 PC Thru-Hole



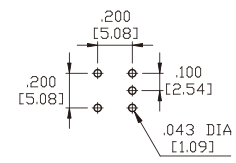
P.C.MOUNTING



M6 Single Pole



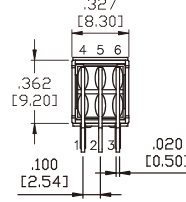
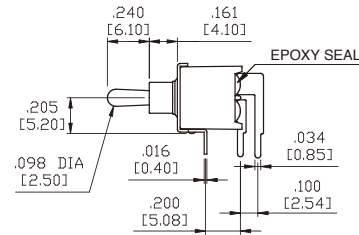
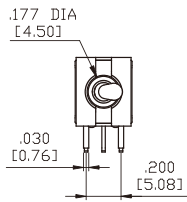
P.C.MOUNTING



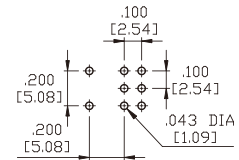
2SS-Series Dimensional Specifications: in. [mm]

Termination Options

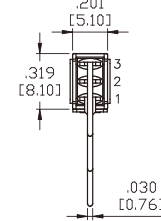
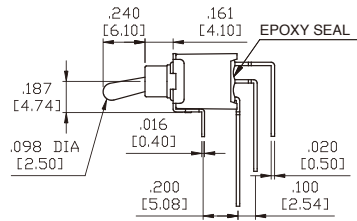
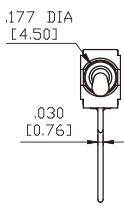
M6 Double Pole



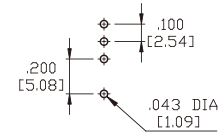
P.C.MOUNTING



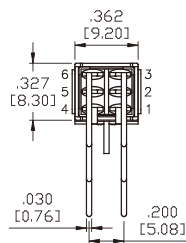
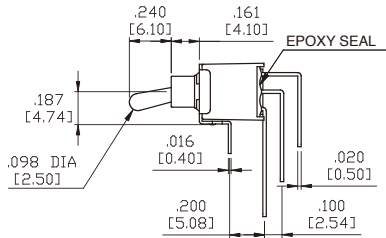
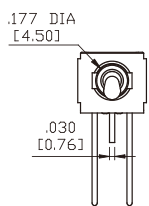
M7 Single Pole



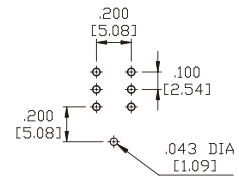
P.C.MOUNTING



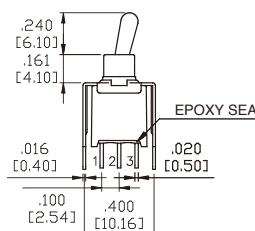
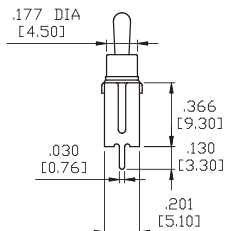
M7 Double Pole



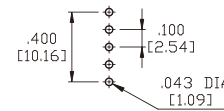
P.C.MOUNTING



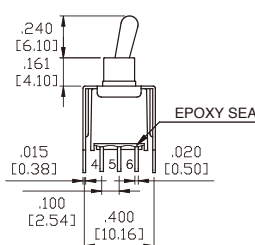
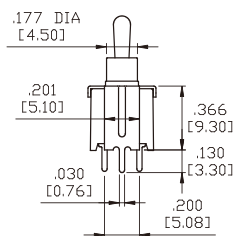
VS2 Single Pole



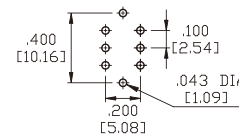
P.C.MOUNTING



VS2 Double Pole

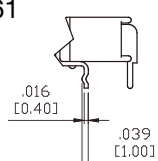


P.C.MOUNTING

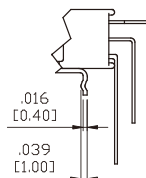


Snap-In Termination Options

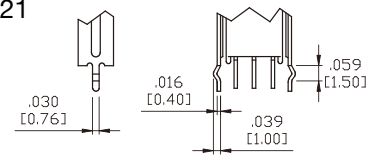
M61



M71

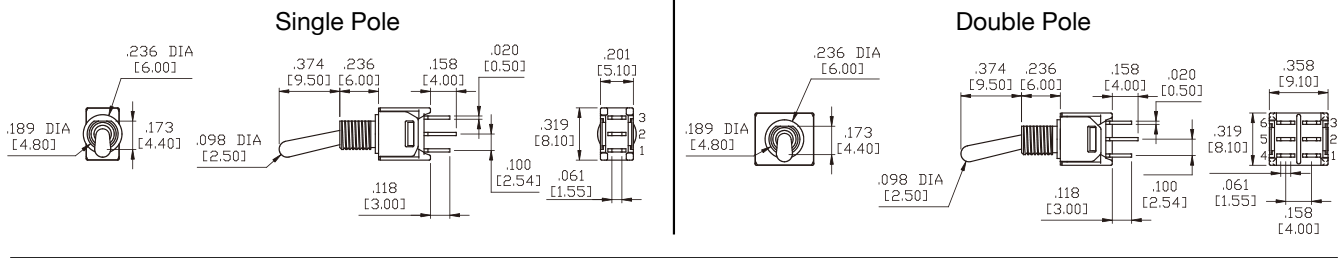


VS21

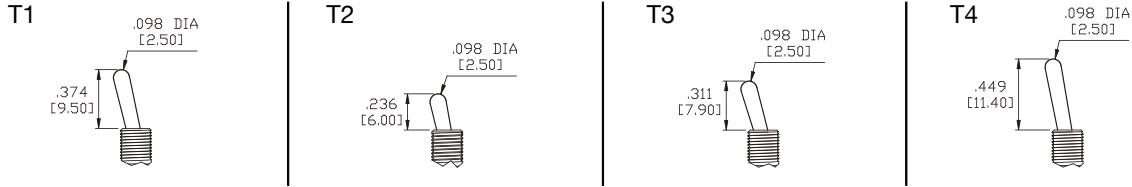


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

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

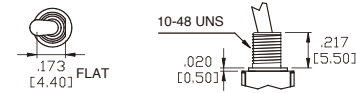


Actuator Options

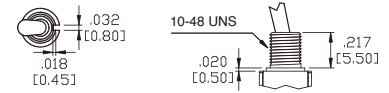


Bushing Options

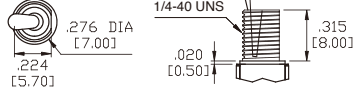
B1 Threaded
B2 Non-Threaded



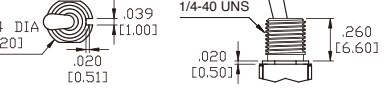
B3 Threaded
B4 Non-Threaded



B5 Threaded
B6 Non-Threaded

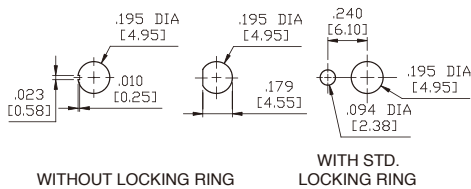


B7 Threaded
B8 Non-Threaded

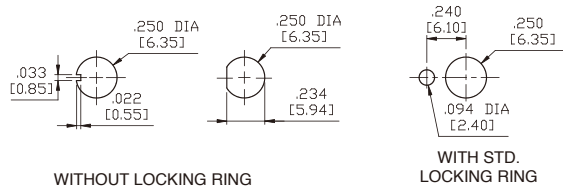


Panel Mounting

10-48 INCH BUSHING



1/4 INCH BUSHING

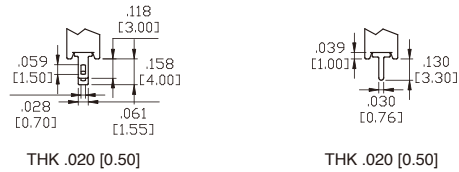


Termination Options

M1 Standard Solder Lug

M2 PC Thru-Hole

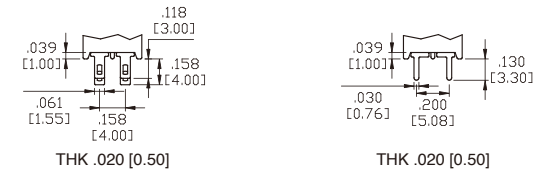
Single Pole



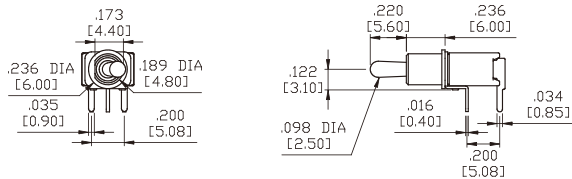
Double Pole

M1 Standard Solder Lug

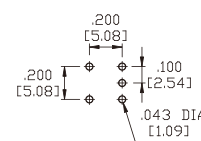
M2 PC Thru-Hole



M6 Single Pole



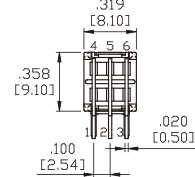
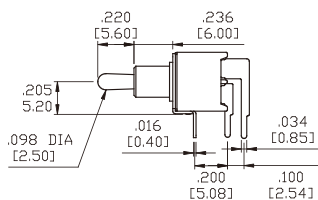
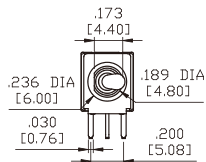
P.C. MOUNTING



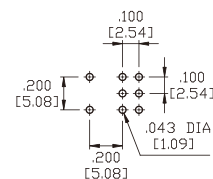
2S1-Series Dimensional Specifications: in. [mm]

Termination Options

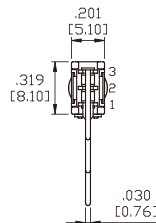
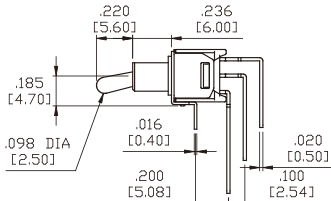
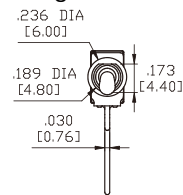
M6 Double Pole



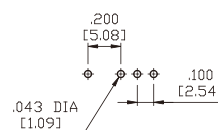
P.C.MOUNTING



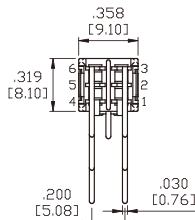
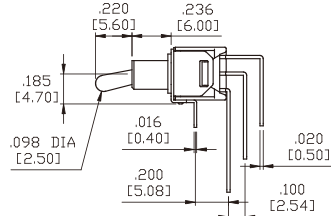
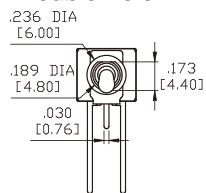
M7 Single Pole



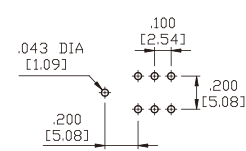
P.C.MOUNTING



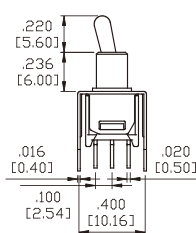
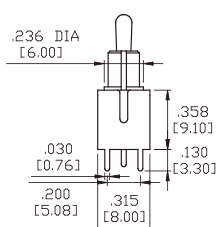
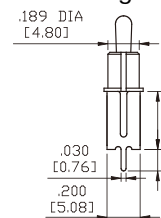
M7 Double Pole



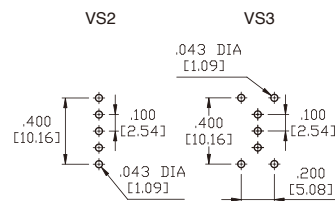
P.C.MOUNTING



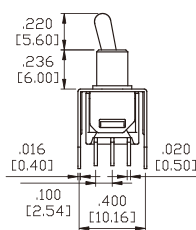
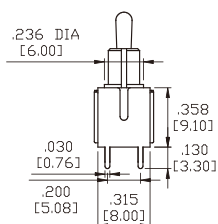
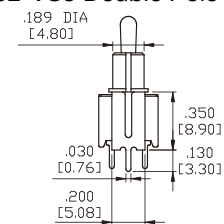
VS2-VS3 Single Pole



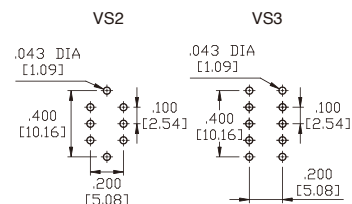
P.C.MOUNTING



VS2-VS3 Double Pole

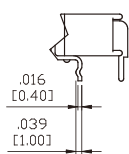


P.C.MOUNTING

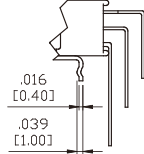


Snap-In Termination Options

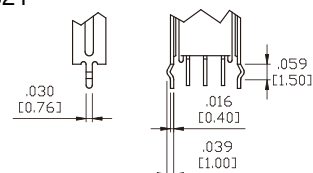
M61



M71



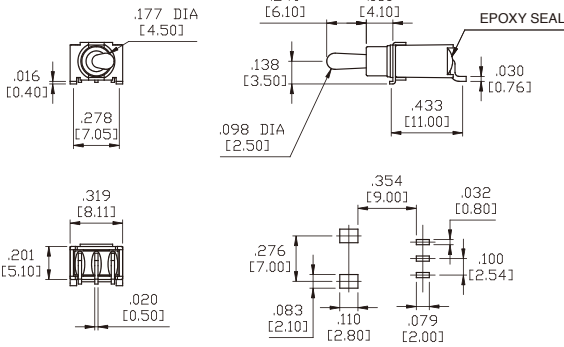
VS21



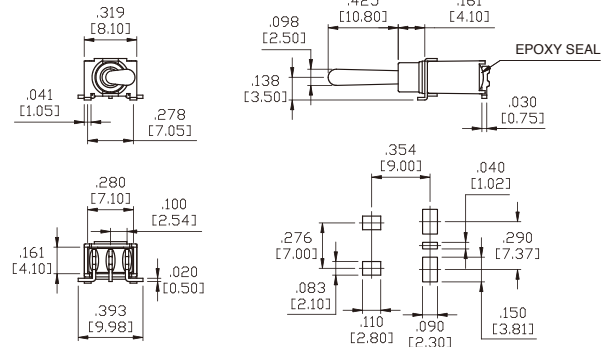
* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

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

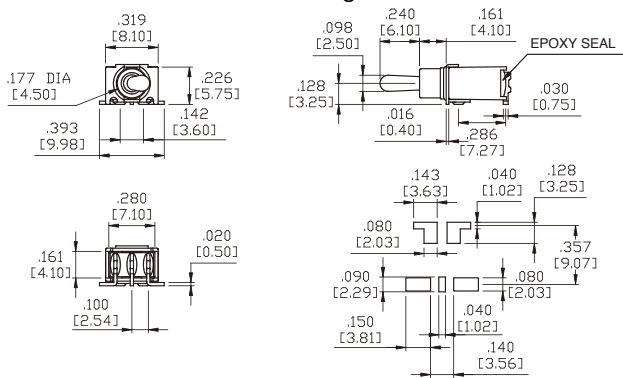
K6 Single Pole



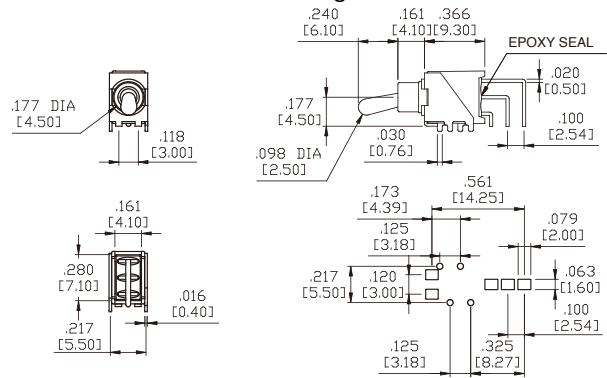
L6 Single Pole



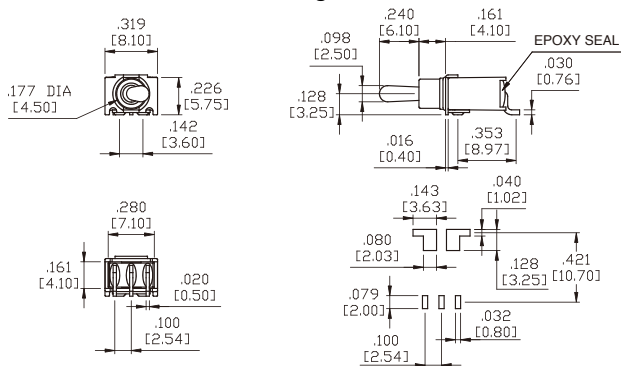
M6 Single Pole



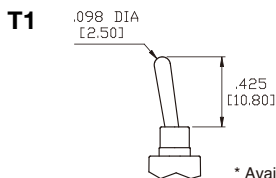
M7 Single Pole



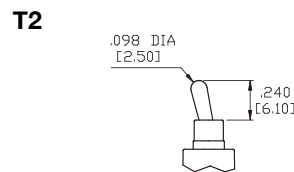
S6 Single Pole



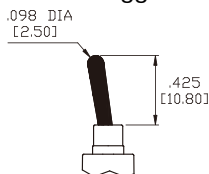
Actuator Options



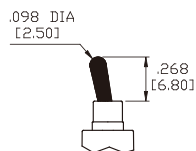
* Available with L6, S6, K6, M7 terminals only.



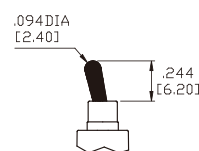
P1 Plastic Toggle



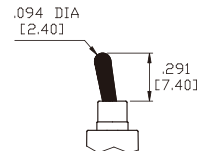
P2 Plastic Toggle



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 four ISO 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

Worldwide Headquarters

Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062
Phone: 860.793.9281 **Fax:** 860.793.9231
Email: sales@carlingtech.com

Northern Region Sales Office: nrsm@carlingtech.com
Southeast Region Sales Office: sersm@carlingtech.com
Midwest Region Sales Office: mrsm@carlingtech.com
West Region Sales Office: wrsm@carlingtech.com
Latin America Sales Office: larsm@carlingtech.com

Asia-Pacific Headquarters

Carling Technologies, Asia-Pacific Ltd.,
Suite 1607, 16/F Tower 2, The Gateway,
Harbour City, 25 Canton Road,
Tsimshatsui, Kowloon, Hong Kong
Phone: Int + 852-2737-2277 **Fax:** Int + 852-2736-9332
Email: sales@carlingtech.com.hk

Shenzhen, China: shenzhen@carlingtech.com
Shanghai, China: shanghai@carlingtech.com
Pune, India: india@carlingtech.com
Kaohsiung, Taiwan: taiwan@carlingtech.com
Yokohama, Japan: japan@carlingtech.com

Europe | Middle East | Africa Headquarters

Carling Technologies LTD
4 Airport Business Park, Exeter Airport,
Clyst Honiton, Exeter, Devon, EX5 2UL, UK
Phone: Int + 44 1392.364422 **Fax:** Int + 44 1392.364477
Email: ltd.sales@carlingtech.com

Germany: gmbh@carlingtech.com
France: sas@carlingtech.com



Carling Technologies®

Innovative Designs. Powerful Solutions.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Toggle Switches](#) category:

Click to view products by [Carling](#) manufacturer:

Other Similar products are found below :

[8A1-C-222](#) [60012L](#) [6006L](#) [6663](#) [7101MD9V30GE](#) [7101SPDV30BE](#) [7103SDV30BE](#) [7105D](#) [7108P3YAV2BE](#) [71YY50282](#)
[7201MD9AVBE](#) [7301K38](#) [7306K36](#) [7310K36](#) [7314K36](#) [7506K4](#) [7592K6](#) [7691K14](#) [7700K1](#) [8396K108](#) [8824K14](#) [8828K13](#) [G2VX](#) [G3VX](#)
[PS83-121G](#) [A101MD9AB04](#) [A101SD9AB04](#) [A101SDCQ04](#) [A103SD9AQ04](#) [A107TZB04](#) [A123P32YZQ](#) [A123S1YZG](#) [A127S1YCQ](#) [1-](#)
[1825192-0](#) [A131S1YZQ](#) [A201SCWZB04](#) [A207SYCB04](#) [A208J61ZQ0004](#) [A221K12KAG](#) [A221S1YZQ](#) [A221T1TCQ](#) [A232K12KZQ](#)
[A232M1YCQ](#) [A323S1CWZQ](#) [A423S1CWZG-M8](#) [A423S1YZQ](#) [12149A-3V](#) [12156AX408](#) [12147AGKX679](#) [12149AD2G0383VX408](#)