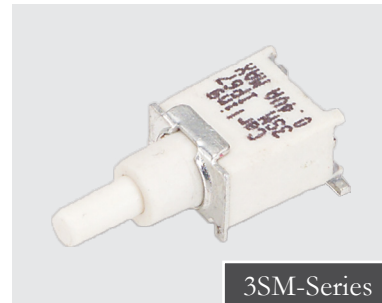
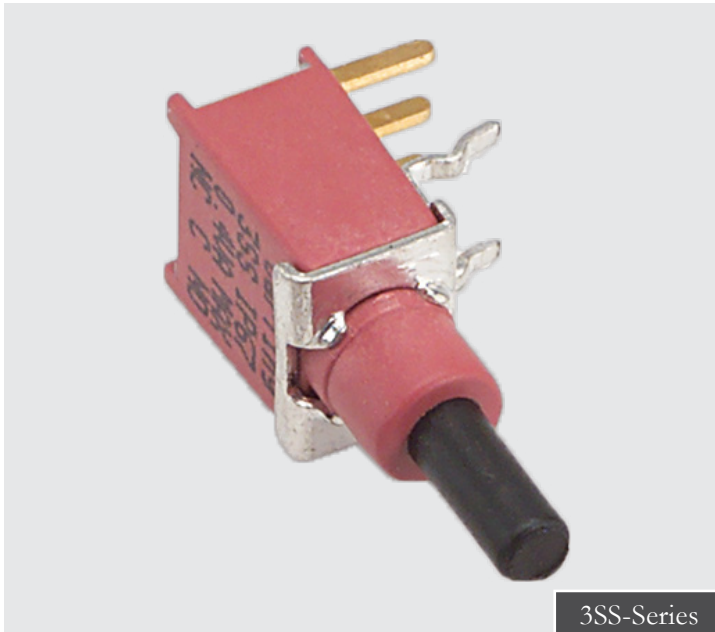


3SS/3S1/3SM

3S-Series

SUB-MINIATURE PUSHBUTTONS

The 3S family of sub-miniature pushbutton switches is composed of three switch series; the **3S1-Series** sub-miniature pushbutton switch, the **3SS-Series** sealed sub-miniature pushbutton switch, and the **3SM-Series** surface mount sealed sub-miniature pushbutton switch. All switches are available with a variety of rating, termination and actuator choices, and will withstand temperatures from -30°C to +85°C.



Product Highlights:

- IP67 Sealing
- AC or Low Voltage DC Rated
- Snap-in, PC or Surface Mounting
- Bulk Packed or Tape Reel

Typical Applications:

- Telecommunications
- Performance Audio
- Networking
- Computers
- Instrumentation
- Low Power On/Off Designs

Resources:

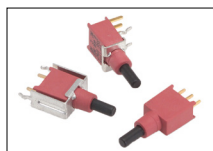
[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)



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



3SS-Series
Sealed
Sub-Miniature
Pushbutton Switch



3S1-Series
Sub-Miniature
Pushbutton
Switch



3SM-Series
Sealed Surface Mount
Sub-Miniature
Pushbutton Switch

Electrical

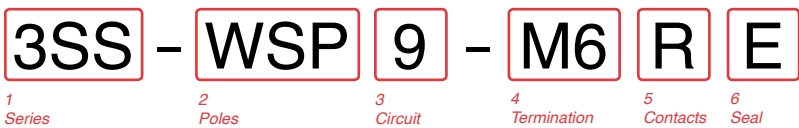
Contact Rating	refer to ordering scheme
Electrical Life	50,000 make & break cycles @ full load
Contact Resistance	20 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

Physical

Operating Temperature	-30°C to +85°C
Index of Protection	3SS & 3SM-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210

Material

Case	all UL94 V-0 3S1-Series: Diallyl phthalate (DAP) 3SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
Plunger	3S1-Series: Thermoplastic polyester, black 3SS-Series: Thermoplastic polyester (UL 94V-0), with internal o-ring 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
Bushing	3S1-Series: Brass, nickel plated 3SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
Housing	Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy



1 SERIES
3SS Sealed Sub-Miniature Pushbutton Switch

2 POLES
WSP Single pole - uses terminals 1, 2 & 3
WDP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT
() - momentary
Switching Position:

1	2
2-3, 5-6	2-1, 5-4
8 ON	(ON)
9 OFF	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 ACTUATOR STYLE 4

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

5 CONTACTS / TERMINALS

Contact	Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	1A 125VAC or 28VDC	IP67
K	gold ²	tin ^{3,4}	0.4VA max 20V max (AC/DC)	IP67
P	silver ¹	tin ^{3,4}	1A 125VAC or 28VDC	IP67
R	gold ²	gold ²	0.4VA max 20V max (AC/DC)	IP67

6 EPOXY SEAL

E Epoxy Seal	0 without Epoxy Seal
---------------------	-----------------------------

- Notes:
- 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
 - Tin option available with PC terminations only.

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

3S1 - SP 9 - B6 - M7 - R E

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

1 SERIES
3S1 Sub-Miniature Pushbutton Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3

3 CIRCUIT
 () - momentary
Switching Position:

	1	2
	2-3, 5-6	2-1, 5-4
8	ON	(ON)
9	OFF	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 BUSHING

B5 ¹	10-48 Threaded	B9	Flush Bushing
B6	Unthreaded "D"	B0	1/4" Unthreaded "D"
B7	Unthreaded	OP1	Snap-In with bezel
B8 ²	1/4-40 Threaded "D"	P0	Flush Plunger

5 TERMINATION

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

See page 50-51 for dimensional specifications.

6 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating
G	silver ³	gold over silver	1A@125VAC or 28VDC
K	gold ^{4,7}	tin ⁶	0.4VA max @ 20V max (AC/DC)
P	silver ^{3,8}	tin ⁶	1A@125VAC or 28VDC
Q	silver ³	silver ³	1A@125VAC or 28VDC
R	gold ⁴	gold ⁵	0.4VA max @ 20V max (AC/DC)

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

Notes:
 1 Hardware includes (2) 2M1-HDW21 nuts, and (1) 2M1-HDW22 washer
 2 Hardware includes (2) 2M1-HDW21 nuts, (1) 2M1-HDW22 washer, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring
 3 Movable contact and terminal platings: silver over copper alloy
 4 Movable contact and terminal platings: gold over nickel over copper alloy
 5 Terminal platings: gold over nickel over copper alloy
 6 Terminal platings: tin over copper alloy
 7 Terminal contact platings: Gold over nickel alloy
 8 Terminal contact platings: silver over nickel alloy

3SM - SP 9 - M6 - R E

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

1 SERIES
3SM Sealed Surface Mount Sub-Miniature Pushbutton Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3

3 CIRCUIT
 () - momentary
Switching Position:

	1	2
	2-3	2-1
8	ON	(ON)
9	OFF	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 TERMINATION

K6	Surface Mount, horizontal .433 [11.00 mm]
M6	Surface Mount, 90° flat .286 [7.26 mm]
M7	Surface Mount, 90° right angle
S6	Surface Mount, 90° horizontal .353 [8.97 mm]

5 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	1A 125VAC or 28VDC	IP67
K	gold ^{2,5}	tin ⁴	0.4VA max 20V max (AC/DC)	IP67
P	silver ^{1,6}	tin ⁴	1A 125VAC or 28VDC	IP67
Q	silver ¹	silver ¹	1A 125VAC or 28VDC	IP67
R	gold ²	gold ³	0.4VA max 20V max (AC/DC)	IP67

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

7 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:
 1 Movable contact and terminals 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 Terminals platings: tin over copper alloy
 5 Terminal contact platings: gold over nickel alloy
 6 Terminal contact platings: silver over nickel alloy

3S-Series Accessories

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word "assembled".
 Ex: 3S1-SP9-B6-M7-RE-C23 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 3S1-C13.

Optional Cap

3S1 - C1 3

1 Series 2 Toggle Cap Size 3 Color

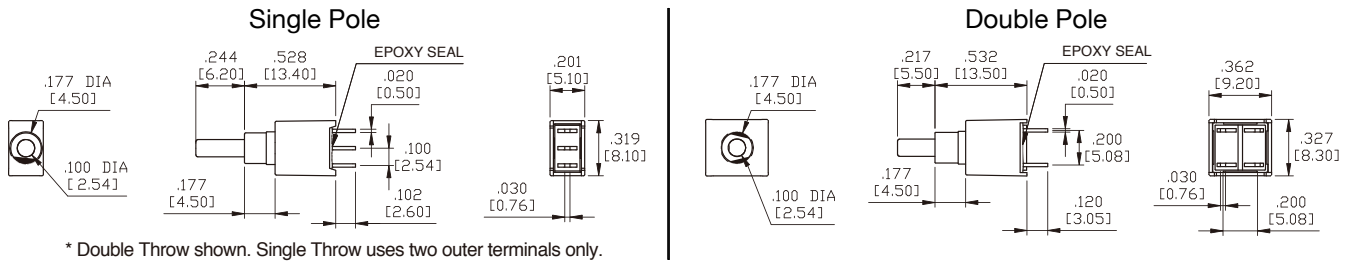
1 SERIES
3S1 Fits 3SS, 3S1 or 3MS

2 TOGGLE CAP SIZE
C1 .158" [4.01 mm] height **C2** .138" [35.05 mm] height

3 CAP COLOR

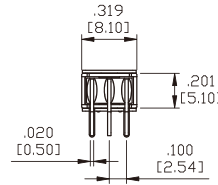
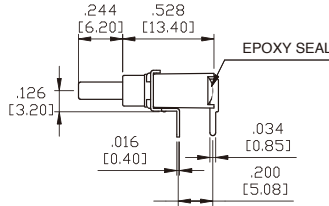
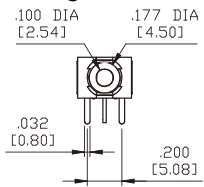
1	White	5	Yellow
2	Black	6	Green
3	Red	7	Blue
4	Orange		

3SS-Series Dimensional Specifications: in. [mm]

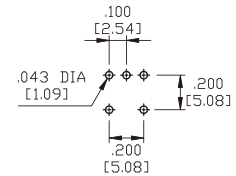


Termination Options

M6 Single Pole

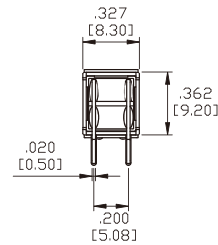
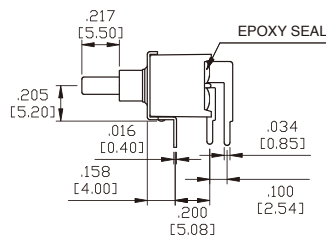
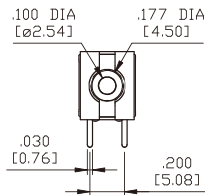


P.C.MOUNTING

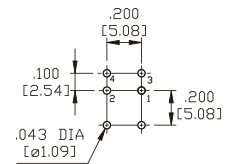


* Double Throw shown. Single Throw uses two outer terminals only.

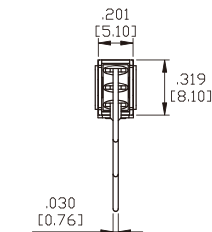
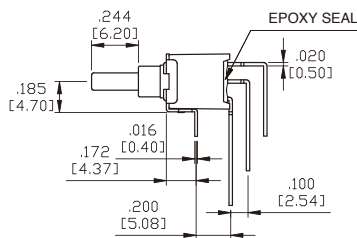
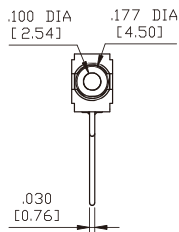
M6 Double Pole



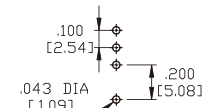
P.C.MOUNTING



M7 Single Pole

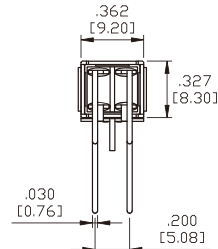
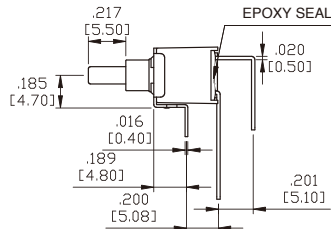
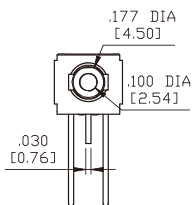


P.C.MOUNTING

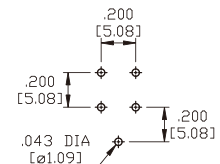


* Double Throw shown. Single Throw uses two outer terminals only.

M7 Double Pole



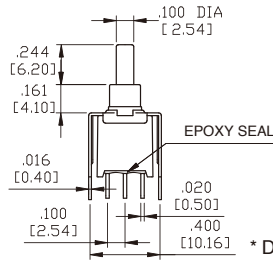
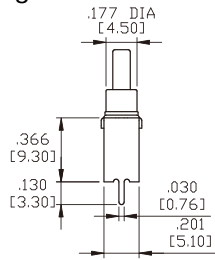
P.C.MOUNTING



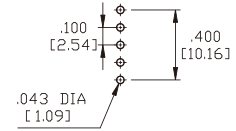
3SS-Series Dimensional Specifications: in. [mm]

Termination Options

VS2 Single Pole

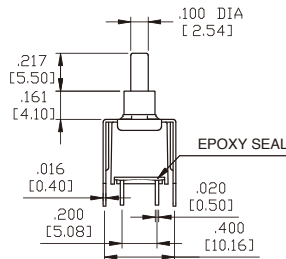
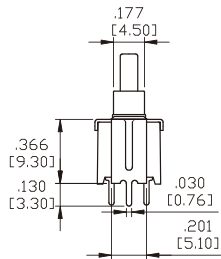


P.C. MOUNTING

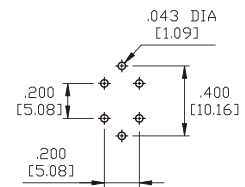


* Double Throw shown. Single Throw uses outer terminals only.

VS2 Double Pole

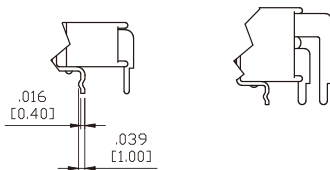


P.C. MOUNTING

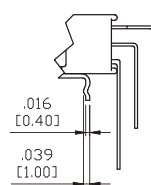


Snap-In Termination Options

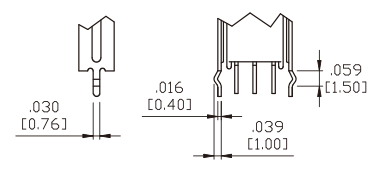
M61



M71

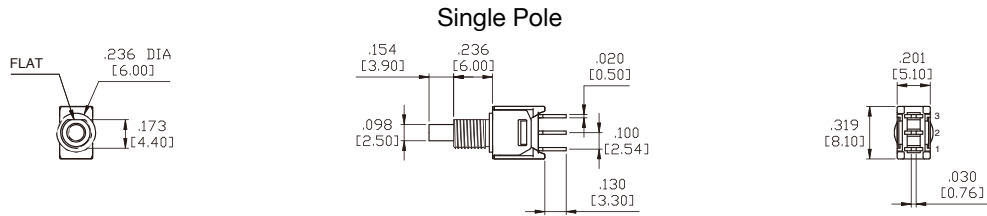


VS21



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

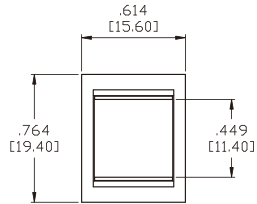
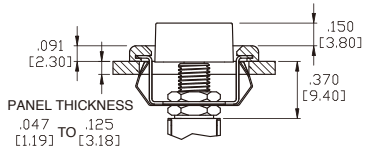
3S1-Series Dimensional Specifications: in. [mm]



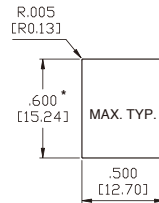
* Double Throw shown. Single Throw uses two outer terminals only.

Actuator Options for Snap-In Front Mount

OP1

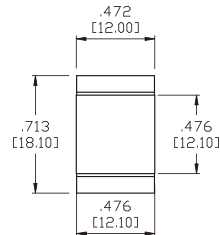
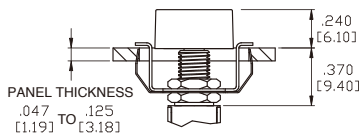


PANEL MOUNTING

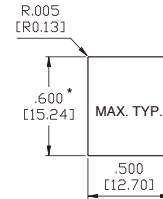


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

OP1 Without Frame

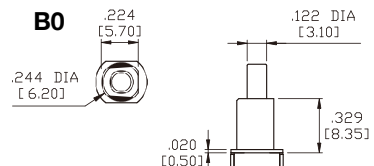
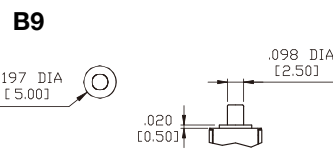
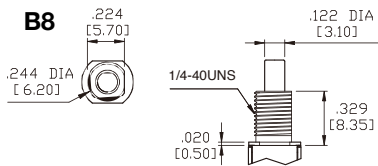
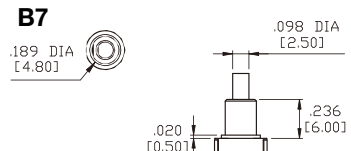
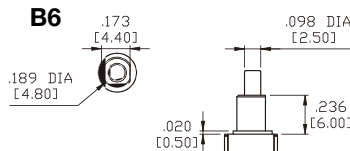
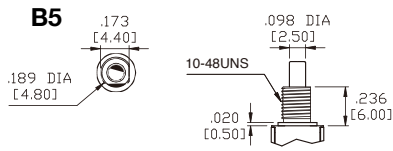


PANEL MOUNTING



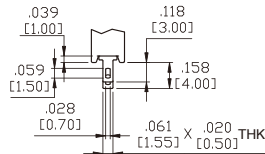
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Bushing Options

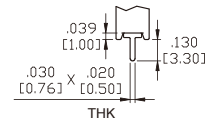


Termination Options

M1



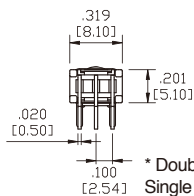
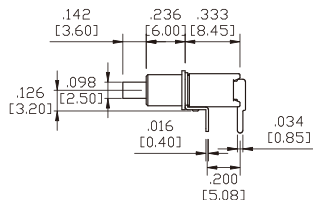
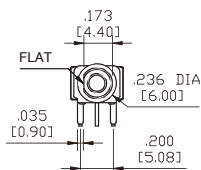
M2



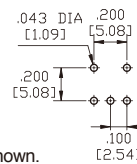
3S1-Series Dimensional Specifications: in. [mm]

Termination Options

M6 Single Pole

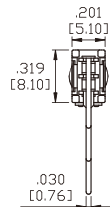
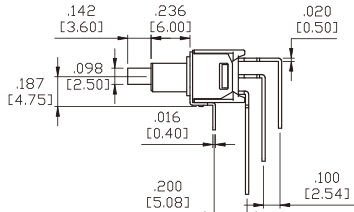
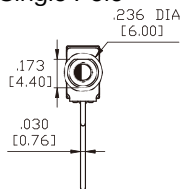


P.C.MOUNTING

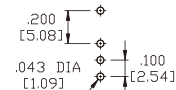


* Double Throw shown.
Single Throw uses two outer terminals only.

M7 Single Pole

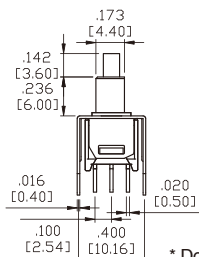
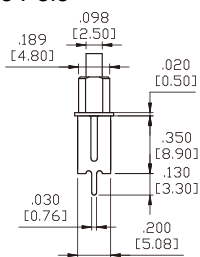


P.C.MOUNTING

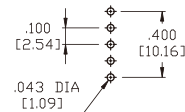


* Double Throw shown.
Single Throw uses two outer terminals only.

VS2 Single Pole



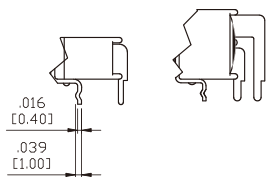
P.C.MOUNTING



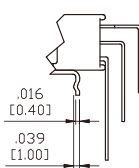
* Double Throw shown. Single Throw uses outer terminals only.

Snap-In Termination Options

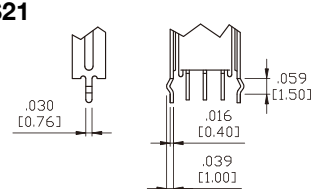
M61



M71



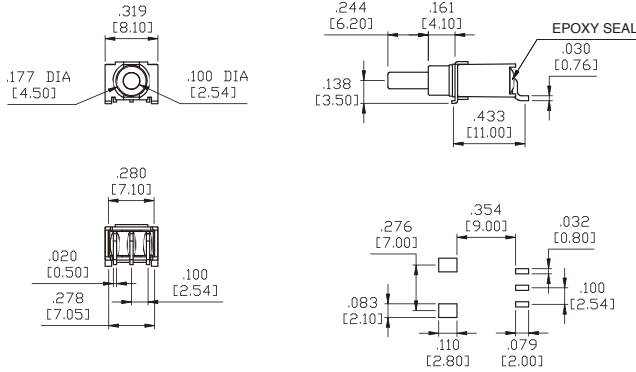
VS21



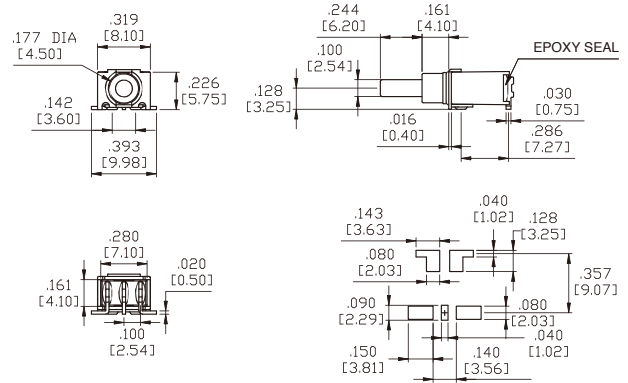
* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

3SM-Series Dimensional Specifications: in. [mm]

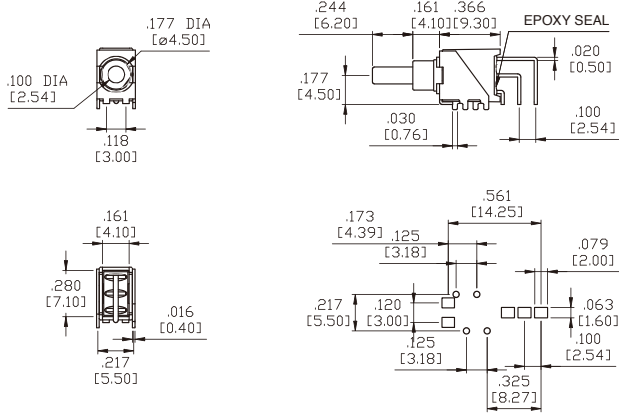
K6 Single Pole



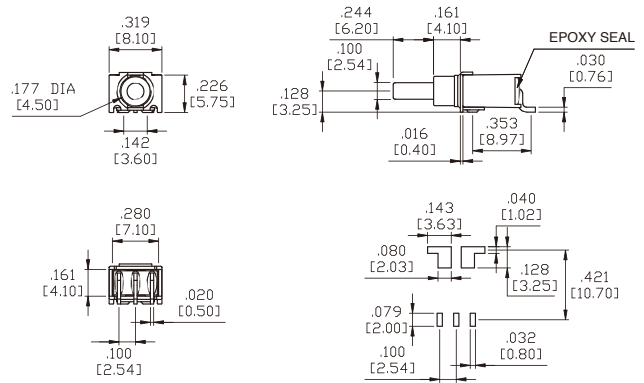
M6 Single Pole



M7 Single Pole



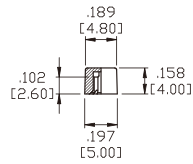
S6 Single Pole



* Double Throw shown. Single Throw uses two outer terminals only.

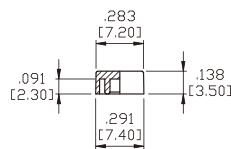
Plunger Caps

C1



* MATERIAL: ABS.

C2



* MATERIAL: ABS.

CAP COLORS			
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

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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: mrrsm@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



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