8M Series
Sub-Miniature Pushbutton Switches

SPECIFICATIONS

CONTACT RATING: Dependent upon contact material See Page 117.
MECHANICAL LIFE: 50,000 make-and-break cycles.
CONTACT RESISTANCE: 20 mΩ max. initial @ 2-4VDC
    100mA for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000 MΩ min.
DIELECTRIC STRENGTH: 1,000 Vrms min.@sea level.
OPERATING TEMPERATURE: -30°C to 85°C.

MATERIALS

CASE: Diallyl phthalate(DAP) (UL94V-0).
PLUNGER: Nylon 6/6,black.
BUSHING: Brass or zinc,nickel plated.
HOUSING: Stainless Steel.
SWITCH SUPPORT: Brass.tin plated.
CONTACT/TERMINAL: Copper alloy or Brass, with silver or gold
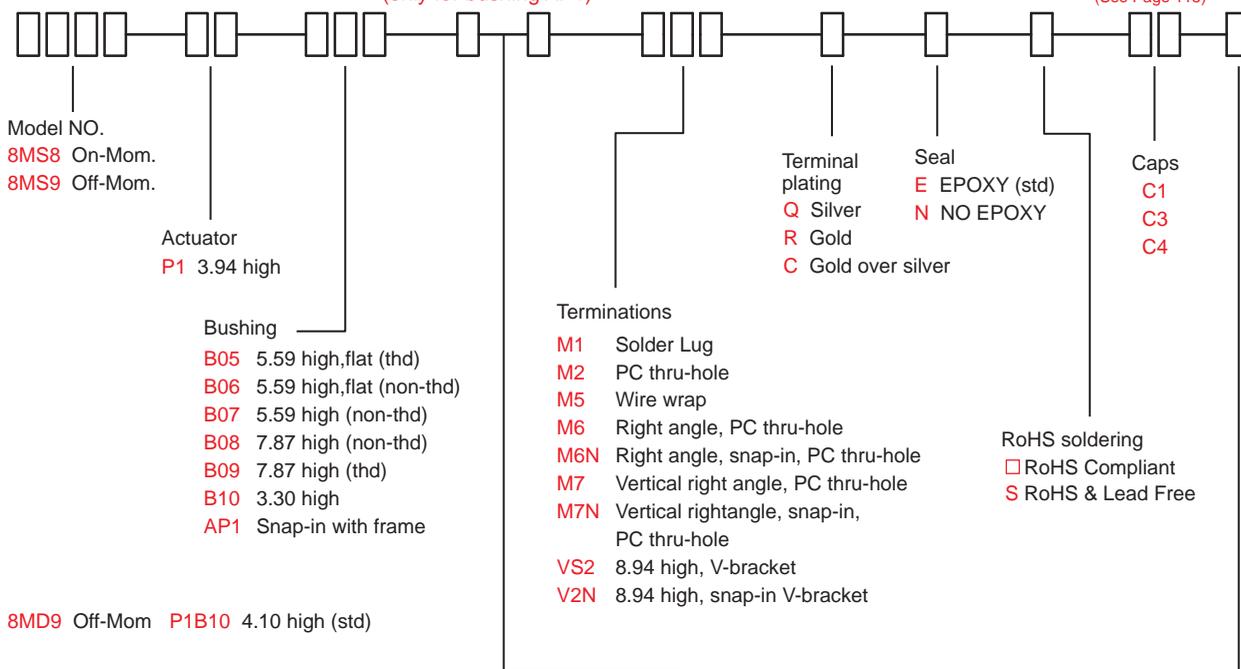   plated.(See Page 117)

C $_{US}$ E 187490   RoHS compliant   Pb lead-free

HOW TO ORDER

MODEL NO.	ACTUATOR	BUSHING	FRAME COLOR	CAP COLOR	TERMINATIONS	TERMINAL PLATING	SEAL	RoHS SOLDERING	CAPS	CAP COLOR
			See below (only for bushing AP1)							See below (See Page 115)

Model NO.
8MS8 On-Mom.
8MS9 Off-Mom.

Actuator
P1 3.94 high

Bushing
B05 5.59 high,flat (thd)
B06 5.59 high,flat (non-thd)
B07 5.59 high (non-thd)
B08 7.87 high (non-thd)
B09 7.87 high (thd)
B10 3.30 high
AP1 Snap-in with frame

8MD9 Off-Mom P1B10 4.10 high (std)

Terminations
M1   Solder Lug
M2   PC thru-hole
M5   Wire wrap
M6   Right angle, PC thru-hole
M6N   Right angle, snap-in, PC thru-hole
M7   Vertical right angle, PC thru-hole
M7N   Vertical rightangle, snap-in,
      PC thru-hole
VS2   8.94 high, V-bracket
V2N   8.94 high, snap-in V-bracket

Terminal
plating
Q Silver
R Gold
C Gold over silver

Seal
E EPOXY (std)
N NO EPOXY

RoHS soldering
☐ RoHS Compliant
S RoHS & Lead Free

Caps
C1
C3
C4

Model NO.
8MSL On-On

Actuator
P1 4.29 high

Bushing
B05 5.24 high,flat (thd)
B06 5.24 high,flat (non-thd)

Frame/Cap color

ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

＊Besides standard color,
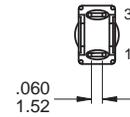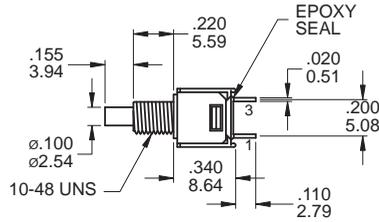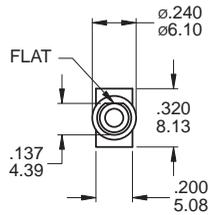other colors need to check stocks available.

8M Series

Sub-Miniature Pushbutton Switches

SWITCH FUNCTION

NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS / SCHEMATIC	
			POS.1	POS.2	POS.1	POS.2
SP	Q2818	8MS8	ON	MOM	2-1 NC 1 •—• 2 (COMM) •3 NO	2-3 NC 1 •—• 2 (COMM) •3 NO
	Q2819	8MS9	OFF	MOM	OPEN	1-3 1 ⊥ ⊥ 3
DP	Q2829	8MD9	OFF	MOM	OPEN	1-3,4-6 1 ⊥ ⊥ 3 4 ⊥ ⊥ 6

MOM=MOMENTARY

POLE OPTIONS

SPST

Part No. Shown : 8MS9P1B05M1QE
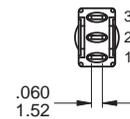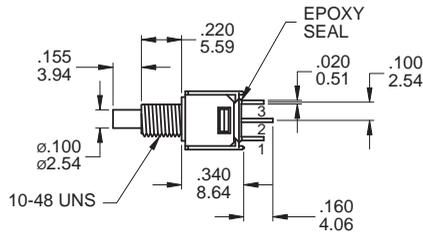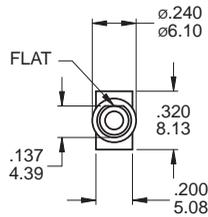
SPDT

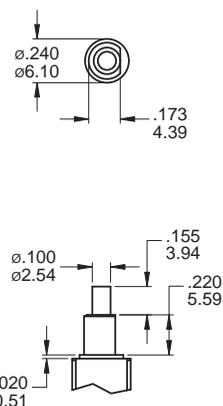Part No. Shown : 8MS8P1B05M1QE
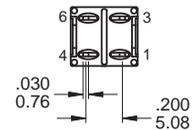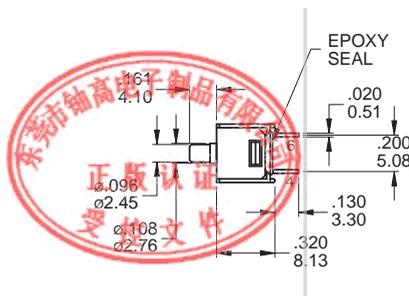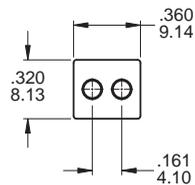
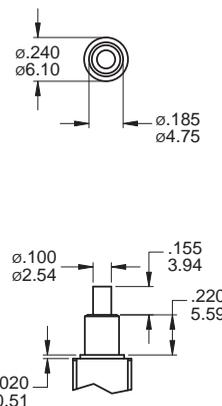**DPST**

Part No. Shown : 8MD9P1B10M2RE

BUSHING OPTIONS
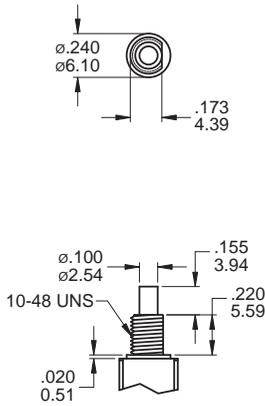
B05 THD | **B06** NON-THD | **B07** NON-THD | **B08** NON-THD **B09** THD | **B10**

ø.240 ø6.10 .173 4.39
ø.100 ø2.54 .155 3.94 .220 5.59 10-48 UNS .020 0.51

ø.240 ø6.10 .173 4.39
ø.100 ø2.54 .155 3.94 .220 5.59 .020 0.51

ø.240 ø6.10 ø.185 ø4.75
ø.100 ø2.54 .155 3.94 .220 5.59 .020 0.51

.225 5.72 .245 6.22 ø.280 ø7.11
ø.120 ø3.05 .215 5.46 1/4-40 UNS .310 7.87 .020 0.51

ø.200 ø5.08
ø.100 ø2.54 .130 3.30 .020 0.51
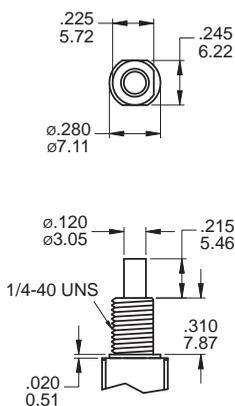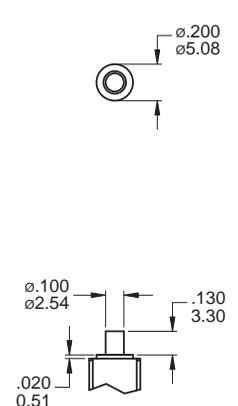
TERMINATION OPTIONS

M1 Solder lug
.110 2.79 .060 1.53 .160 4.06 EPOXY SEAL .030 0.76 .060 1.52 .020 0.51THK.

M2 PC Thru-hole
EPOXY SEAL .130 3.30 .030 0.76 .020 0.51THK.

M5 Wire Wrap
.070 1.78 EPOXY SEAL .600 15.24 .060 1.52 .030 0.76 .020 0.51THK.

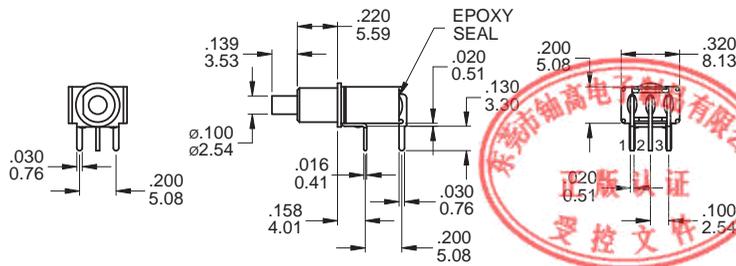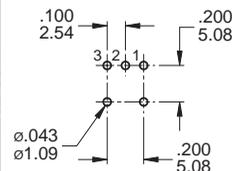| OTHER TERMINATION OPTIONS	
M6	Right angle P.C. Mount
M6N	Right angle P.C. Mount with snap-in bracket
M7	Right angle P.C. Mount
M7N	Right angle P.C. Mount with snap-in bracket
VS2	Right angle P.C. Mount
V2N	Vertical bracket P.C. Mount with snap-in bracket

M6

.030 0.76 .200 5.08 | .139 3.53 .220 5.59 EPOXY SEAL .020 0.51 .130 3.30 ø.100 ø2.54 .016 0.41 .030 0.76 .158 4.01 .200 5.08 | .200 5.08 .320 8.13 .020 0.51 .200 5.08

P.C. MOUNTING .200 5.08 .200 5.08 ø.043 ø1.09

SPST

Part No. Shown : 8MS9P1B06M6RE

M6

.030 0.76 .200 5.08 | .139 3.53 .220 5.59 EPOXY SEAL .020 0.51 .130 3.30 ø.100 ø2.54 .016 0.41 .030 0.76 .158 4.01 .200 5.08 | .200 5.08 .320 8.13 .020 0.51 .100 2.54
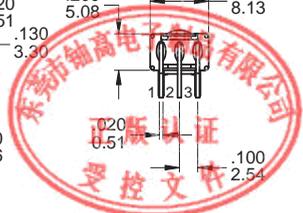
P.C. MOUNTING .100 2.54 .200 5.08 ø.043 ø1.09 .200 5.08
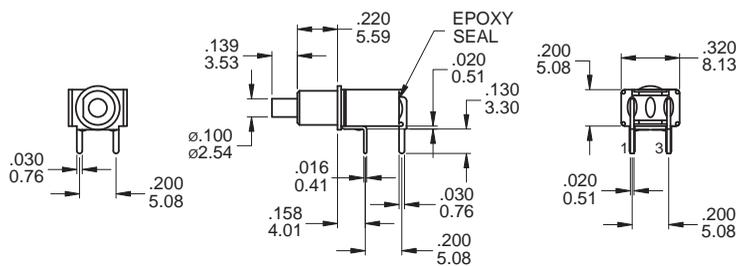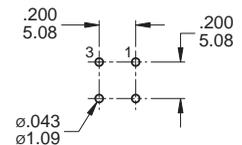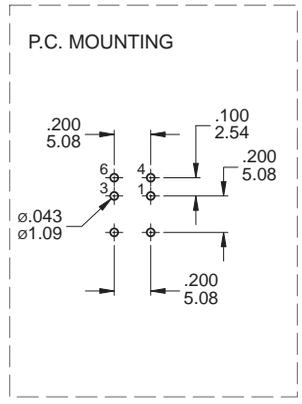
SPDT

Part No. Shown : 8MS8P1B06M6QE

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8M Series
Sub-Miniature Pushbutton Switches

M6

DPST

.320 / 8.13
.161 / 4.10
EPOXY SEAL
.028 / 0.70
.136 / 3.45
.320 / 8.13
.360 / 9.14
.161 / 4.10
ø.096 / ø.2.45
.200 / 5.08
.001 / 0.25
.034 / 0.86
.020 / 0.50
.020 / 5.08
.200 / 5.08
.100 / 2.54

P.C. MOUNTING
.200 / 5.08
.100 / 2.54
.200 / 5.08
ø.043 / ø1.09
.200 / 5.08
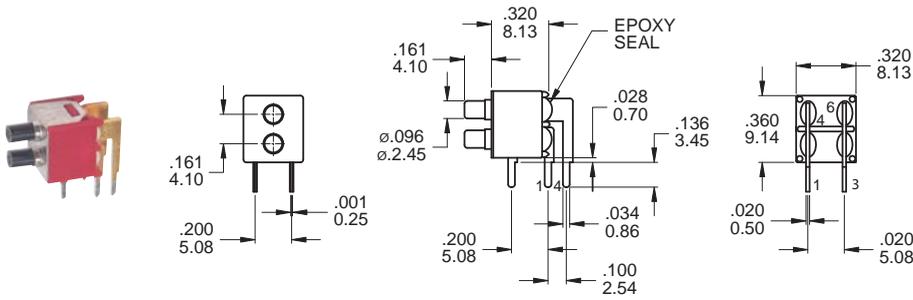
Part No. Shown : 8MD9P1B10M6RE

M7

SPST

.220 / 5.59
EPOXY SEAL
.139 / 3.53
.200 / 5.08
.030 / 0.76
.020 / 0.50
.320 / 8.13
ø.100 / ø2.54
.016 / 0.41
.530 / 13.46
.158 / 4.01
.200 / 5.08
.030 / 0.76
.200 / 5.08
.020 / 0.51

P.C. MOUNTING
.200 / 5.08
ø.043 / ø1.09
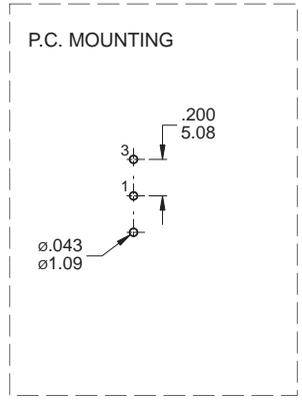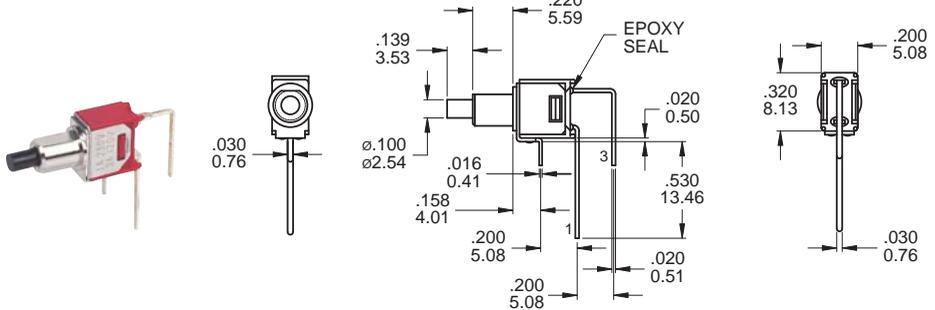
Part No. Shown : 8MS9P1B06M7QE

M7

SPDT

.220 / 5.59
EPOXY SEAL
.139 / 3.53
.200 / 5.08
.030 / 0.76
.020 / 0.50
.320 / 8.13
ø.100 / ø2.54
.016 / 0.41
.530 / 13.46
.158 / 4.01
.200 / 5.08
.030 / 0.76
.200 / 5.08
.020 / 0.51
.100 / 2.54

P.C. MOUNTING
.100 / 2.54
.200 / 5.08
ø.043 / ø1.09
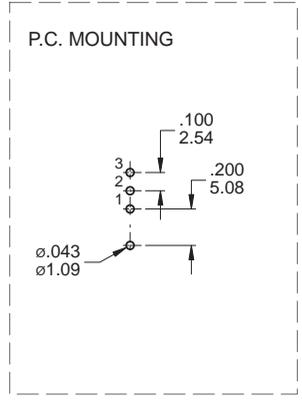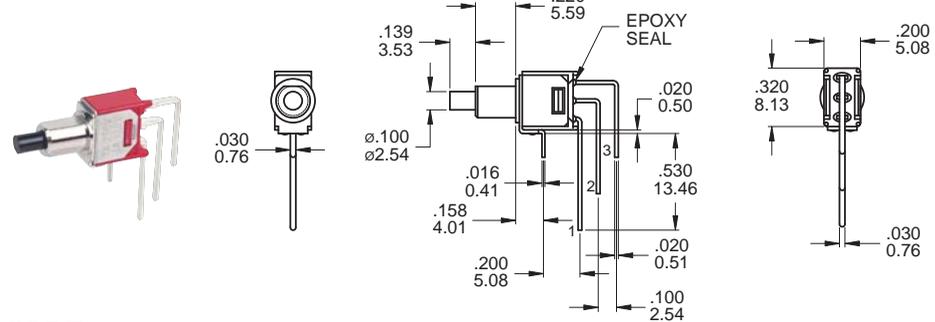
Part No. Shown : 8MS8P1B06M7QE

VS2

SPST

ø.100 / ø2.54
.352 / 8.94
.139 / 3.53
.130 / 3.30
.220 / 5.59
.030 / 0.76
.200 / 5.08
.016 / 0.41
EPOXY SEAL
.020 / 0.51
.200 / 5.08
.400 / 10.16

P.C. MOUNTING
.200 / 5.08
.400 / 10.16
ø.043 / ø1.09
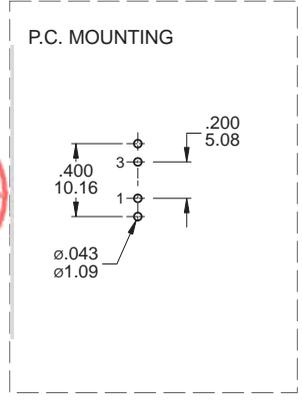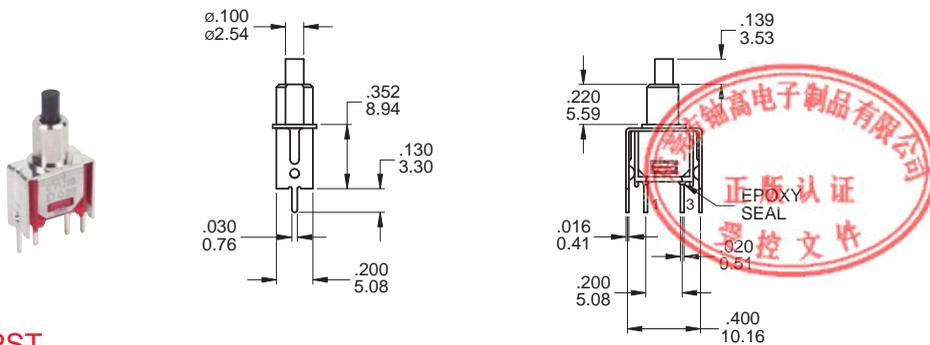
Part No. Shown : 8MS9P1B06VS2QE

8M Pushbutton Switches

VS2

ø.100
ø2.54

.139
3.53

.352
8.94

.130
3.30

.030
0.76

.200
5.08

.220
5.59

EPOXY SEAL

.016
0.41

.020
0.51

.100
2.54

.400
10.16

P.C. MOUNTING

.100
2.54

.400
10.16

ø.043
ø1.09
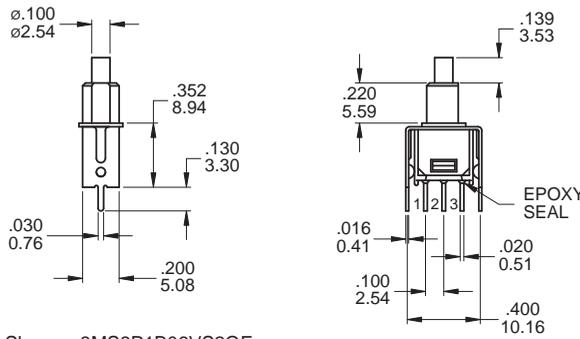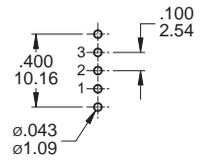
SPDT

Part No. Shown : 8MS8P1B06VS2QE

AP1

.370
9.40

.090
2.29

.150
3.81

.765
19.43

.450
11.43

.615
15.62

PANEL THICKNESS
.047 TO .125
1.19 TO 3.18
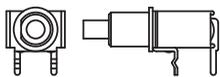
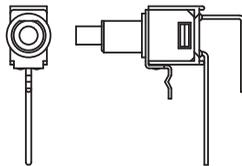PANEL MOUNTING

R.005
R0.13

.619
15.70

.500
12.70
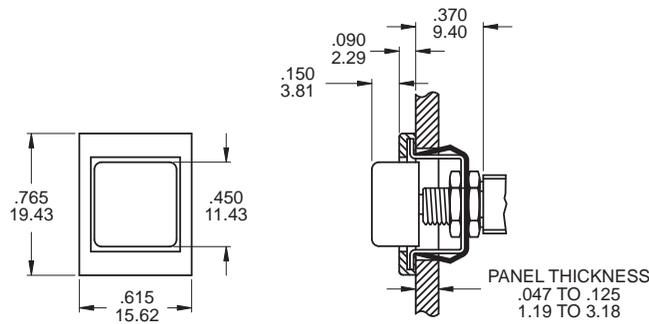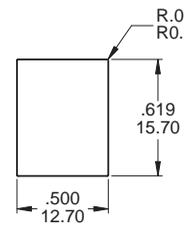
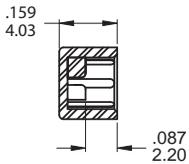**SPST**

Part No. Shown : 8MS9AP122M1QE

SNAP-IN TERMINATION OPTIONS

M6N

M7N

V2N
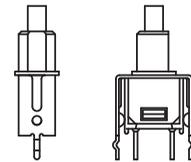
CAP OPTIONS

C1 For 8M Series ONLY

.159
4.03

ø.197
ø5.00

.087
2.20

C2 For 8A,8B Series ONLY

.159
4.03

ø.197
ø5.00

.102
2.60
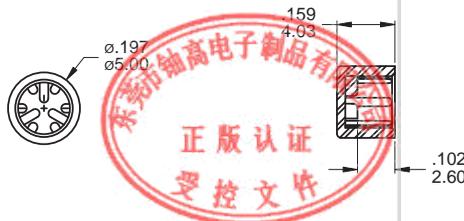
C3 For 8M Series B8,B9 Bushing ONLY

.159
4.03

ø.197
ø5.00

.102
2.60

C4 For 8M Series ONLY

.138
3.50

ø.293
ø7.45

.091
2.30
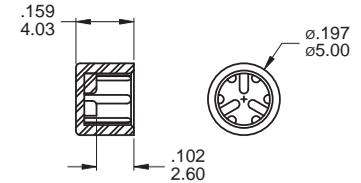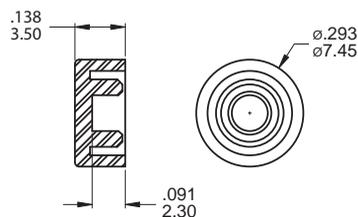
C5 For 8A,8B Series ONLY

.138
3.50

ø.293
ø7.45

.091
2.30
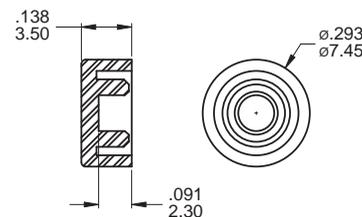
Cap Standard Color : White, Black, Red, Green

8M
Pushbutton Switches

115

8M Series
Sub-Miniature Pushbutton Switches

SPECIFICATIONS

RATING: 1A 250VAC, 3A 120VAC or 28VDC
ELECTRICAL LIFE: 6,000 cycles.
CONTACT RESISTANCE: R=20 mΩ max. ,Q=50 mΩ max.
INSULATION RESISTANCE: 1,000 MΩ min., 1000VDC
DIELECTRIC STRENGTH: 1,000 VAC for 1 Minute.
OPERATING TEMPERATURE: -30°C to 85°C.
FULL TRAVEL: 1.88±0.30mm
OPERATING TRAVEL: 1.34±0.25mm
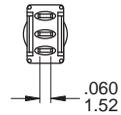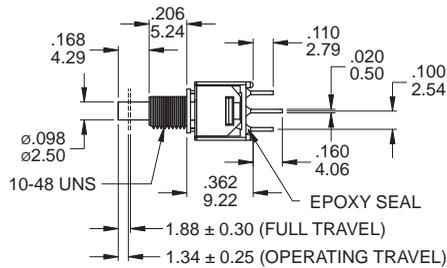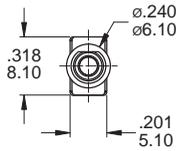**OPERATING FORCE:** 350±100g

MATERIALS

CASE: Diallyl phthalate(DAP) (UL94V-0).
PLUNGER: Nylon glass fiber.
BUSHING: Brass,nickel plated.
HOUSING: Stainless.
SWITCH SUPPORT: Brass.tin plated.
CONTACT/TERMINAL: Brass, with silver or gold plated. (See Page 117)

SWITCH FUNCTION

NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION	
			POS.1	POS.2
SP	Q28	8MSL	ON	ON

CONNECTED TERMINALS / SCHEMATIC	
POS.1	POS.2
2-1 — NC 1, 2 (COMM), 3 NO	2-3 — NC 1, 2 (COMM), 3 NO

POLE OPTIONS

M1

.318 / 8.10
ø.240 / ø6.10
.201 / 5.10

.168 / 4.29
.206 / 5.24
.110 / 2.79
.020 / 0.50
.100 / 2.54
ø.098 / ø2.50
10-48 UNS
.362 / 9.22
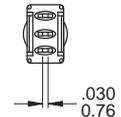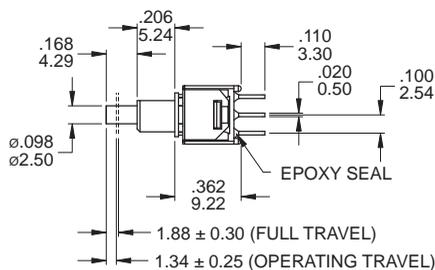.160 / 4.06
EPOXY SEAL
.060 / 1.52
1.88 ± 0.30 (FULL TRAVEL)
1.34 ± 0.25 (OPERATING TRAVEL)

SPDT
Part No. Shown : 8MSLP1B05M1QE

M2

.318 / 8.10
ø.240 / ø6.10
.201 / 5.10

.168 / 4.29
.206 / 5.24
.110 / 3.30
.020 / 0.50
.100 / 2.54
ø.098 / ø2.50
.362 / 9.22
EPOXY SEAL
.030 / 0.76
1.88 ± 0.30 (FULL TRAVEL)
1.34 ± 0.25 (OPERATING TRAVEL)
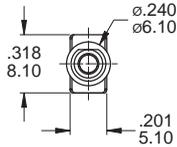
SPDT
Part No. Shown : 8MSLP1B06M2QE

BUSHING AND TERMINATION OPTIONS

B05 THD

ø.240 / ø6.10
.078 / 1.98
.206 / 5.24
.020 / 0.51
10-48 UNS
.023 / 0.60

B06 NON-THD

ø.240 / ø6.10
.078 / 1.98
.206 / 5.24
.020 / 0.51
.023 / 0.60

M1 Solder lug

.110 / 2.79
.060 / 1.53
.160 / 4.06
EPOXY SEAL
.030 / 0.76
.060 / 1.52
.020 / 0.51THK.

M2 PC Thru-hole

EPOXY SEAL
.130 / 3.30
.030 / 0.76
.020 / 0.51THK.

M5 Wire Wrap

.070 / 1.78
EPOXY SEAL
.600 / 15.24
.060 / 1.52
.030 / 0.76
.020 / 0.51THK.
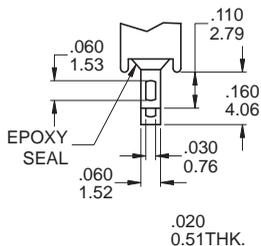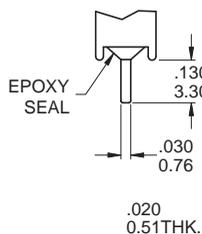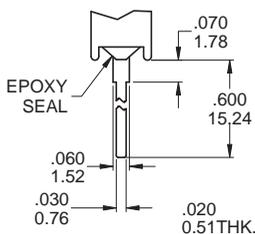
OTHER TERMINATION OPTIONS

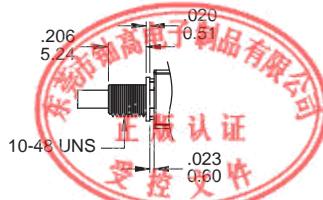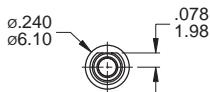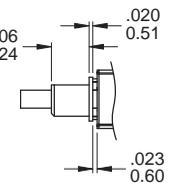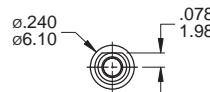|	
M6	Right angle P.C. Mount
M7	Right angle P.C. Mount
VS2	Vertical bracket P.C. Mount

8M(Lock)
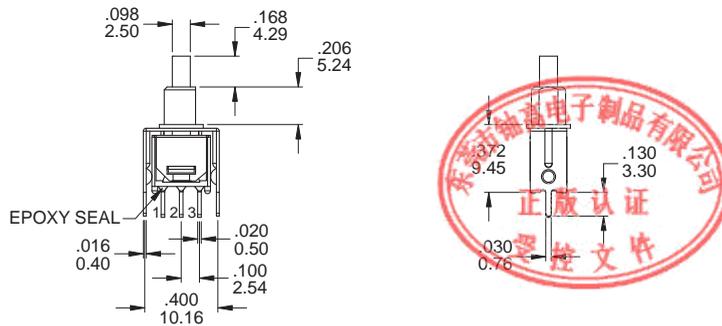Pushbutton Switches
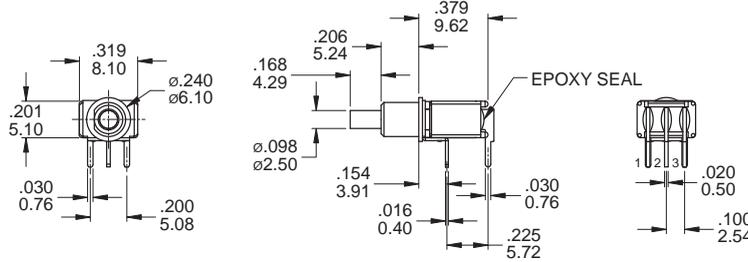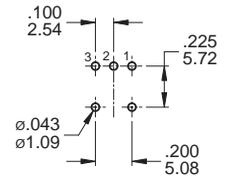
M6

SPDT

Part No. Shown : 8MSLP1B06M6QE
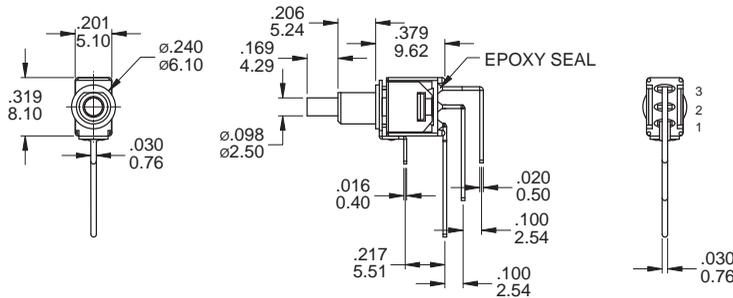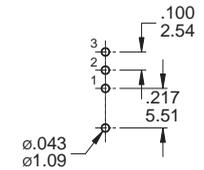
.319 / 8.10
.201 / 5.10
ø.240 / ø6.10
.030 / 0.76
.200 / 5.08
.168 / 4.29
.206 / 5.24
.379 / 9.62
EPOXY SEAL
ø.098 / ø2.50
.154 / 3.91
.016 / 0.40
.030 / 0.76
.225 / 5.72
1 2 3
.020 / 0.50
.100 / 2.54

P.C. MOUNTING
.100 / 2.54
3 2 1
.225 / 5.72
ø.043 / ø1.09
.200 / 5.08

M7

SPDT

Part No. Shown : 8MSLP1B06M7QE

.201 / 5.10
ø.240 / ø6.10
.319 / 8.10
.030 / 0.76
.169 / 4.29
.206 / 5.24
.379 / 9.62
EPOXY SEAL
ø.098 / ø2.50
.016 / 0.40
.020 / 0.50
.100 / 2.54
.217 / 5.51
.100 / 2.54
3 2 1
.030 / 0.76

P.C. MOUNTING
.100 / 2.54
3 2 1
.217 / 5.51
ø.043 / ø1.09

VS2

SPDT

Part No. Shown : 8MSLP1B06VS2QE

.098 / 2.50
.168 / 4.29
.206 / 5.24
EPOXY SEAL
.016 / 0.40
1 2 3
.020 / 0.50
.100 / 2.54
.400 / 10.16
.372 / 9.45
.130 / 3.30
.030 / 0.76

P.C. MOUNTING
.100 / 2.54
.400 / 10.16
3 2 1
ø.043 / ø1.09
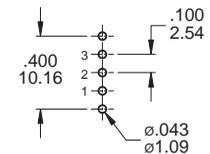
CONTACT MATERIAL OPTIONS

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

SOLDERING PROCESSES

MANUAL SOLDERING: Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

WAVE SOLDERING: Recommended Soldering Temperature: 270 ± 5°C
Duration of Solder Immersion: Max 5 sec. (PCB is 1.6mm in thickness)