

Toggle Switches

Miniature









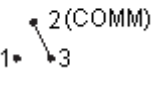
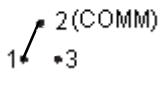
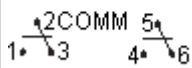
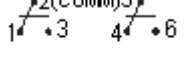
Specifications:

Contact rating	: Dependent upon contact material
Mechanical life	: 40,000 make and break cycles
Maximum contact resistance	: 10 mΩ
Initial voltage	: 2 to 4 V dc
Current	: 10 mA for both silver and gold plated contacts
Minimum Insulation resistance	: 1,000 MΩ
Dielectric strength	: 1,000 Vrms at sea level
Operating temperature	: -30°C to 85°C

Materials:

Case	: Diallylphthalate (DAP) (UL94v-0)
Actuator	: Brass, chrome plated
Bushing	: Brass, nickel plated
Housing	: Stainless steel
Switch support	: Brass, tin plated
Terminal/contact	: Silver or gold plated

Switch Function

Number of Poles	UL/CSA Model Numbers	Model Number	Switch Function			Connected Terminals/Schematic		
			Position 1	Position 2	Position 3	Position 1	Position 2	Position 3
								
SP	Q1111	1MS1	On	None	ON	2 to 3	N/A	2 to 1
	Q1112	1MS2			MOM			
	Q1113	1MS3	MOM	Off	ON		Open	
	Q1114	1MS4			MOM			
	Q1115	1MS5			On			
DP	Q1121	1MD1	On	None	ON	2 to 3, 5 to 6	N/A	2 to 1, 5 to 4
	Q1122	1MD2			MOM			
	Q1123	1MD3	MOM	Off	ON		Open	
	Q1124	1MD4			MOM			
	Q1125	1MD5			On			

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Switch Function

Number of Poles	UL/CSA Model Numbers	Model Number	Switch Function			Connected Terminals/Schematic						
			Position 1	Position 2	Position 3	Position 1	Position 2	Position 3				
DP	Q1126	1MD6	On	On	On	2 to 3, 5 to 6	2 to 3, 5 to 4	2 to 1, 5 to 4				
	Q1127	1MD7	MOM		MOM							
	Q1128	1MD8	On	None	On				2 to 3, 5 to 6, 8 to 9	N/A	2 to 1, 5 to 4, 8 to 7	
Q1131	1M31	MOM										
Q1132	1M32	On			Open							
Q1133	1M33	MOM										
Q1134	1M34	MOM			Off	MOM						
Q1135	1M35	On	None	On	2 to 3, 5 to 6, 8 to 9, 11 to 12	N/A		2 to 1, 5 to 4, 8 to 7, 11 to 10				
Q1141	1M41			MOM								
Q1142	1M42			On								
Q1143	1M43			On								
Q1144	1M44			MOM								
Q1145	1M45			On			On		On	2 to 3, 5 to 6, 8 to 9, 11 to 12	2 to 3, 5 to 4, 8 to 9, 11 to 10	2 to 1, 5 to 4, 8 to 7, 11 to 10
Q1146	1M46			MOM								
Q1147	1M47			MOM								
Q1148	1M48	On										

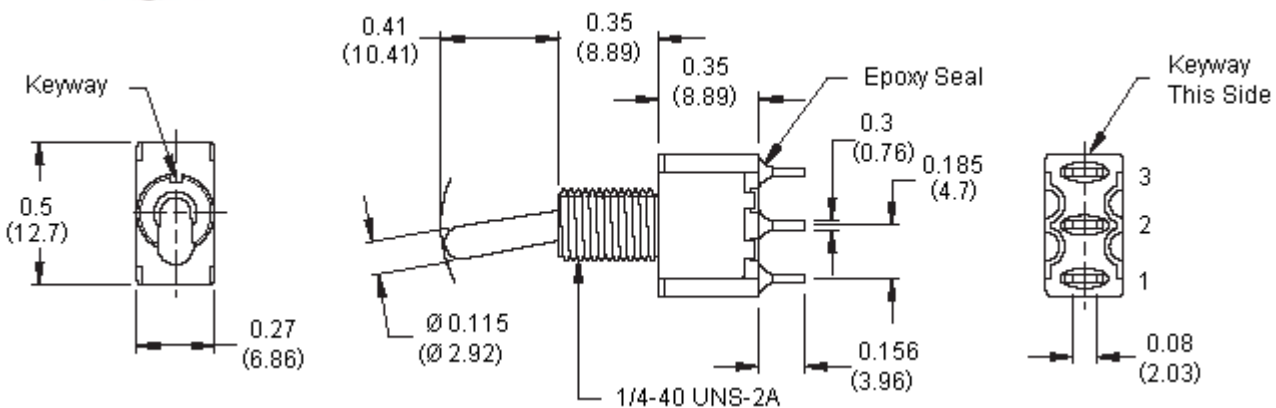
Toggle Switches



Miniature

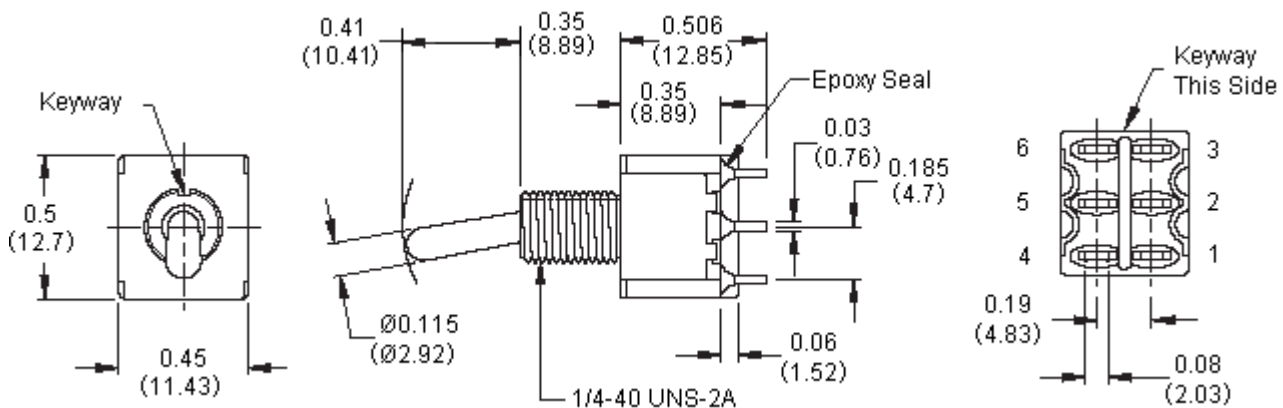
Pole Options

SPDT



Dimensions : Inches (Millimetres)

DPDT



Dimensions : Inches Millimetres)



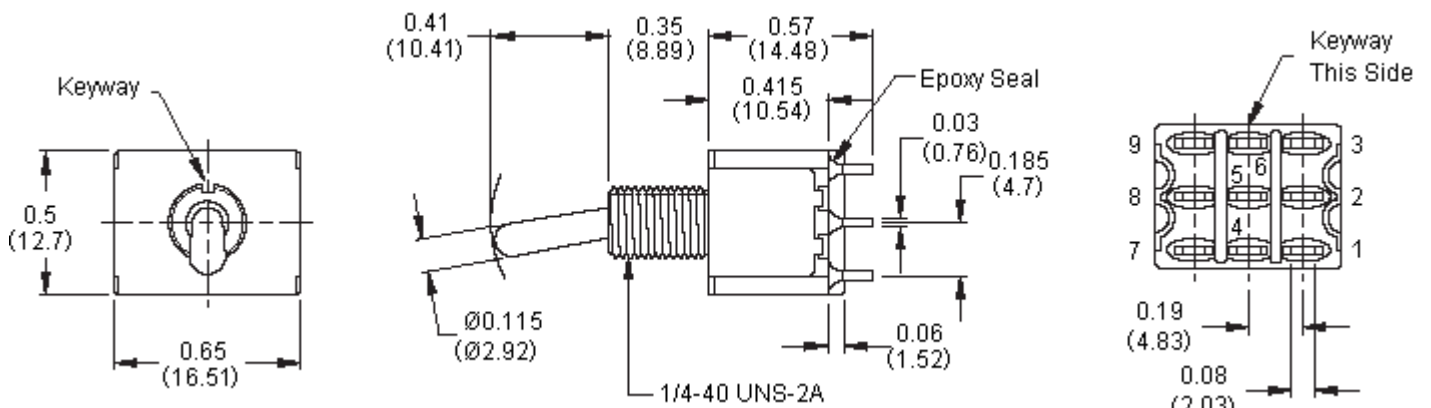
Toggle Switches



Miniature

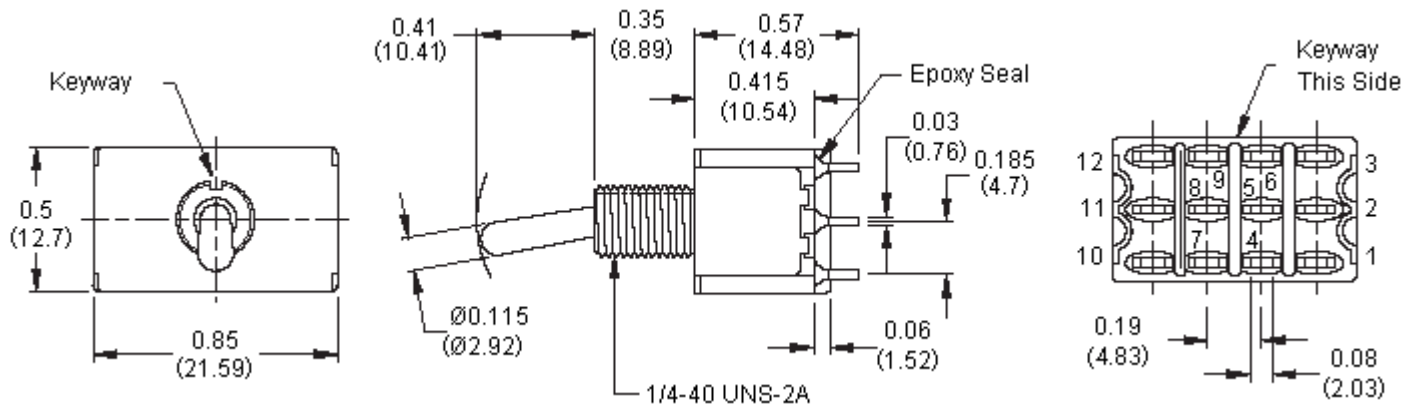
Pole Options

3PDT



Dimensions : Inches (Millimetres)

4PDT



Dimensions : Inches (Millimetres)



Toggle Switches

Miniature

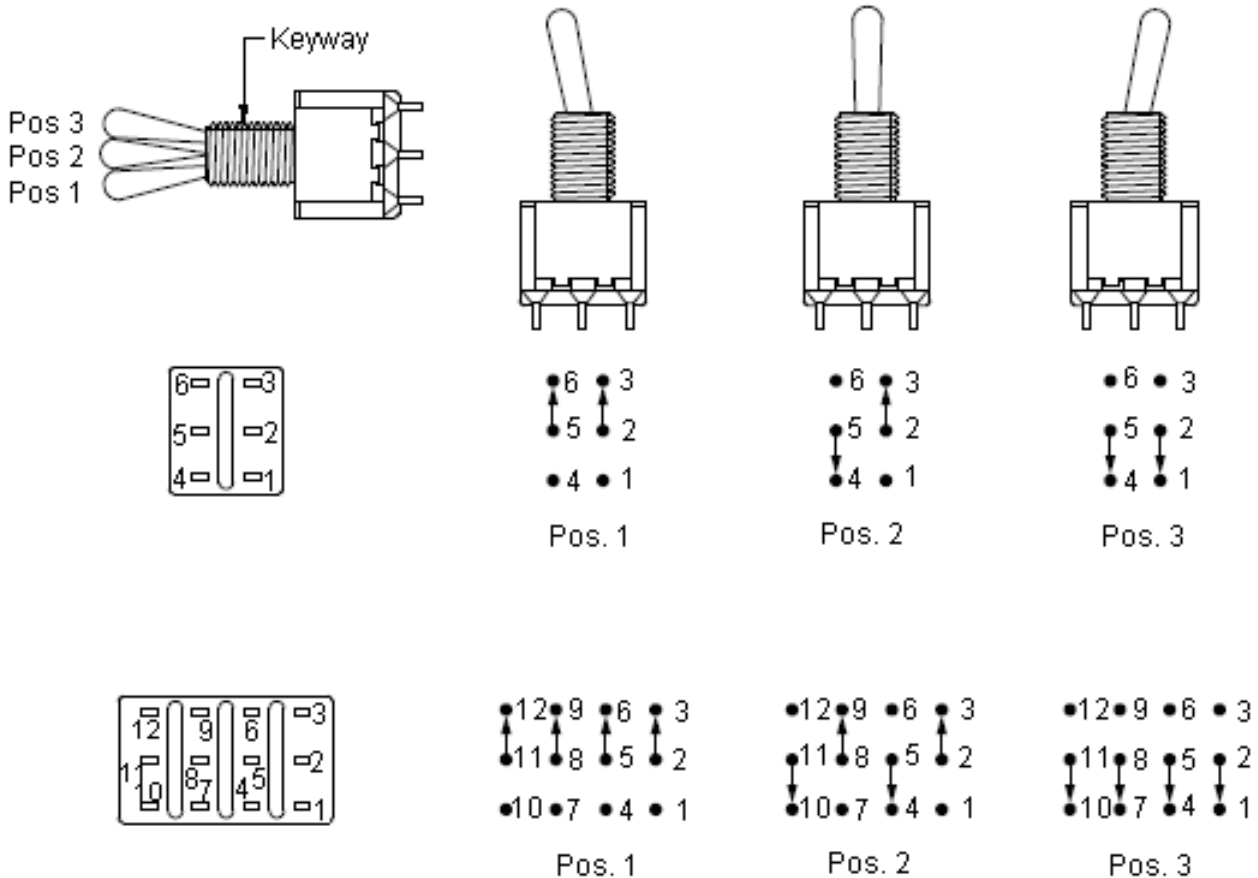
Single Pole, 3 Position

Model No.			
1M46	ON	ON	ON
Term. Comm.	2 to 3, 5 to 6 8 to 9, 11 to 12	2 to 3, 5 to 4 8 to 9, 11 to 10	2 to 1, 5 to 4 8 to 7, 11 to 10

Double Pole, 3 Position

Model No.			
1M46	ON	ON	ON
Term. Comm.	2 to 3, 5 to 6 8 to 9, 11 to 12	2 to 3, 5 to 4 8 to 9, 11 to 10	2 to 1, 5 to 4 8 to 7, 11 to 10

3-Way Wiring Diagram Schematics

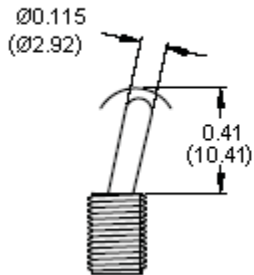


Toggle Switches

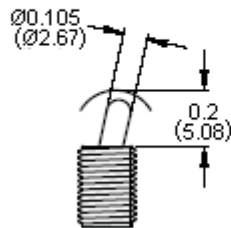
Miniature

Actuator Options

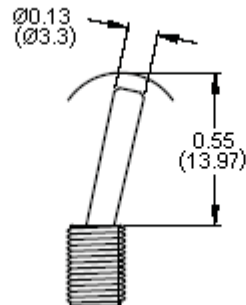
T1 STD



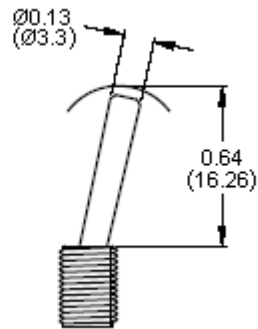
T2



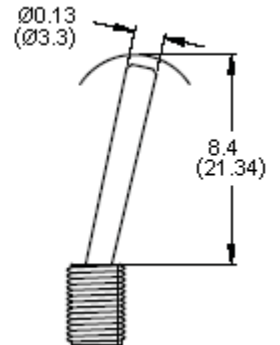
T3



T4



T5

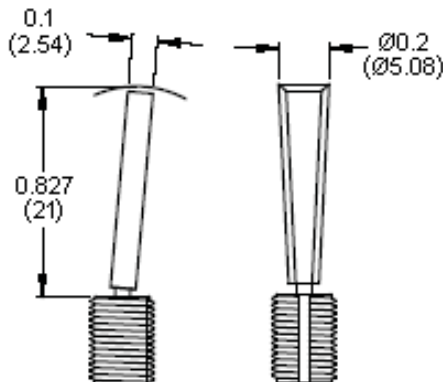
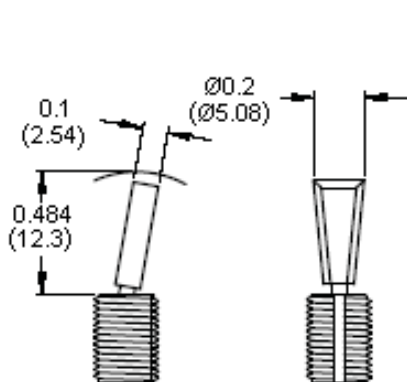


Note: T1 to T5 Actuator shown with standard B1 bushing :
 add .07 (1.78) for B3 Bushing ;
 Subtract 0.02 (0.51) for B6 Bushing ;
 Std for M1, M2 Terminal sub 0.016 (0.4) for M6, M7, VSX

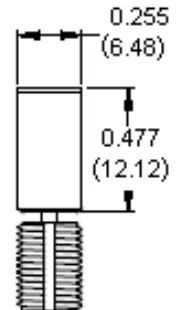
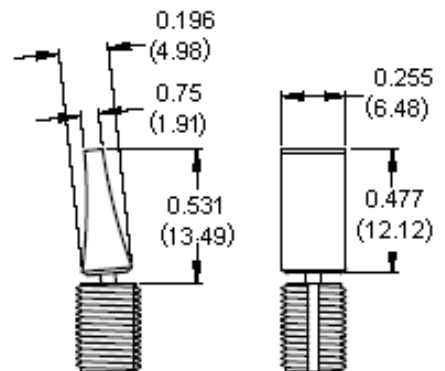
Dimensions : Inches (Millimetres)

T6 Flatted with anti-rotation

T61

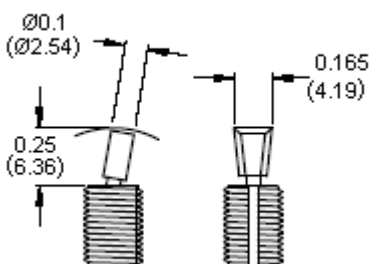


T62



Dimensions : Inches (Millimetres)

T63



Dimensions : Inches (Millimetres)

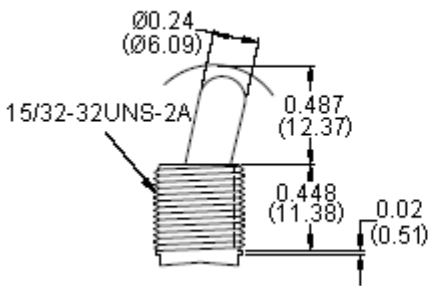
Note: T6, T6-1, T6-2, T63 use with B11, B12, B15, B16 bushing only

Toggle Switches



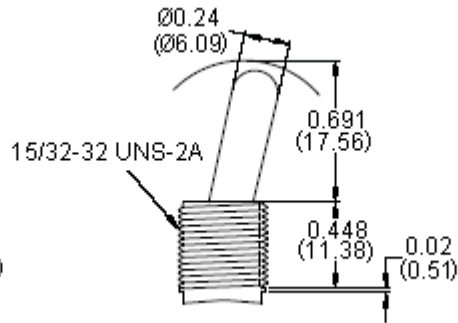
Miniature

T7



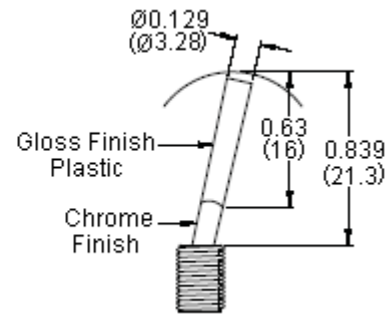
Use with B13 bushing
Use with B18, B20 the lever is anti-rotation and the size of lever is 13 mm

T8



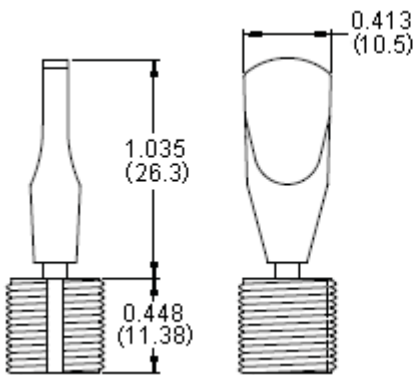
Use with B13 bushing
Use with B18, B20 the lever is anti-rotation and the size of lever is 18 mm

T9



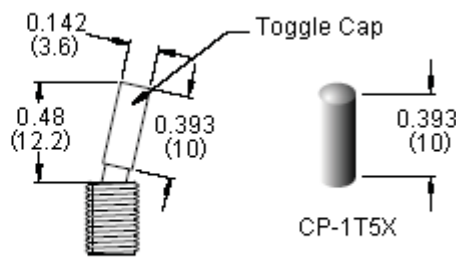
Dimensions : Inches (Millimetres)
B1/B2 bushing std
with black and red colour only (std).

TA Plastic Black



Use with B18 bushing only

T11



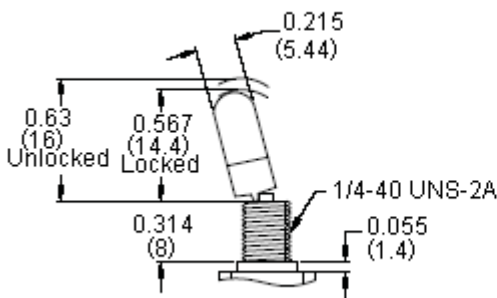
Note: T11 Actuator shown with standard B1 bushing;
Add 0.07 (1.78) for B3 bushing;
Subtract 0.02 (0.51) for B6 bushing.
Std for M1.M2 Terminal sub. 0.016 (0.4) for M6.M7.VSX

Dimensions : Inches (Millimetres)

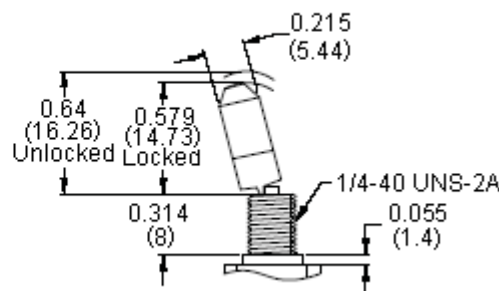
Plastic No. Colour :

Item No	Colour
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

TL1B25



TL2B25

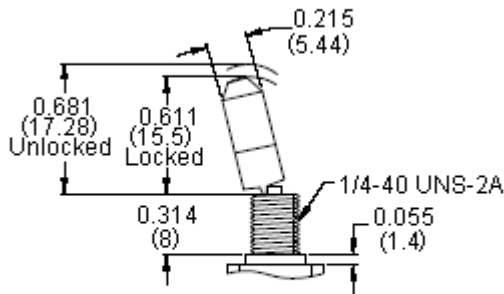


Dimensions : Inches (Millimetres)

Toggle Switches

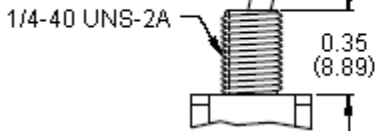
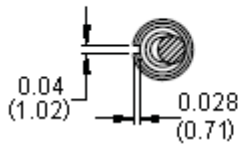
Miniature

TL3B25

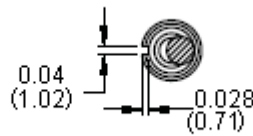


Dimensions : Inches (Millimetres)

B1 THD STD B2 NON-THD

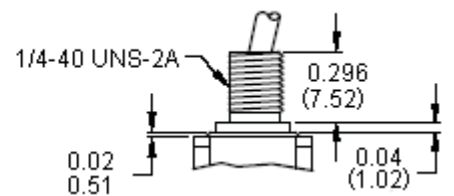
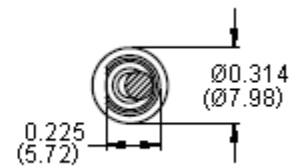


B3 THD B4 NON-THD



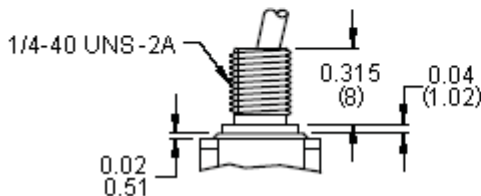
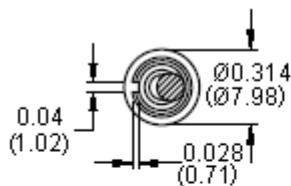
B4 is standard for M6, M7 and VS2 to 5 termination options.

B5 High Torque

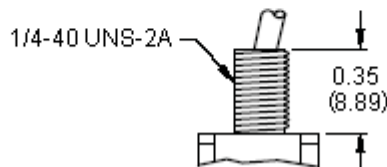
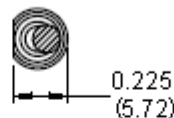


Dimensions : Inches (Millimetres)

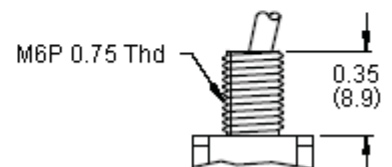
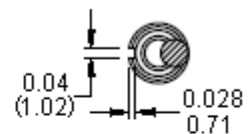
B6 High Torque



B7 Thd STD



B8 Metric Thd



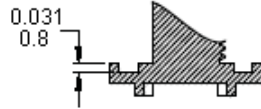
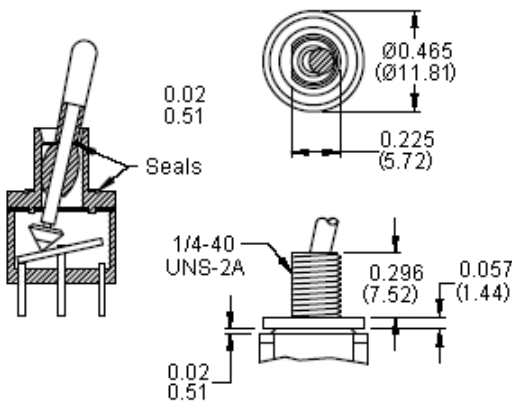
Dimensions : Inches (Millimetres)

Toggle Switches

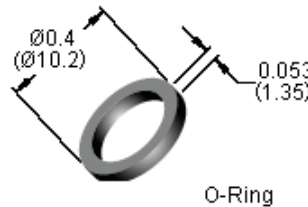
Miniature



B9 Splash Proof



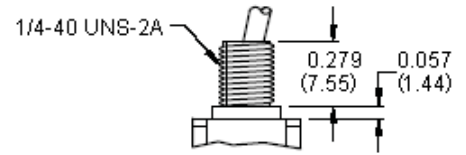
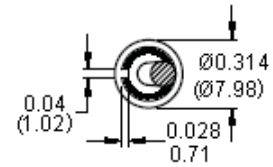
CP-1TEB



O-Ring

Supplied with B9 Bushing

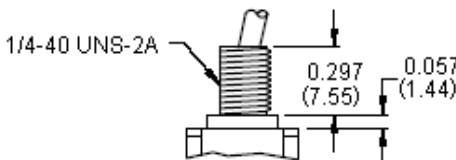
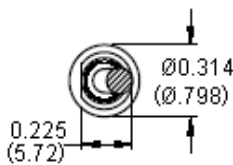
**B11 THD STD
B12 NON-THD**



Dimensions : Inches (Millimetres)

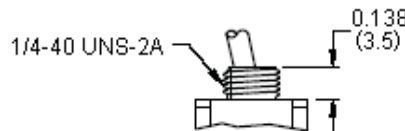
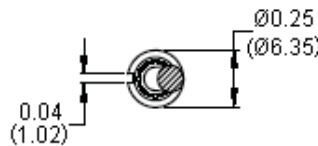
Use with T6 actuators only

**B15 THD STD
B16 NON-THD**

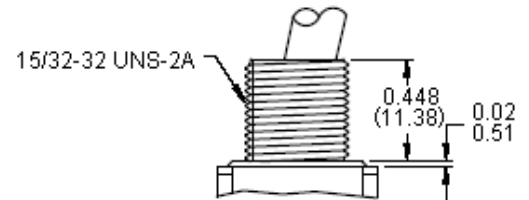
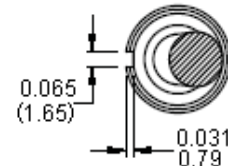


Use with T6 actuators only

B17



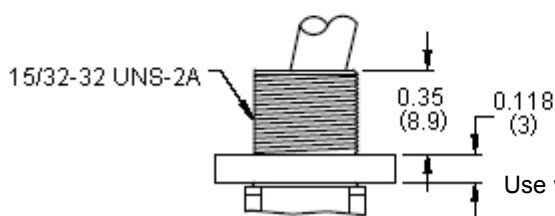
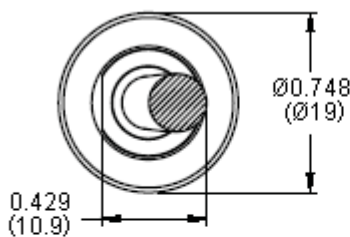
B13



Dimensions : Inches (Millimetres)

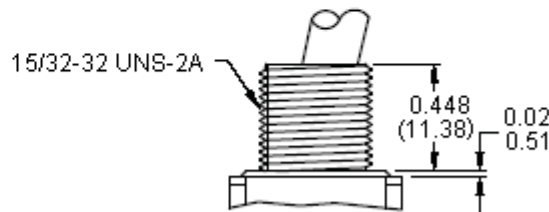
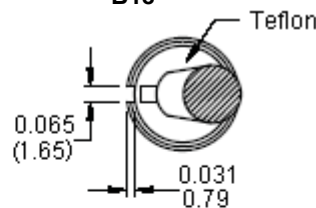
Use with T7, T8 actuators only
B13 Bear strength from top of actuator
up to 10 kg aside up to 15 kg

B14 Splash Proof



Use with T7, T8 and T10 actuators only with plastic
(Teflon) Insert

B18



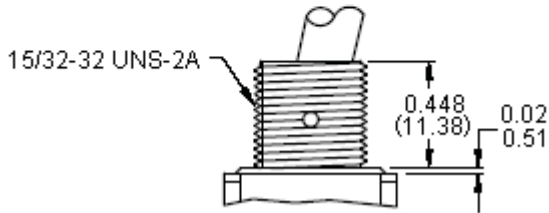
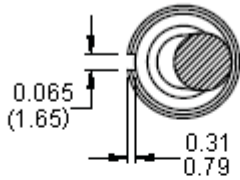
Dimensions : Inches (Millimetres)

Toggle Switches

Miniature



B20



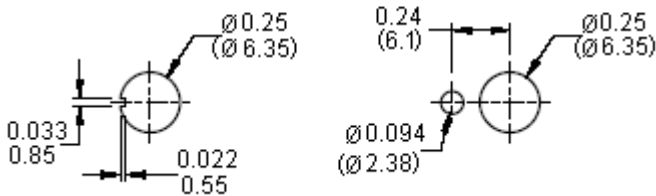
Dimensions : Inches (Millimetres)

Use with T7, T8 and T10 actuators only

B18, B20 Bear Strength from top of actuator up to 20 kg aside up to 15 kg

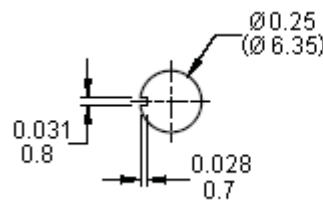
Panel Mounting

1/4 In Bushing

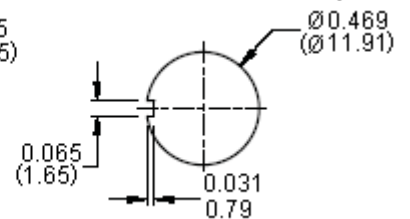


Dimensions : Inches (Millimetres)

Metric Bushing

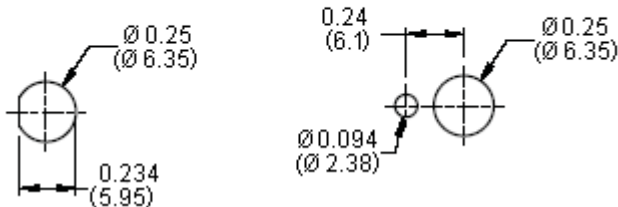


15/32 In Bushing



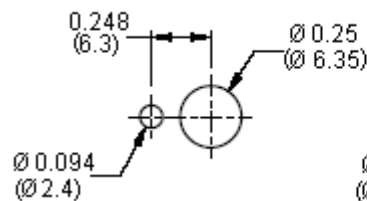
Dimensions : Inches (Millimetres)

1/4 In Bushing

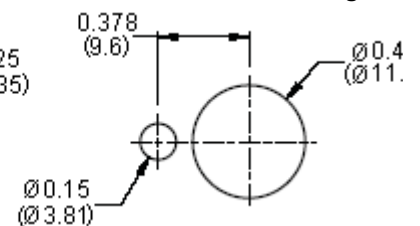


Dimensions : Inches (Millimetres)

Metric Bushing



15/32 In Bushing



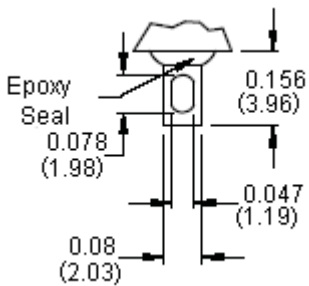
Dimensions : Inches (Millimetres)

Toggle Switches

Miniature

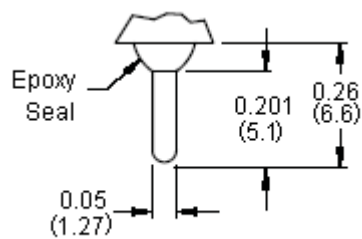
Termination Options

M1 Solder Lug



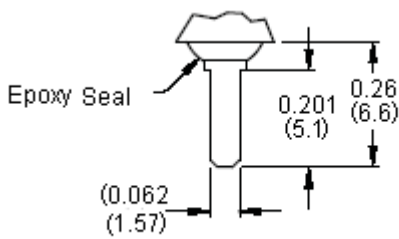
Dimensions : Inches (Millimetres)
0.03 (0.76) Thk

M2 PC Thru-Hole



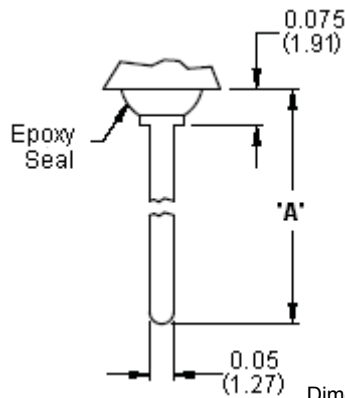
Dimensions : Inches (Millimetres)
0.03 (0.76) Thk

M5 Wire Wrap



Dimensions : Inches (Millimetres)
Thk 0.03 (0.76)

M3 Quick Connect



Thk 0.03 (0.76)

Dimensions : Inches (Millimetres)

Other Termination Options

- M6 Right Angle P.C. Mount
- M7 Right Angle P.C. Mount
- VS2 Vertical Bracket P.C. Mount
- VS3 Vertical Bracket P.C. Mount
- VS5 Vertical Bracket P.C. Mount

RE Mating Quick Connector
Amp P/N 60900-1

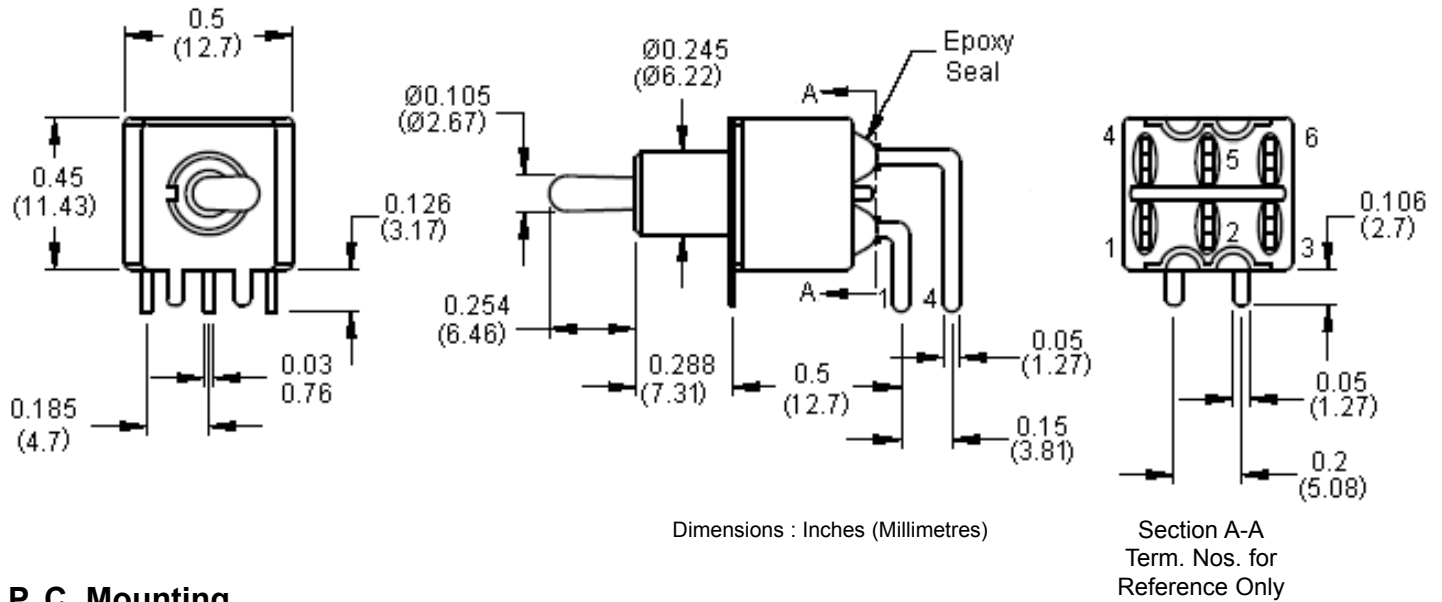
Option Code	Dimension 'A'
M5-1	0.736 (18.7)
M5-2	0.953 (24.2)
M5-3	0.415 (10.55)
M5-4	1.062 (26.97)

Toggle Switches

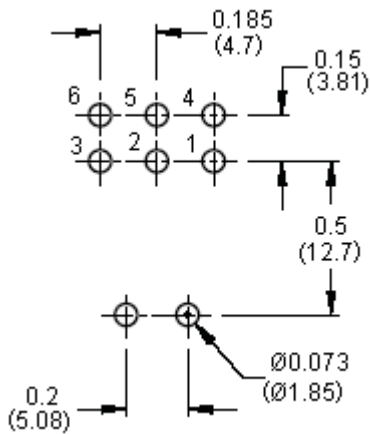


Miniature

M6



P. C. Mounting



Dimensions : Inches (Millimetres)

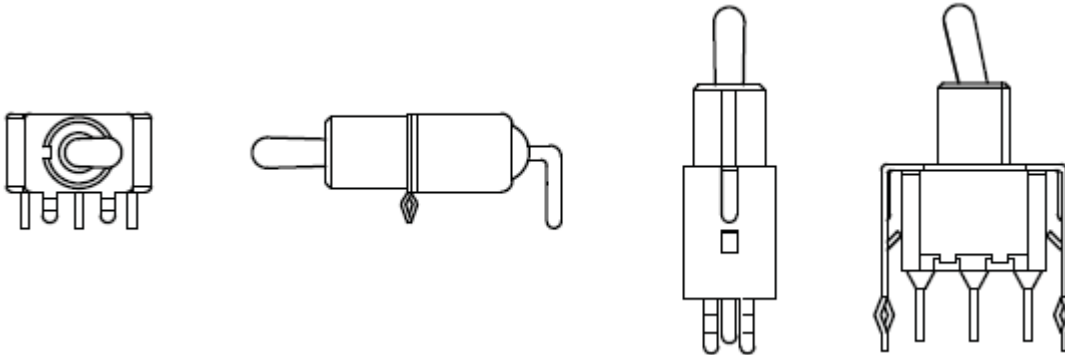


Toggle Switches



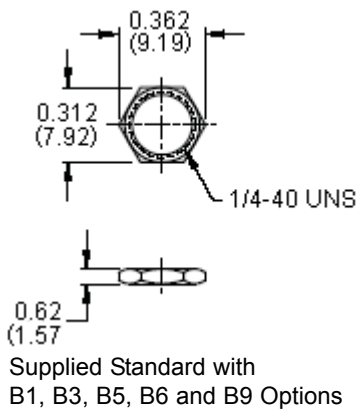
Miniature

SNAP-IN Termination Options

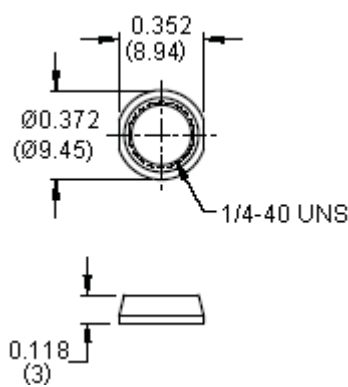


Hardware

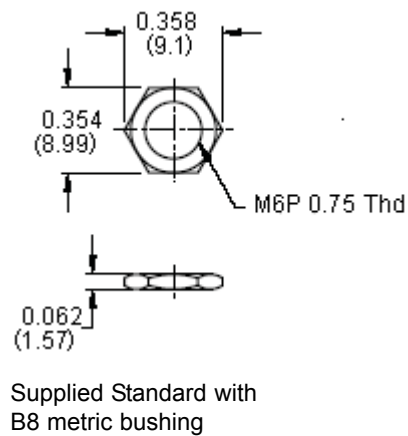
1/4 Nuts HDW2



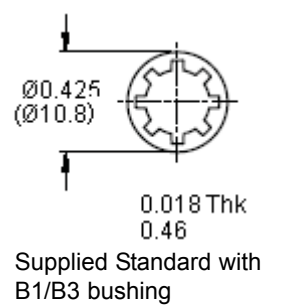
Dress Nut HDW3



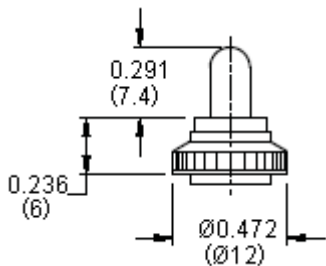
Metric Nut HDW6



Lock Washer HDW11

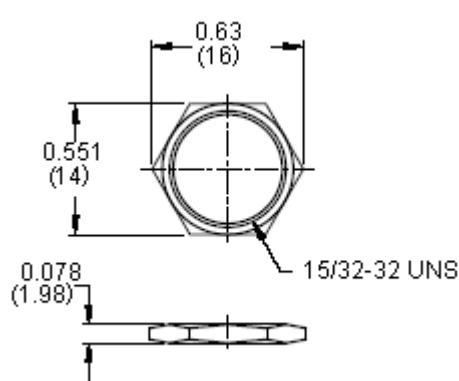


Optional Rubber Hood Sealing



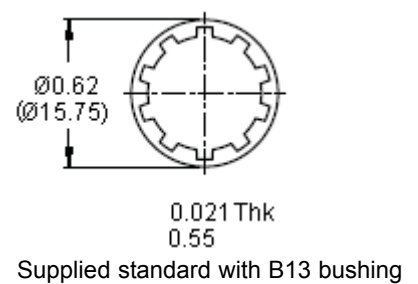
K1 = Metric
E1 = Inch (Std.)
for actuator T1, T2 and B1, B3, B5, B6 Bushing only

15/32 Nuts HDW4



Supplied standard with B13 bushing

Lock Washer HDW12



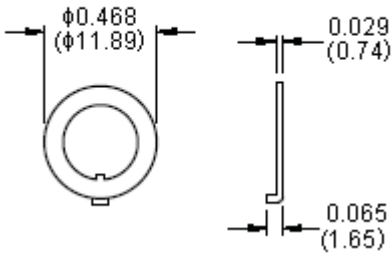
Dimensions : Inches (Millimetres)

Toggle Switches



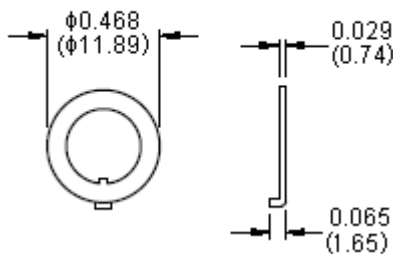
Miniature

HDW15



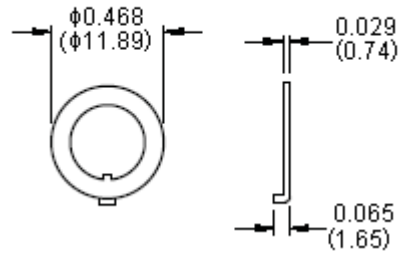
Locking ring supplied standard

HDW16



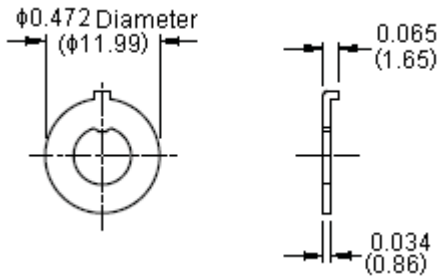
Locking ring supplied with B5 bushing

HDW17



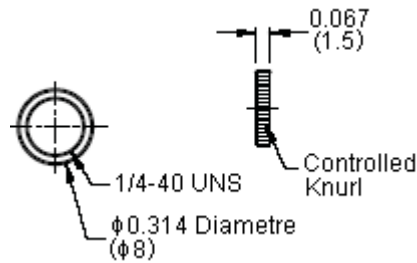
Locking ring supplied with B13, B18, B20 bushing

HDW18



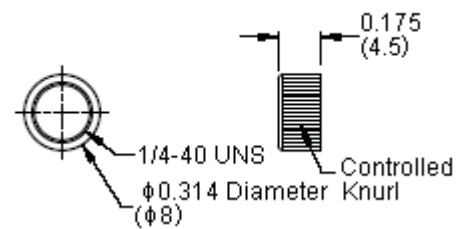
Locking ring supplied with B8 bushing

HDW19



Nu-1M18

HDW20

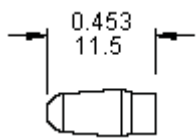


NU-1M24

Dimensions : Inches (Millimetres)

Optional Toggle Cap

CP-T1XX



Use with T1

Cap Colour :

Item No	Colour
1	White
2	Black (Std)
3	Red
5	Yellow
6	Green
7	Blue
9	Gray

Toggle Switches



Miniature

Contact Material Options

	Contact Plating	Terminal Plating	Ratings
Q	Silver	Q = Silver	5 Amperes with resistant load at 120 V ac or 28 V dc 2 Amps with resistant load at 250 V ac
S		S = Silver, pure-tin	
C	Gold over Silver	C = Gold over silver	
K		K = Gold over silver, pure-tin	
R	Gold	R = Gold	0.4 Volt-Amperes (VA) maximum at (20 V maximum (AC or DC)
G		G = Gold, pure-tin	

Soldering Process:

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

Wave soldering : Recommended soldering temperature : 260 ±5°C
Duration of solder immersion : Maximum 5 ±1 seconds. (PCB is 1.6 mm in thickness)

Soldering : Vapour Phase

Part Number Table

Description	Part Number
SWITCH, PCB, DPDT, ON-MOM	1MD2T2B4VS3RE
SWITCH, PCB, DPDT, MOM-OFF-MOM	1MD4T2B4VS3RE
SWITCH, PCB, DPDT, ON-OFF-ON	1MD3T2B4VS3RE
SWITCH, PCB, DPDT, ON-OFF-MOM	1MD5T2B4VS3RE
SWITCH, PCB, DPDT, ON-ON-ON	1MD6T2B4VS3RE
SWITCH, PCB, SPDT, ON-MOM	1MS2T2B4M6RE
SWITCH, PCB, SPDT, ON-OFF-MOM	1MS5T2B4M6RE
SWITCH, PCB, DPDT, ON-MOM	1MD2T2B4M6RE
SWITCH, PCB, DPDT, MOM-OFF-MOM	1MD4T2B4M6RE
SWITCH, PCB, DPDT, ON-OFF-MOM	1MD5T2B4M6RE
SWITCH, PCB, DPDT, ON-ON-ON	1MD6T2B4M6RE
SWITCH, PCB, SPDT, ON-MOM	1MS2T2B4M7RE
SWITCH, PCB, SPDT, MOM-OFF-MOM	1MS4T2B4M7RE
SWITCH, PCB, SPDT, ON-OFF-MOM	1MS5T2B4M7RE
SWITCH, PCB, DPDT, ON-MOM	1MD2T2B4M7RE

Toggle Switches



Miniature

Part Number Table

Description	Part Number
SWITCH, PCB, DPDT, MOM-OFF-MOM	1MD4T2B4M7RE
SWITCH, PCB, DPDT, ON-OFF-ON	1MD3T2B4M7RE
SWITCH, PCB, DPDT, ON-OFF-MOM	1MD5T2B4M7RE
SWITCH, PCB, DPDT, ON-ON-ON	1MD6T2B4M7RE
SWITCH, SOLDER TAG, SPDT, ON-MOM	1MS2T1B5M1QE
SWITCH, SOLDER TAG, SPDT, MOM-OFF-MOM	1MS4T1B5M1QE
SWITCH, SOLDER TAG, SPDT, ON-OFF-MOM	1MS5T1B5M1QE
SWITCH, SOLDER TAG, DPDT, ON-MOM	1MD2T1B5M1QE
SWITCH, SOLDER TAG, DPDT, MOM-OFF-MOM	1MD4T1B5M1QE
SWITCH, SOLDER TAG, DPDT, ON-OFF-MOM	1MD5T1B5M1QE
SWITCH, SOLDER TAG, DPDT, ON-ON-ON	1MD6T1B5M1QE
SWITCH, SOLDER TAG, 3PDT, ON-MOM	1M32T1B5M1QE
SWITCH, SOLDER TAG, 3PDT, ON-ON	1M31T1B5M1QE
SWITCH, SOLDER TAG, 3PDT, MOM-OFF-MOM	1M34T1B5M1QE
SWITCH, SOLDER TAG, 3PDT, ON-OFF-ON	1M33T1B5M1QE
SWITCH, SOLDER TAG, 3PDT, ON-OFF-MOM	1M35T1B5M1QE
SWITCH, SOLDER TAG, 4PDT, ON-MOM	1M42T1B5M1QE
SWITCH, SOLDER TAG, 4PDT, ON-ON	1M41T1B5M1QE
SWITCH, SOLDER TAG, 4PDT, MOM-OFF-MOM	1M44T1B5M1QE
SWITCH, SOLDER TAG, 4PDT, ON-OFF-ON	1M43T1B5M1QE
SWITCH, SOLDER TAG, 4PDT, ON-OFF-MOM	1M45T1B5M1QE
SWITCH, SOLDER TAG, 4PDT, ON-ON-ON	1M46T1B5M1QE
SWITCH, PCB SPDT VERT.	1MS5T2B4V2RE.
SWITCH, SPDT	1MS3T1B5M1QE.
SWITCH, DPDT	1MD3T1B5M1QE.
SWITCH, PCB, SPDT, VERT	1MS1T2B4V2RE
SWITCH, PCB, SPDT, VERT	1MS3T2B4V2RE
SWITCH, PCB, SPDT, VERT	1MS2T2B4V2RE
SWITCH, PCB, SPDT, VERT	1MS4T2B4V2RE
SWITCH, PCB, SPDT, VERT	1MS5T2B4V2RE

Toggle Switches

Miniature



Part Number Table

Description	Part Number
SWITCH, PCB, DPDT, VERT	1MD1T2B4V3RE
SWITCH, PCB, SPDT, HORIZ	1MS1T2B4M6RE
SWITCH, PCB, SPDT, HORIZ	1MS3T2B4M6RE
SWITCH, PCB, SPDT, HORIZ	1MS4T2B4M6RE
SWITCH, PCB, DPDT, HORIZ	1MD1T2B4M6RE
SWITCH, PCB, DPDT, HORIZ	1MD3T2B4M6RE
SWITCH, PCB, SPDT, HORIZ	1MS1T2B4M7RE
SWITCH, PCB, SPDT, HORIZ	1MS3T2B4M7RE
SWITCH, PCB, DPDT, HORIZ	1MD1T2B4M7RE
SWITCH, SPDT, 2.0A, 250V	1MS1T1B5M1QE
SWITCH, SPDT	1MS3T1B5M1QE

Toggle Switches

Miniature

Model No	Actuator	Bushing	Terminations	Contact Material	Seal
1 M S 1	T 2	B 4	V 2	R	E
Model No	Actuator	Bushing	Terminations	Contact Material	Seal
1MS1 SP On-None-On	T1 10.41 high	B1 8.89 high, keyway (thd std)	M1 Solder Lug	Q Silver	E EPOXY (std)
1MS2 SP On-None-Mom	T2 5.08 high	B2 8.89 high, keyway (non-thd)	M2 PC thru-hole	R Gold	N NO EPOXY
1MS3 SP On-Off-On	T3 13.97 high	B3 7.1 high, keyway (thd)	M3 Quick Connect	G Gold, pure-tin	
1MS4 SP Mom-Off-Mom	T4 16.26 high	B4 7.1 high, keyway (non-thd)	M5-1 18.70 high, wire wrap	S Silver, pure-tin	
1MS5 SP On-Off-Mom	T5 21.34 high	B5 7.52 high, flat (torque)	M5-2 24.20 high, wire wrap	C Gold over silver	
1MD1 DP On-None-On	T6 Flatted, anti-rotation	B6 8 high, keyway (torque)	M5-3 10.55 high, wire wrap	K Gold over silver, pure-tin	
1MD2 DP On-None-Mom	12.30 high	B7 8.89 high, flat (thd std)	M5-4 26.97 high, wire wrap		
1MD3 DP On-Off-On	T81 Flatted, anti-rotation	B8 8.89 high, keyway (metric thd)	M6 Right angle, PC thru-hole		
1MD4 DP Mom-Off-Mom	21.0 high	B9 7.52 high, flat (splash proof)	M6N Right angle, snap-in, PC thru-hole		
1MD5 DP On-Off-Mom	T82 Lower Handle with Cap	B11 7.55 high, keyway (thd std)	M7 Vertical right angle, PC thru-hole		
1MD6 DP On-On-On	13.49 high	B12 7.55 high, keyway (non-thd)	VS2 11.68 high, V-bracket		
1MD7 DP Mom-On-Mom	T83 Flatted, anti-rotation	B13 11.38 high, keyway (15 / 32 bushing)	V2N 11.68 high, snap-in V-bracket		
1MD8 DP On-On-Mom	6.35 high	B14 11.9 high, flat (splash proof)	VS3 16.00 high, V-bracket		
1M31 3P On-Non-On	T7 12.37 high, 15/32 bushing	B15 7.55 high, flat (thd std)	VS4 11.68 high, V-bracket		
1M32 3P On-Non-Mom	T8 17.56 high, 15/32 bushing	B16 7.55 high, flat (non-thd)	VS5 16.00 high, V-bracket		
1M33 3P On-Off-On	T9 Plastic, 21.3 high	B17 3.5 high, keyway			
1M34 3P Mom-Off-Mom	TA 26.30 high level handle with cap, 15/32 Bushing	B18 11.38 high, keyway (15 / 32 bushing)			
1M35 3P On-Off-Mom		B20 11.38 high, keyway (15 / 32 bushing)			
1M41 4P On-Non-On	T11 Plastic, 12.2 high	B25 8 high, keyway, locking lever (thd)			
1M42 4P On-Non-Mom	TL1 Locking lever 16 high	B26 8 high, keyway, locking lever (non-thd)			
1M43 4P On-Off-On	TL2 Locking lever 16.26 high				
1M44 4P Mom-Off-Mom	TL3 Locking lever 17.28 high				
1M45 4P On-Off-Mom					
1M48 4P On-On-On					
1M47 4P Mom-On-Mom					
1M48 4P On-On-Mom					

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