

Toggles

Product Selection Guide

Toggles							
Series	7000	Military	E	ET	T	GT	9000
Switch Type	Miniature	Miniature	Miniature	Subminiature	Subminiature	Ultraminiature	Power
Poles/Throws	SPDT, DPDT, 3PDT, 4PDT	SPDT, DPDT,	SPDT, DPDT, 3PDT	SPST, SPDT, DPDT	SPST, SPDT, DPDT	SPST, SPDT, DPST, DPDT	DPDT
Maximum Current Silver/Gold	5 Amps	5 Amps	7.5 Amps/ 5 Amps	3 Amps/ 2 Amps	3 Amps/ 2 Amps	0.4 VA	10 Amps
Process Sealed			•	•		•	
PCB Mount Options							
Vertical	•	•	•	•	•	•	•
Right Angle	•	•	•	•	•	•	
Vertical Right Angle	•	•	•	•	•	•	•
Surface Mount Options							
Vertical						•	
Right Angle				•		•	
Panel Mount Options							
Rear Mount	•	•	•		•		•
Termination Options							
PCB Thru-hole	•	•	•	•	•	•	•
Wire Wrap	•		•	•	•		
Solder Lug	•	•	•		•		•
Quick Connect	•		•				•
Other Available Options							
Support Brackets	•	•	•	•	•	•	•
Snap-in Retention	•		•	•			
ESD Protection	•		•	•	•		
Tape & Reel				•		•	
Bushing Options							
10-48					•		
1/4-40	•	•	•		•		•
15/32	•						•
M6P 0.75 (Metric)	•						
Page No.	G-3	G-17	G-22	G-30	G-37	G-43	G-48



Toggle

C&K

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

7000 Series Miniature Toggle Switches

Features/Benefits

- Multi-pole and multi-position
- Wide variety of actuator and termination options
- Epoxy terminal-seal compatible with bottom wash cleaning
- RoHS complaint models available



Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment



Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material: 5 AMPS @ 120 V AC or 28 V DC; 2 AMPS @ 250 V AC. See page G-16 for additional ratings.

ELECTRICAL LIFE: 7X01 and UX1 models: 100,000 make-and-break cycles at full load. All other models: 40,000 cycles.

CONTACT RESISTANCE: Below 10 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

For materials see page G-4.

NOTE: Any models supplied with P, S, R, Q, B or G contact material are RoHS compliant and compatible.

NOTE: Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages G-4 thru G-16. For additional options not shown in catalog, consult our Customer Service Center.

Switch Function	Actuator	Bushing	Contact Material	Seal	Actuator Color/Finish	KXX Actuator Color/Finish	Bushing Finish
7101 SP On-None-On 7103 SP On-Off-On 7105 SP Mom.-Off-Mom. 7107 SP On-Off-Mom. 7108 SP On-None-Mom. 7109 SP None-On-Mom. 7201 DP On-None-On 7203 DP On-Off-On 7205 DP Mom.-Off-Mom. 7207 DP On-Off-Mom. 7208 DP On-None-Mom. 7211 DP On-On-On 7213 DP On-On-Mom. 7215 DP Mom.-On-Mom. 7301 3P On-None-On 7303 3P On-Off-On 7305 3P Mom.-Off-Mom. 7308 3P On-None-Mom. 7401 4P On-None-On 7403 4P On-Off-On 7405 4P Mom.-Off-Mom. 7408 4P On-None-Mom. 7411 4P On-On-On 7413 4P On-On-Mom. 7415 4P Mom.-On-Mom.	M .200" high P3 Flatted, anti-rotation, .450" high S .420" high T .687" high, 15/32 bushing K2 Locking lever, .704" high K9 Locking lever, .704" high K12 Locking lever, .732" high K19 Locking lever, .732" high L .840" high L1 .640" high L1P Anti-rotation, .640" high L2 .550" high L2P Anti-rotation, .550" high L3 Plastic .940" inch L40 Lever handle without cap L41 .531" high lever handle with cap L42 .838" high lever handle with cap MP Anti-rotation, .200" high P1 Flatted, anti-rotation, .840" high P4 Flatted, anti-rotation, .250" high SP Anti-rotation, .420" high T1 .487" high, 15/32 bushing T1P Anti-rotation, .487" high, 15/32 bushing T2P Flatted, anti-rotation, .610" high, 15/32 bushing TP Anti-rotation, .687" high, 15/32 bushing	D .280 high, keyway H .296 high, flat Y .350 high, keyway NONE No bushing choice required CW Splashproof D8 .280" high, flat D9 .280" high, keyway H3 .315" high, keyway H4 8mm high, keyway Y1 .378" high, keyway Y3 8.9mm high, keyway Y4 .378" high, flat Y9 .350" high, keyway	B Gold P Gold, matte-tin Q Silver S Silver, matte-tin G Gold over silver R Gold over silver, matte-tin	E Epoxy I Epoxy potted base	NONE Bright chrome 2 Black 3 Red S Satin chrome	NONE Natural aluminum 2 Black anodized aluminum 3 Red anodized aluminum 7 Blue anodized aluminum	NONE Nickel on all bushings (except D8, satin chrome) 2 Black

Terminations

A Right angle, PC thru-hole	W .750" long, wire wrap
AV2 Vert. right angle, PC thru-hole	W1 .964" long, wire wrap
C PC Thru-hole	W3 .425" long, wire wrap
V3 .460 high, V-bracket	W4 1.062" long, wire wrap
Z Solder lug	W5 1.305" long, wire wrap
A2 Right angle, PC thru-hole	Z3 Quick connect
A3 Right angle, PC thru-hole	
A4 Right angle, PC thru-hole	
AW1 Right angle, extended, PC thru-hole	
AW4 Right angle, extended, PC thru-hole	
V2 .555" high, V-bracket	
V4 .630" high, V-bracket	
V6 .460" high, V-bracket	
V7 .630" high, V-bracket	
V8 .953" high, V-bracket	
V9 1.150" high, V-bracket	
V21 .555" high, snap-in V-bracket	
V31 .460" high, snap-in V-bracket	
V41 .630" high, snap-in V-bracket	
V71 .630" high, snap-in V-bracket	
V81 .953" high, snap-in V-bracket	

Note: UL/CSA models available, see pages G-4 & G-5.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



7000 Series
Miniature Toggle Switches

Materials

CASE: Glass filled nylon 6/6, flame retardant, heat stabilized, or diallyl phthalate (DAP) (UL 94V-0).
ACTUATOR: Brass, chrome plated.
BUSHING: Brass or zinc, nickel plated.
HOUSING: Stainless steel.
SWITCH SUPPORT: Brass or steel, tin plated.
END CONTACTS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Coin silver, silver plated.
See page G-15 for additional contact materials.

CENTER CONTACTS & ALL TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See above for additional contact materials.
TERMINAL SEAL: Epoxy.
HARDWARE: Nut & Locking Ring: Brass, nickel plated.
Lockwasher: Steel, nickel plated.
NOTE: Materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

SWITCH FUNCTION

Table with 10 columns: NO. POLES, MODEL NO., UL/CSA** MODEL NO., POS. 1 KEYWAY, POS. 2 KEYWAY, POS. 3 KEYWAY, POS. 1 KEYWAY, POS. 2 KEYWAY, POS. 3 KEYWAY, SCHEMATIC. Rows include SP (7101-7109) and DP (7201-7215*) switches.

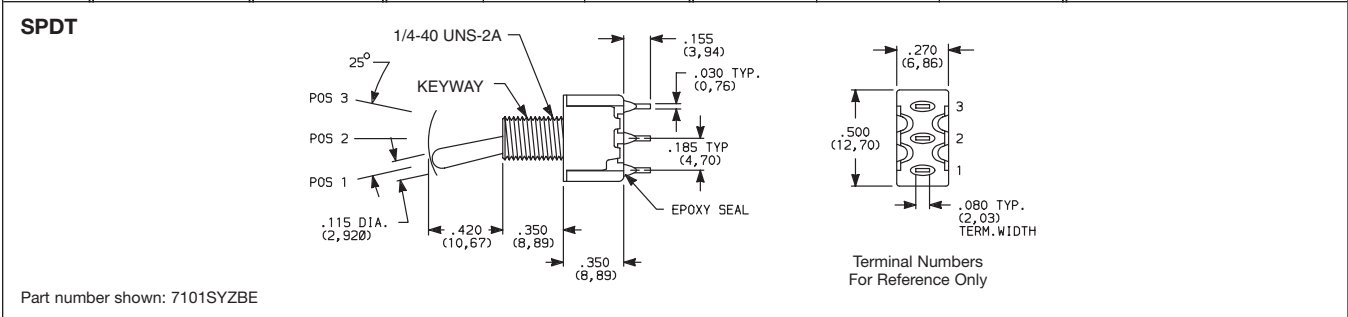
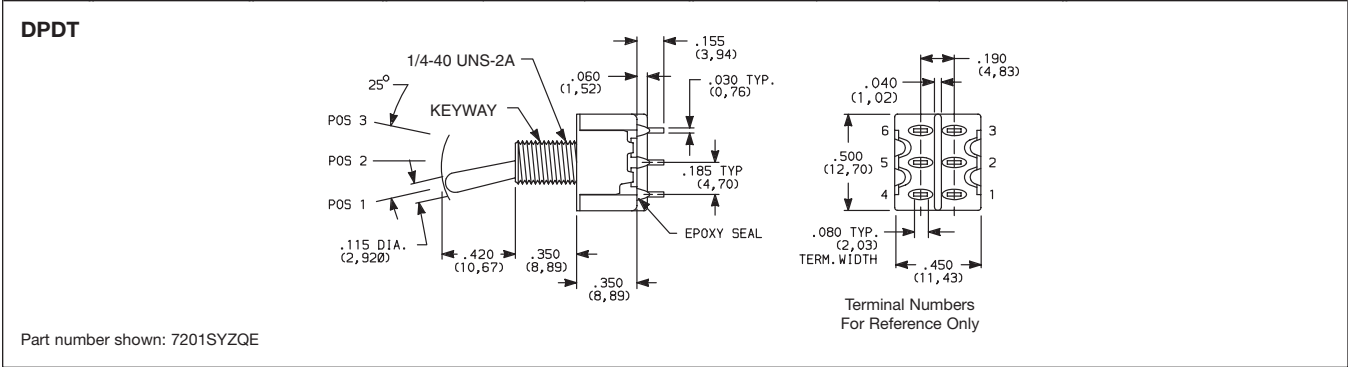


Table with 10 columns: NO. POLES, MODEL NO., UL/CSA** MODEL NO., POS. 1 KEYWAY, POS. 2 KEYWAY, POS. 3 KEYWAY, POS. 1 KEYWAY, POS. 2 KEYWAY, POS. 3 KEYWAY, SCHEMATIC. Rows include DP (7201-7215*) switches.



MOM. = Momentary
** U11-U415 model nos. with all options when ordered with G, L, R, M, Q or S contact material.
* Wiring for 3-way switch, see Section O.



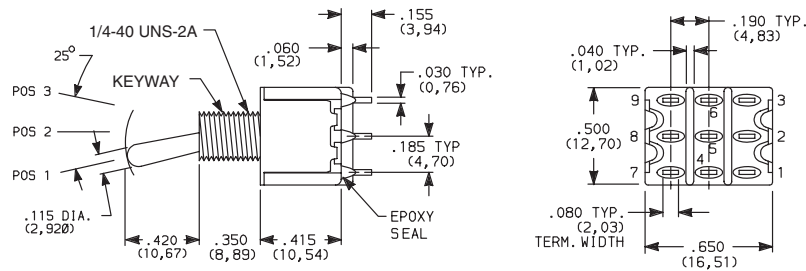
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

7000 Series Miniature Toggle Switches

SWITCH FUNCTION

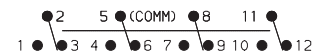
NO. POLES	MODEL NO.	UL/CSA** MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
			POS. 1 	POS. 2 	POS. 3 	POS. 1 	POS. 2 	POS. 3 	
3P	7301	U31	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	
	7303	U33	ON	OFF	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	
	7305	U35	MOM.	OFF	MOM.	2-3,5-6,8-9	OPEN	2-1,5-4,8-7	
	7307	U37	ON	OFF	MOM.	2-3,5-6,8-9	N/A	2-1,5-4,8-7	
	7308	U38	ON	NONE	MOM.	2-3,5-6,8-9	N/A	2-1,5-4,8-7	

3PDT

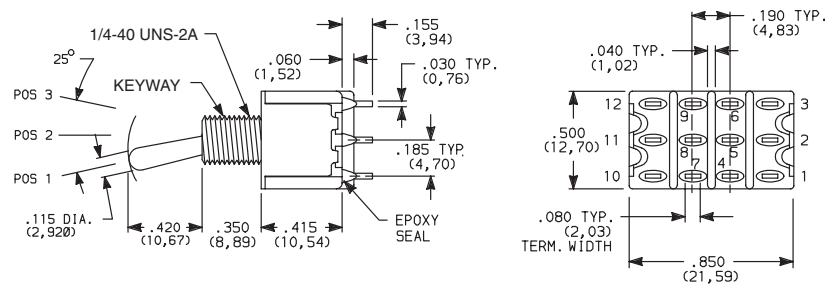


Part number shown: 7301SYZQE

Terminal Numbers
For Reference Only

4P	7401	U41	ON	NONE	ON	2-3,5-6,8-9,11-12	N/A	2-1,5-4,8-7,11-10	
	7403	U43	ON	OFF	ON	2-3,5-6,8-9,11-12	N/A	2-1,5-4,8-7,11-10	
	7405	U45	MOM.	OFF	MOM.	2-3,5-6,8-9,11-12	OPEN	2-1,5-4,8-7,11-10	
	7408	U48	ON	NONE	MOM.	2-3,5-6,8-9,11-12	N/A	2-1,5-4,8-7,11-10	
	7411*	U411*	ON	ON	ON	2-3,5-6,8-9,11-12	2-3,5-4,8-9,11-10	2-1,5-4,8-7,11-10	
	7413*	U413*	ON	ON	MOM.	2-3,5-6,8-9,11-12	2-3,5-4,8-9,11-10	2-1,5-4,8-7,11-10	
	7415*	U415*	MOM.	ON	MOM.				4PDT

4PDT



Part number shown: 7401SYZQE

Terminal Numbers
For Reference Only

MOM. = Momentary

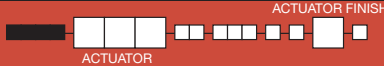
* Wiring for 3-way switch, see Section O.

** U11-U415 model nos.

 all options when ordered with G, L, M, Q, R or S contact material.

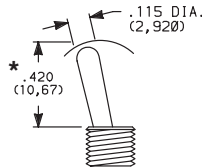
7000 Series Miniature Toggle Switches

ACTUATOR



S .420" HIGH ¹

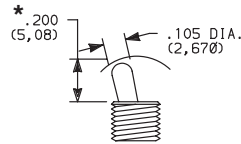
SP ANTIROTATION, .420" HIGH ^{2,3}



S actuator standard when ordered with C, W-W5, Z & Z3 terminations. Caps are available separately, see page G-16.

M .200" HIGH ¹

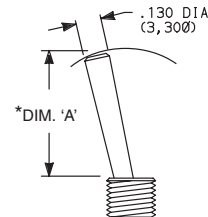
MP ANTIROTATION, .200" HIGH ^{2,3}



M actuator standard when ordered with all terminations except C, W-W5, Z & Z3. Caps are available separately, see page G-16.

L, L1, L2 .840", .640", .550" HIGH ¹

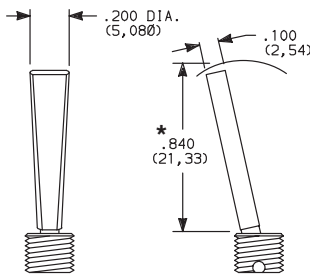
L1P, L2P ANTIROTATION, .840", .640", .550" HIGH ^{2,3}



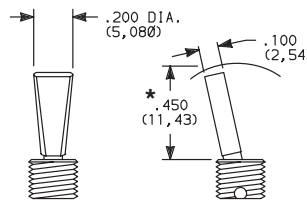
OPTION CODE	DIM 'A'
L	.840 (21,34)
L1, L1P	.640 (16,26)
L2, L2P	.550 (13,97)

Caps are available separately, see page G-16.

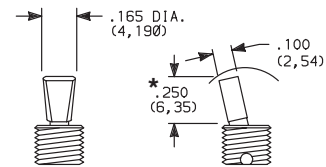
P1 FLATTED WITH ANTIROTATION, .840" HIGH ^{2,3}



P3 FLATTED WITH ANTIROTATION, .450" HIGH ^{2,3}



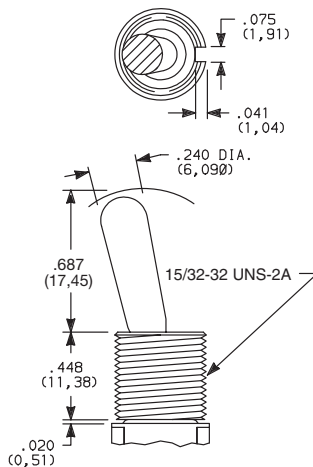
P4 FLATTED WITH ANTIROTATION, .250" HIGH ^{2,3}



Dress nut part number 709901201 supplied standard with threaded bushing. (Part number 709903201 with metric threaded bushings.)

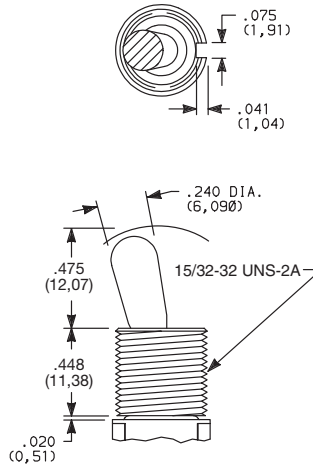
T .675 (17,15) HIGH ^{1,2}

TP ANTIROTATION, .675 (17,15) HIGH, 15/32 BUSHING ^{1,2,3}

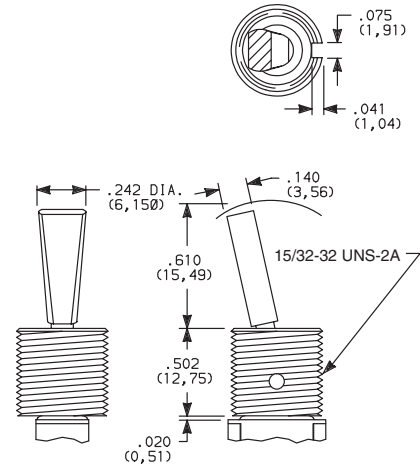


T1 .475 (12,07) HIGH ^{1,2}

T1P ANTIROTATION, .475 (12,07) HIGH, 15/32 BUSHING ^{1,2,3}



T2P FLATTED, ANTIROTATION, .610" HIGH, 15/32 BUSHING ^{1,2,3}



Bushing option code not required unless CW splashproof bushing ordered. TP & T1P actuators not available with CW splashproof bushing. All TXX actuators not available on single pole models with A-A4, AW1-AW4 terminations.

Bushing option code not required. T2P actuator not available with CW splashproof bushing or single pole models with A-A4, AW1-AW4 terminations.

OPTION CODE	ACTUATOR FINISH
NONE	BRIGHT CHROME-With Nickel Plated Bushing
2	BLACK
S	SATIN CHROME

NOTE: Black hardware is supplied when either black actuators or bushings are specified. For additional hardware, see Section O.

- 1 L, L1, L2, M, S & TXX actuators not available with Y1 bushing.
 - 2 L1P, L2P, MP, P1, P3, P4, SP & TXX actuators not available with D8 & H4 bushing.
 - 3 Antirotation: Provides anti-'push-in' feature on actuator.
- * Add .070 (1,78) for D, D8 & D9 bushings, subtract .020 (0,51) for H3 bushing.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

www.ck-components.com

7000 Series Miniature Toggle Switches

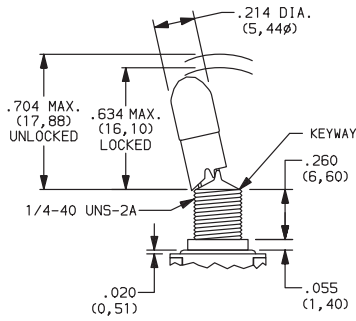
ACTUATOR

ACTUATOR FINISH/COLOR

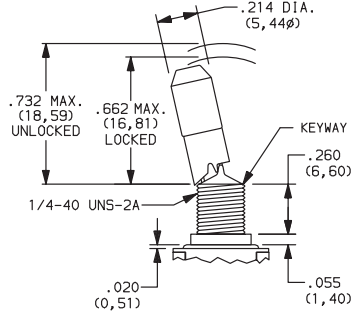
ACTUATOR

- K2** LOCKING LEVER, .704" HIGH (threaded)
K9 LOCKING LEVER, .704" HIGH (unthreaded)

- K12** LOCKING LEVER, .732" HIGH (threaded)
K19 LOCKING LEVER, .732" HIGH (unthreaded)



Replaces K, K8



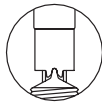
Replaces K1, K18

OPTION CODE	ACTUATOR CAP FINISH
NONE	NATURAL ALUMINUM-With Nickel Plated Bushing
2	BLACK ANODIZED ALUMINUM
3	RED ANODIZED ALUMINUM
7	BLUE ANODIZED ALUMINUM

Locking Positions



-01 Models
2 Position lock



-03 & -11 Models
3 Position lock



-05, -09 & -15 Models
1 Position lock



-07 & -13 Models
2 Position lock



-08 Models
1 Position lock

NOTE: To prevent accidental actuation, toggle must be lifted before being actuated. When released, toggle will lock in place. Overtightening mounting nut may cause actuator to bind.

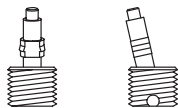
Locking levers supplied with bushing shown.

Bushing option code not required unless CW splashproof bushing ordered.

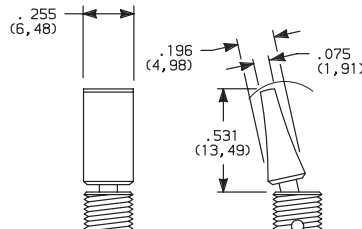
- L40** LEVER HANDLE WITHOUT CAP

- L41** PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4810

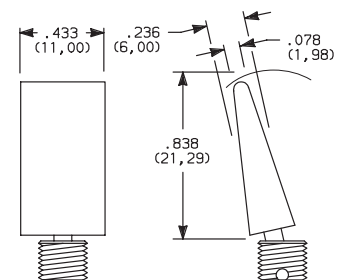
- L42** PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4811



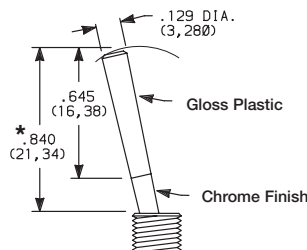
No color choice required



Finish: Matte (L41 & L42).



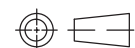
- L3** PLASTIC .940" HIGH



OPTION CODE	PLASTIC ACTUATOR COLORS
NONE	No Actuator Color (L40 option)
2	BLACK
3	RED

* Add .070 (1,78) for D, D8 & D9 bushings, subtract .020 (0,51) for H3 bushing.

NOTE: Lever handle for L41 & L42 actuators supplied, but not installed. For interchangeability, order L40 actuator option and lever handles separately, see page G-16. L4X actuators not available with H4, Y1, Y4 bushings. Antirotation: Provides anti-'push-in' feature on actuator.



Third Angle
Projection

C&K

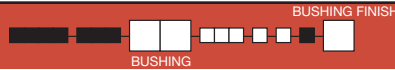
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



Toggle

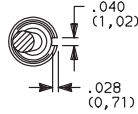
7000 Series Miniature Toggle Switches

BUSHING



Y .350" HIGH, THREADED, KEYWAY

Y9 .350" HIGH, UNTHREADED, KEYWAY



NONE

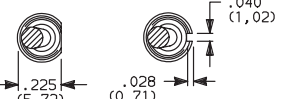
NO BUSHING

No bushing choice required with KXX, TXX actuators. (exception: Specify CW if splashproof bushing desired).

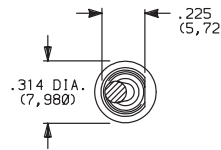
D .280" HIGH, THREADED, KEYWAY

D8 .280" HIGH, UNTHREADED, FLAT³

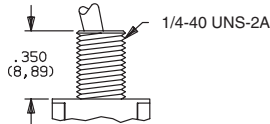
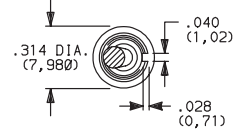
D9 .280" HIGH, UNTHREADED, KEYWAY



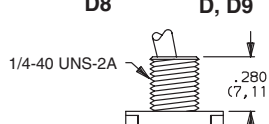
H .296" HIGH, FLAT THREADED, HIGH TORQUE^{1,2}



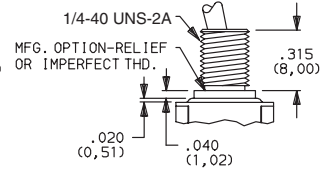
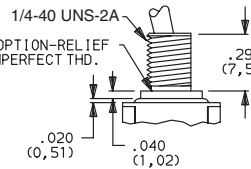
H3 .315" HIGH, KEYWAY THREADED, HIGH TORQUE^{1,2}



Y bushing standard with C, W-W5, Z or Z3 terminations.

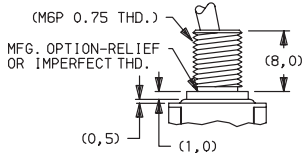
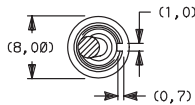


D9 bushing standard with all terminations except C, W-W5, Z or Z3. Add .070 (1, 78) to all actuators lengths with D, D8 & D9 bushings.

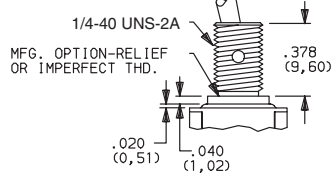
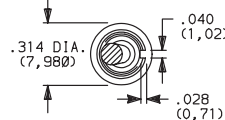


Subtract .020 (0, 51) from all actuator lengths for H3 bushing.

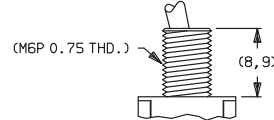
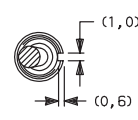
H4 8mm HIGH, KEYWAY, THREADED, METRIC HIGH TORQUE^{1,2,3}



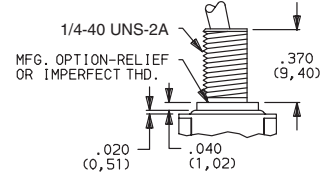
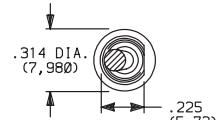
Y1 .378" HIGH, KEYWAY, THREADED, HIGH TORQUE^{1,2,4}



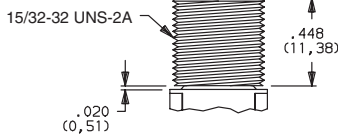
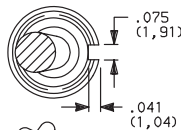
Y3 8.9mm HIGH, KEYWAY, THREADED, METRIC



Y4 .378" HIGH, FLAT, THREADED, HIGH TORQUE^{1,2,5}

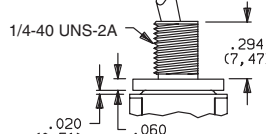
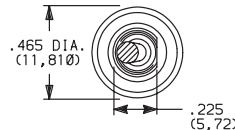


CW THREADED, SPLASHPROOF^{1,2}
For T & T1 actuators.



IP67 Degree of protection, totally protected against dust, full-scale voltage protection, temporary immersion. Internal actuator seal standard. External bushing seal washer available separately, order from: APM Hexseal Englewood, N. J. Part Number: 60225

For actuators other than T & T1.



IP67 Degree of protection, totally protected against dust, full-scale voltage protection, temporary immersion. Internal actuator seal and external bushing seal washer standard.

OPTION CODE	BUSHING FINISH
NONE	NICKEL on all bushings except 'D8' satin chrome.
2	BLACK

¹ Will withstand 12 in.-lbs. of torque with no distortion.

² CW, H, H3, H4, Y1 & Y4 bushings not available on single pole models with A4 terminations.

³ D8 & H4 bushings available only with L, L1, L2, M & S actuators.

⁴ Y1 bushing available only with LXP, MP, PX & SP actuators.

⁵ Y4 bushing not available with L4X actuators.

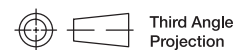
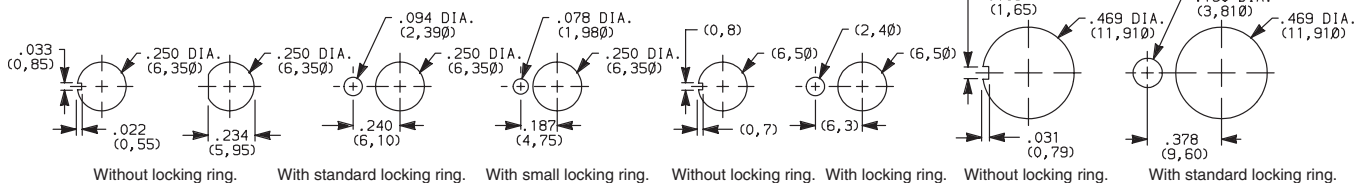
NOTE: Two mounting nuts, locking ring and lockwasher supplied standard with threaded bushings. Black hardware is supplied when either black bushings or actuators are specified. Optional mounting nut and locking ring styles and finishes available, see Section O.

PANEL MOUNTING

1/4 INCH BUSHING

METRIC BUSHING

15/32 INCH BUSHING



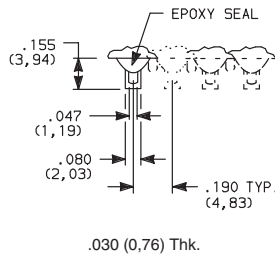
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

www.ck-components.com

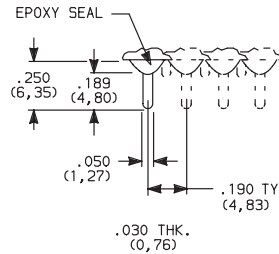
7000 Series Miniature Toggle Switches

TERMINATIONS

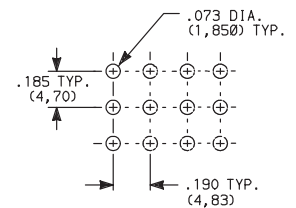
Z SOLDER LUG



C PC THRU-HOLE



PC MOUNTING

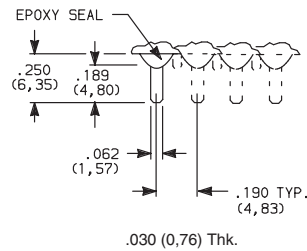


SPDT thru 4PDT

Not available with P, R or S contact materials.

SPDT thru 4PDT

Z3 QUICK CONNECT

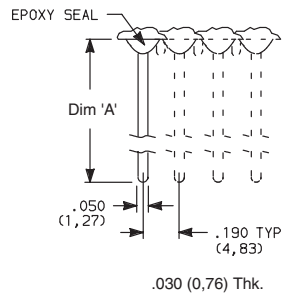


SPDT thru 4PDT

Not available with P, R or S contact materials.
Mating quick connector available, order part number 530100000, page G-16.

W, W1, W3, W4, W5

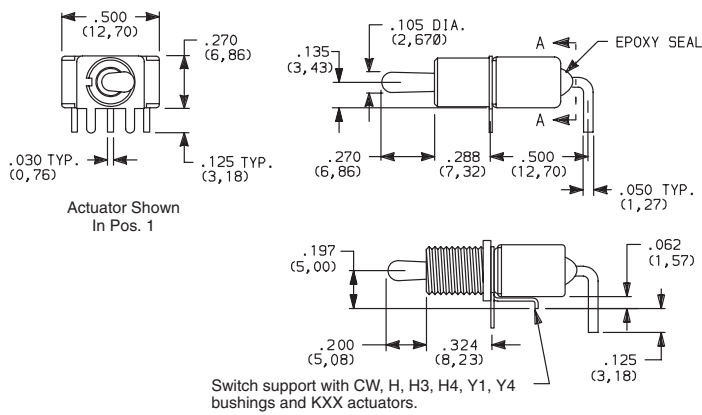
WIRE WRAP



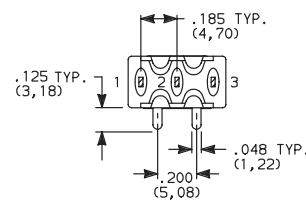
OPTION CODE	DIM 'A'
W	.750 (19,05)
W1	.964 (24,48)
W3	.425 (10,80)
W4	1.062 (26,97)
W5	1.305 (33,15)

SPDT thru 4PDT

A RIGHT ANGLE, PC THRU-HOLE



Part No. Shown: 7101MHABE



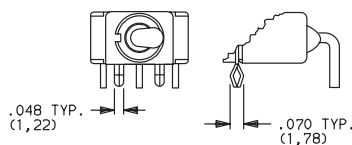
SECTION A-A

Terminal Nos.
For Reference Only



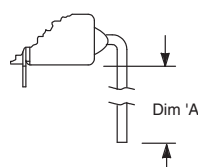
7101MD9ABE
Horizontal Actuation
SPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



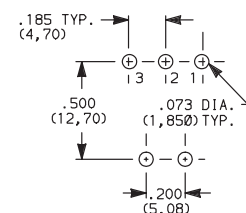
Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

AW1, AW4 RIGHT ANGLE, EXTENDED, PC THRU-HOLE



OPTION CODE	DIM 'A'
AW1	.72 (18,3)
AW4	.83 (21,1)

PC MOUNTING



Third Angle
Projection



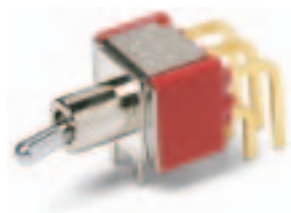
G

Toggle

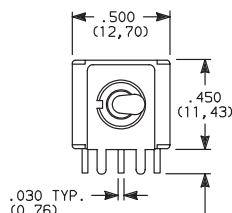
7000 Series Miniature Toggle Switches

TERMINATIONS

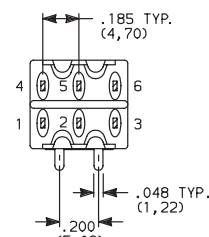
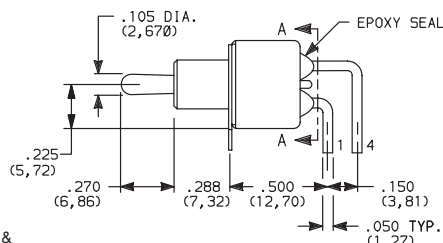
A RIGHT ANGLE, PC THRU-HOLE



7201MD9ABE
Horizontal Actuation
DPDT



Actuator Shown
In Pos. 1
.125 TYP.
(3,18)
Terminals &
Support



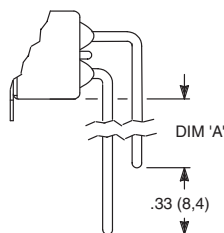
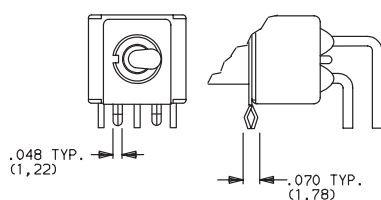
SECTION A-A

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

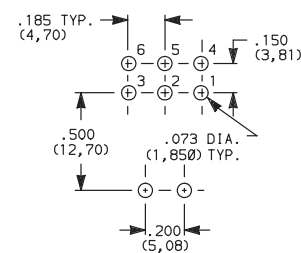
AW1, AW4

RIGHT ANGLE, EXTENDED, PC THRU-HOLE

PC MOUNTING

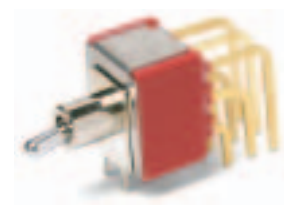


OPTION CODE	DIM 'A'
AW1	.40 (10,2)
AW4	.50 (12,7)

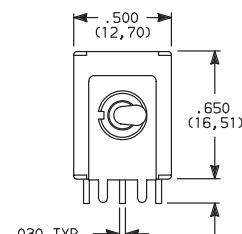


Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

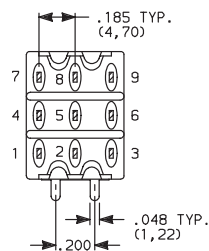
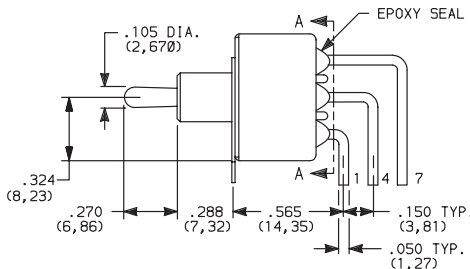
A RIGHT ANGLE, PC THRU-HOLE



7301MD9ABE
Horizontal Actuation
3PDT



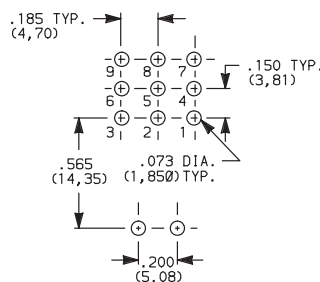
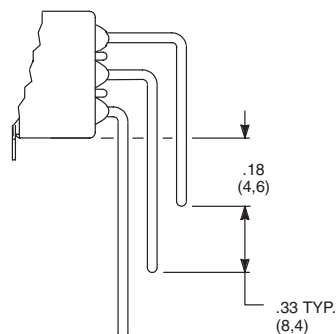
Actuator Shown
In Pos. 1
.125 TYP.
(3,18)
Terminals &
Support



SECTION A-A

AW4 RIGHT ANGLE, EXTENDED, PC THRU-HOLE

PC MOUNTING



Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.



Third Angle
Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

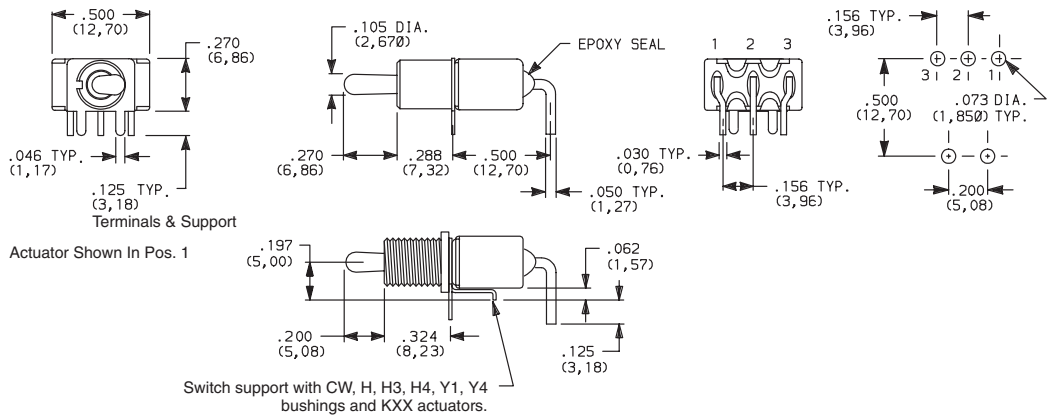
www.ck-components.com



7000 Series Miniature Toggle Switches

TERMINATIONS

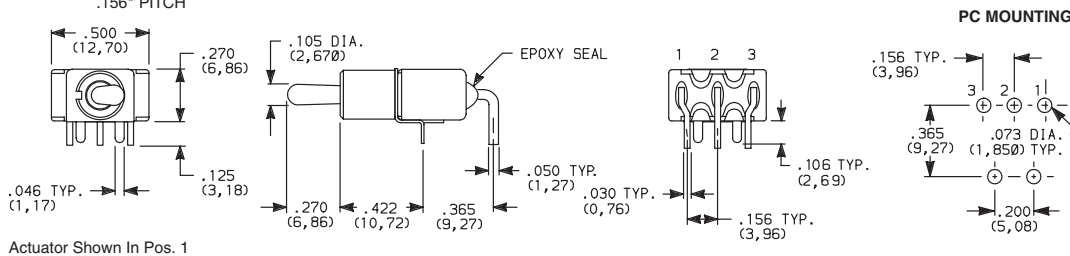
A2 RIGHT ANGLE, PC THRU-HOLE, .156" PITCH



Not available with TXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

7101MHA2BE
Horizontal Actuation
SPDT

A4 RIGHT ANGLE, PC THRU-HOLE .156" PITCH

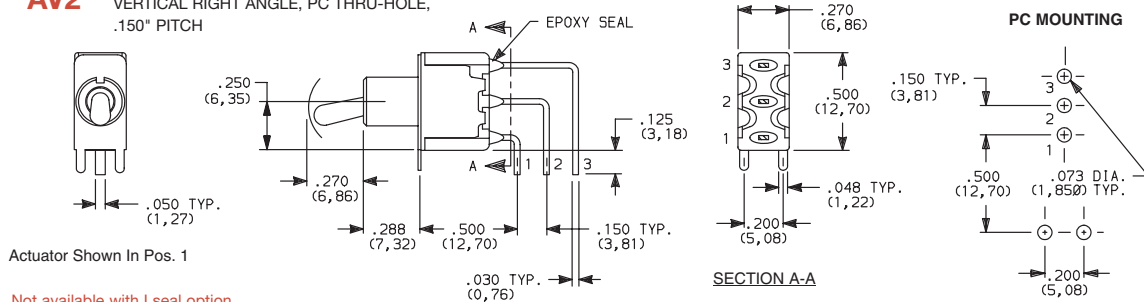


Not available with KXX & TXX actuators, CW, H, H3, H4, Y1 & Y4 bushings,
and I seal. Terminal bend radii and lead-in manufacturing option.

NOTE: The A4 option is available with any contact material and can be UL recognized and CSA certified. The PC pattern must clear switch support legs.

7101MD9A4BE
Horizontal Actuation
SPDT

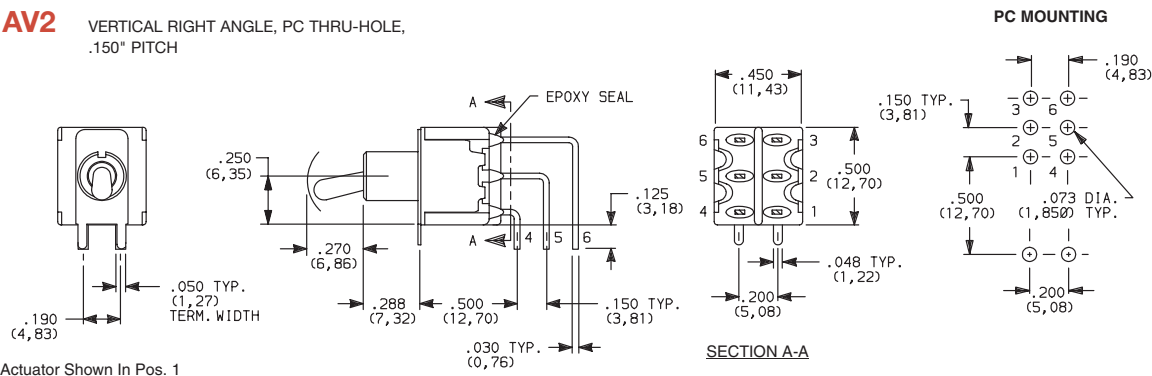
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

7101MD9AV2BE
Horizontal Actuation
SPDT

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

7201MD9AV2BE
Vertical Actuation
DPDT

C&K



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

www.ck-components.com

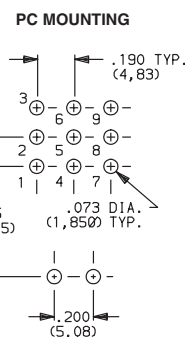
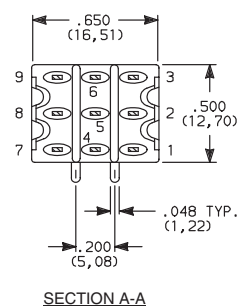
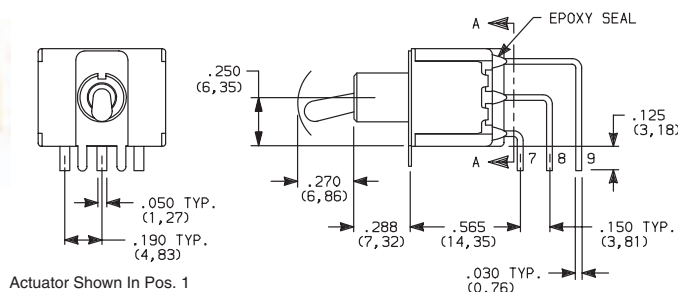
7000 Series Miniature Toggle Switches

TERMINATIONS

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH

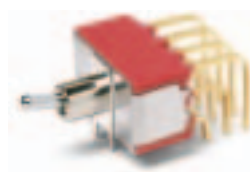


7301MD9AV2BE
Vertical Actuation
3PDT

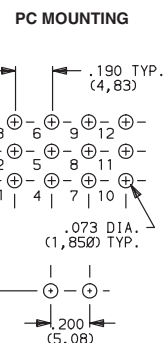
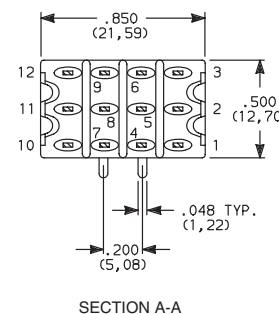
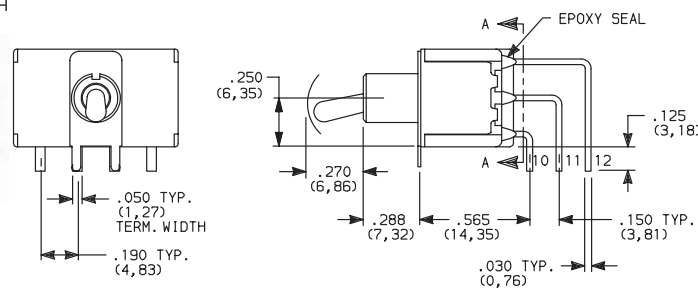


Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



7401MD9AV2BE
Vertical Actuation
4PDT



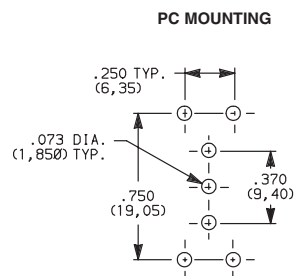
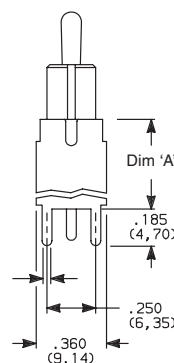
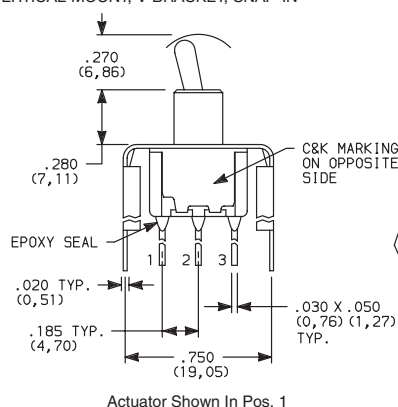
Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

V21, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



7101MD9_BE
SPDT



OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V6	.460 (11,68)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)

Not available with I seal option.



G

Toggle

C&K



Third Angle
Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

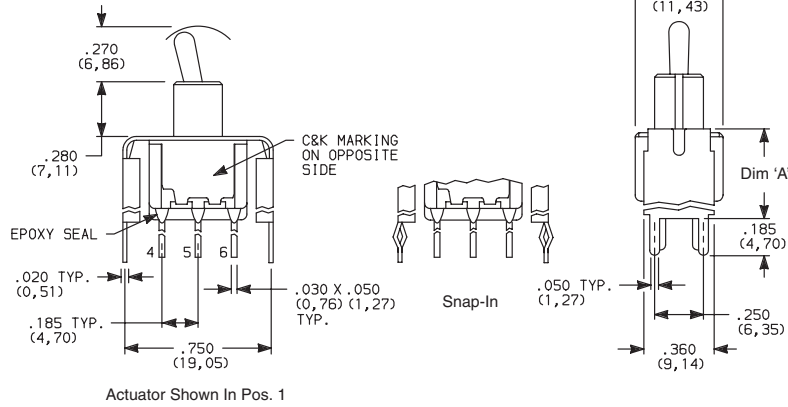
www.ck-components.com

7000 Series Miniature Toggle Switches

TERMINATIONS

V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

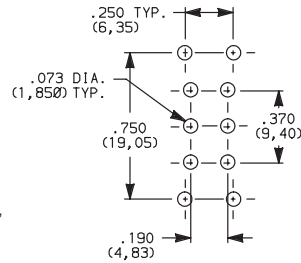
V21, V61, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

PC MOUNTING



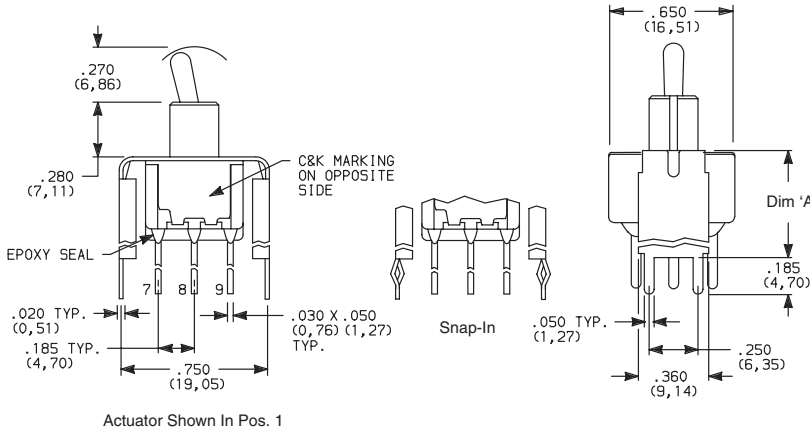
OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V6, V61	.460 (11,68)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)



7201MD9_BE
DPDT

V2, V7, V8 VERTICAL MOUNT, V-BRACKET

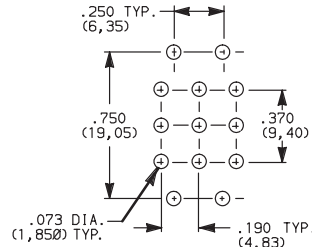
V21, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

PC MOUNTING



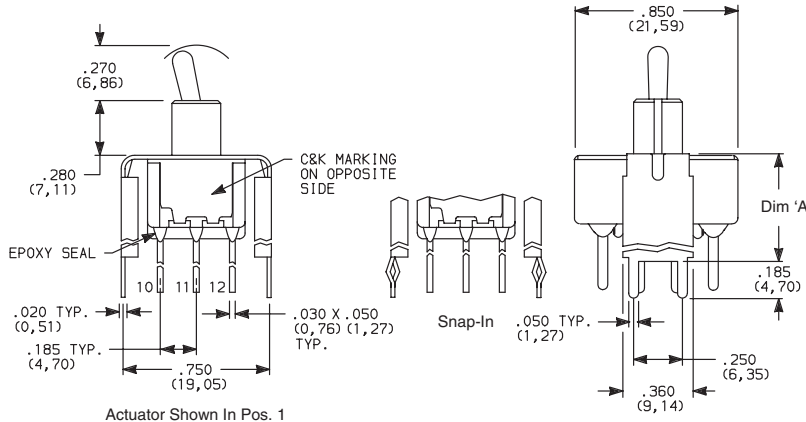
OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)



7301MD9_BE
3PDT

V2, V7, V8 VERTICAL MOUNT, V-BRACKET

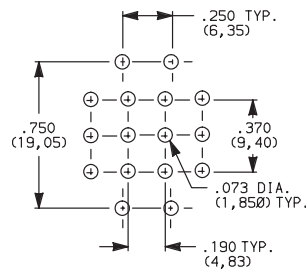
V21, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

PC MOUNTING



OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)



7401MD9_BE
4PDT



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



Toggle

7000 Series Miniature Toggle Switches

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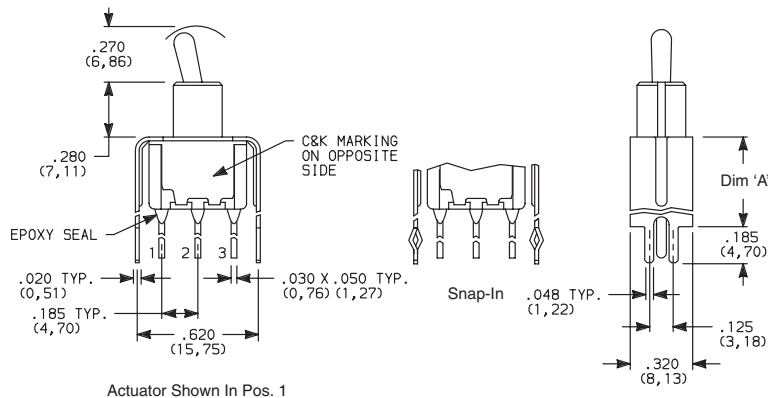
graph LR
    n1[ ] --> n2[ ]
    n2 --> n3[ ]
    n3 --> n4[ ]
    n4 --> n5[ ]
    n5 --> n6[ ]
    n6 --> n7[ ]
    n7 --> n8[ ]
    n8 --> null(( ))
    style n1 fill:#000,stroke:#fff
    style n2 fill:#000,stroke:#fff
    style n3 fill:#000,stroke:#fff
    style n4 fill:#fff,stroke:#000
    style n5 fill:#fff,stroke:#000
    style n6 fill:#fff,stroke:#000
    style n7 fill:#000,stroke:#fff
    style n8 fill:#000,stroke:#fff
    style null fill:none,stroke:none
  
```

V3, V4, V9 VERTICAL MOUNT, V-BRACKET

V31, V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



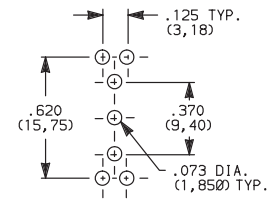
7101MD9__BE
SPDT



Actuator Shown In Pos. 1

Not available with I seal option.

PC MOUNTING



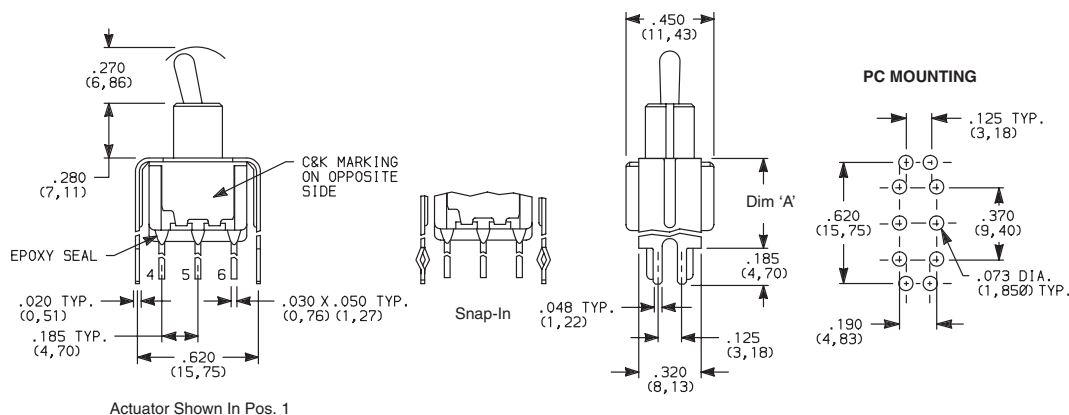
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4, V41	.630 (16,00)
V9	1.150 (29,21)

V3, V4, V9 VERTICAL MOUNT, V-BRACKET

V31, V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



7201MD9__BE
DPDT



Actuator Shown In Pos. 1

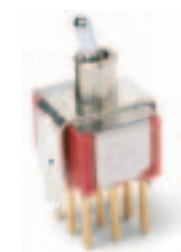
Not available with I seal option.

PC MOUNTING

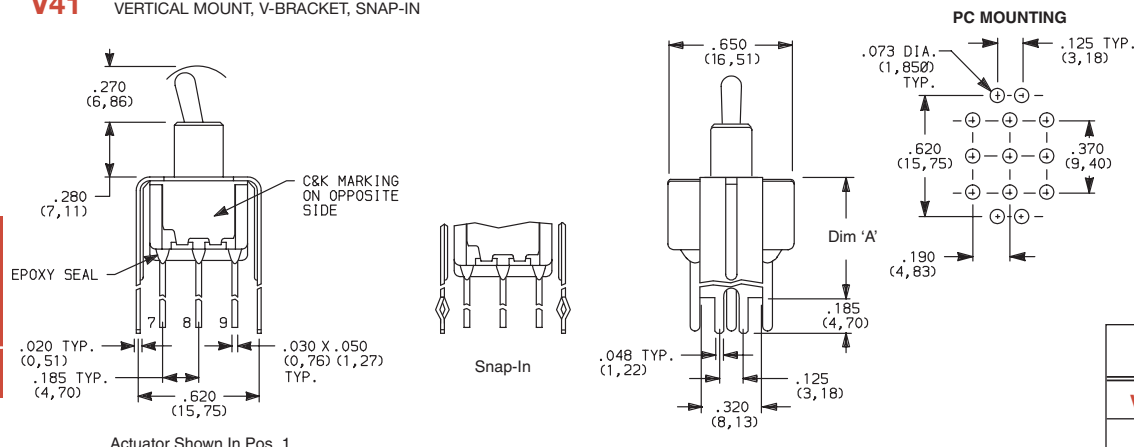
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4, V41	.630 (16,00)
V9	1.150 (29,21)

V4, V9 VERTICAL MOUNT, V-BRACKET

V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



7301MD9__BE
3PDT



Actuator Shown In Pos. 1

Not available with I seal option.

OPTION CODE	DIM 'A'
V4, V41	.630 (16,00)
V9	1.150 (29,21)



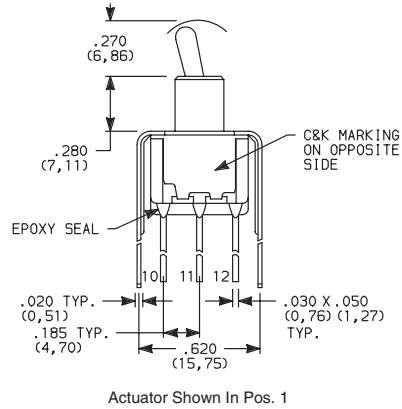
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

7000 Series Miniature Toggle Switches

TERMINATIONS

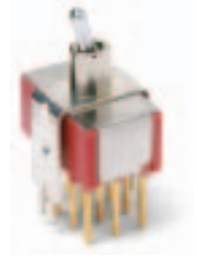
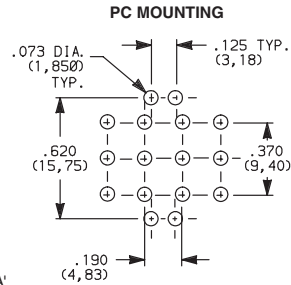
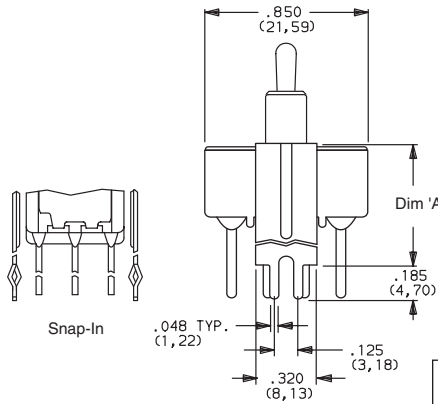
V4, V9 VERTICAL MOUNT, V-BRACKET

V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.



7401MD9_BE
4PDT

OPTION CODE	DIM 'A'
V4, V41	.630 (16,00)
V9	1.150 (29,21)

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/ DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	5 AMPS @ 120 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
S		MATTE-TIN ⁶		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 VA MAX @ 20 V AC OR DC MAX. OR 5 AMPS @ 120 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

¹ CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

² END CONTACTS: Coin silver, with gold plate over nickel plate.

³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

⁶ TERMINALS: Copper alloy, with matte tin alloy nickel plate.

NOTE: Any models supplied with P, S, R, Q, B or G contact material are RoHS compliant.

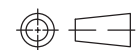
U11-U415 model numbers   with all options when ordered with G, L, S, R, M or Q contact material.

B contact material standard with all terminations except C, Z & Z3.

Q contact material standard with C, Z & Z3 terminations.

P, S & R contact materials not available with Z & Z3 terminations.

K, L and M options represent Non RoHS tin lead product and are not recommended for new designs. For additional information please contact Customer Service.



Third Angle
Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

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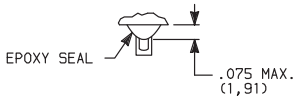


Toggle

7000 Series Miniature Toggle Switches

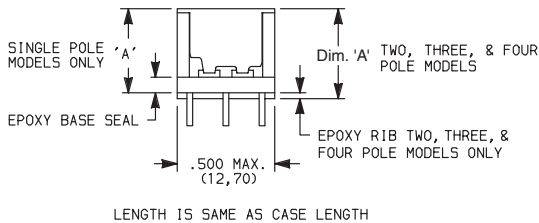
SEAL

E EPOXY SEAL



Compatible with "bottom-wash" PC board cleaning methods.

I EPOXY POTTED BASE

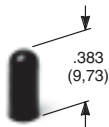


NO. POLES	DIM 'A'
SP	.410 (10,41)
DP	.440 (11,18)
3P	.505 (12,83)
4P	.505 (12,83)

Available with C, W-W5, Z & Z3 terminations only.

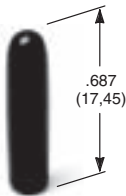
AVAILABLE HARDWARE

Cap



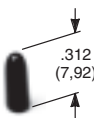
PART NO.
896801000 WHITE
896802000 BLACK
896803000 RED
 Material: Polyethylene
 Finish: Matte

Cap



PART NO.
763701000 WHITE
763702000 BLACK
763703000 RED
 Material: Vinyl
 Finish: Matte

Cap



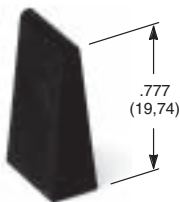
PART NO.
706201000 WHITE
706202000 BLACK
706203000 RED
 Material: Vinyl
 Finish: Matte

L41 Lever handle



PART NO.
481001000 WHITE
481002263 BLACK
481003000 RED
 Material: Nylon
 Finish: Matte

L42 Lever handle



PART NO.
481101000 WHITE
481102263 BLACK
481103000 RED
 Material: Nylon
 Finish: Matte

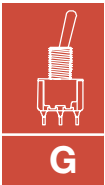
Fits Z3 Termination female connector



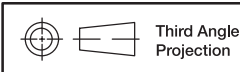
PART NO.
530100000
 Available in loose pieces.

NOTE: Additional nuts, locking rings and lockwashers available separately, see Section O.

Other colors available, consult Customer Service Center.



Toggle



Dimensions are shown: Inch (mm)
 Specifications and dimensions subject to change

Military/Aerospace/HI-REL MIL-S-83731 Toggle Switches

Features/Benefits

- **Qualified to MIL-S-83731**
- **50 μ inch selective gold contact plating**
- **Epoxy sealed terminals for process compatibility**
- **Rated for logic level to 5 amp resistive loads and 2 amp inductive loads**
- **Flame retardant housing material**
- **RoHS compliant and compatible**

Test Requirement	MIL-S-83731/9, 10, 13, 14, 15, 16
1. Strength of Terminal	1 lb. – solder lug
2. Strength of Actuating Lever Pivot and Stop	10 lbs. & 8 lbs. throughout range
3. Strength of Mounting Means	15 lbs. in. torque on bushing
4. Dielectric (Sea Level) Indication	1000 VAC Group B, 750 VAC after electrical endurance. 500 μ A max. leakage
5. Contact Voltage Drop	2.5 millivolt initial, 5.0 millivolt after mechanical endurance @ 2-6 VDC 0.1 amp
6. Temperature Rise	50° C rise max. @ rated resistive load after endurance test
7. Short Circuit	10 operations carry 100 amps resistive load @ lowest DC volts
8. Mechanical Life	20K operations at specified high and low temperatures
9. Electrical Endurance	10K operations at specified high and low temperatures
10. Overload	50 operations @ 150% of rated resistive load
11. Electrical Endurance at Sea Level	10K operations resistive load @ room temperature 10K operations inductive load @ room temperature 10K operations lamp load @ room temperature Performed on different test samples
12. Vibration	Method 204 of MIL-STD-202, test condition A .06 D. A. or 10 G's 10-500 Hz, 10 usec. max. chatter
13. Shock	Fuse-method 213 or MIL-STD-202, 10 usec. max. chatter
14. Salt Spray Test Upon Completion	48 hours – method 101 of MIL-STD-202, test condition B 10 operations resistive load (toggle sealed switches only)
15. Moisture Resistance Test Upon Completion	Method 106 of MIL-STD-202 100 VDC potential between current carrying parts and panel
16. Sand & Dust	Method 110 of MIL-STD-202, test condition B 6 hours @ 23°C 2.5K operations mechanical life (toggle sealed switches only)
17. Explosion	MIL-STD-202 method 109, maximum rated DC inductive load (toggle sealed switches only)
18. Sealing	Toggle seal – 5 operations under 0.5 inches of H ₂ O above top of bushing
19. A.) Toggle Seal B.) Bushing Seal	(Toggle sealed switches only) (Panel sealed switches only)
20. Temperature Operation	Mechanical life, –25°C to +71°C
21. Life Low Cur. Level	No requirement
22. Fungus	No requirement
23. Intermediate Current	20K operations, 35/40 milliamps @ 5 VDC resistive load @ +71°C
24. Thermal Shock	Method 107 of MIL-STD-202 test condition A; 5 cycles @ –55°C/+85°C

RATINGS

CURRENT RATINGS – HIGH LEVEL

Current Capacity in Amperes – Per Pole		
28V dc	115V ac, 400 Hz	125V ac, 60 Hz
Lamp Load		
1	1	1
Resistive Load		
5	5	5
Inductive Load		
2	2	2

CURRENT RATINGS – LOGIC LEVEL

0.5 Volt – Amp (VA) Max. @ 28 V Max. (AC or DC)

MATERIALS

CASE: Diallyl phthalate (DAP) (UL 94 V-0).

BUSHING: Brass, nickel plated.

HOUSING: Stainless steel.

ACTUATOR: Brass, chrome plated.

SWITCH SUPPORT: Brass, tin plated.

TERMINALS: Gold over nickel over copper alloy.

TERMINAL SEAL: Epoxy.

CONTACTS: Gold over nickel over silver over brass.

PANEL SEAL: Silicone rubber.

MOUNTING HARDWARE: One hexagon nut, brass with nickel plating; one lockwasher, steel with nickel plating; one locking ring, brass with nickel plating.

HOW TO ORDER: Complete part numbers for MIL-S-83731 TOGGLE SWITCHES are shown on pages G–18 through G–21.

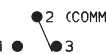


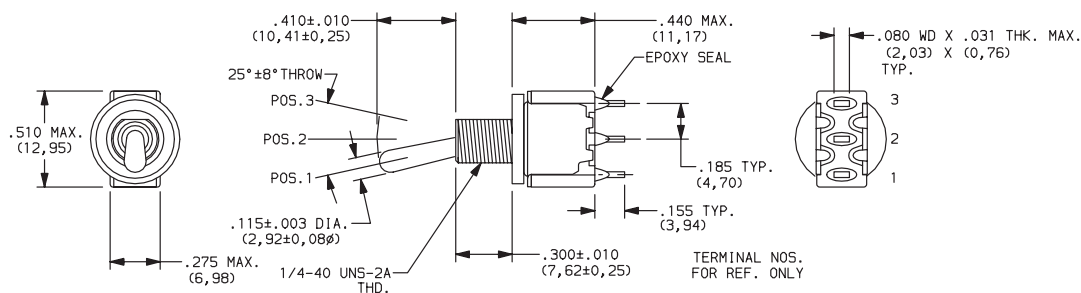
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

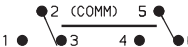


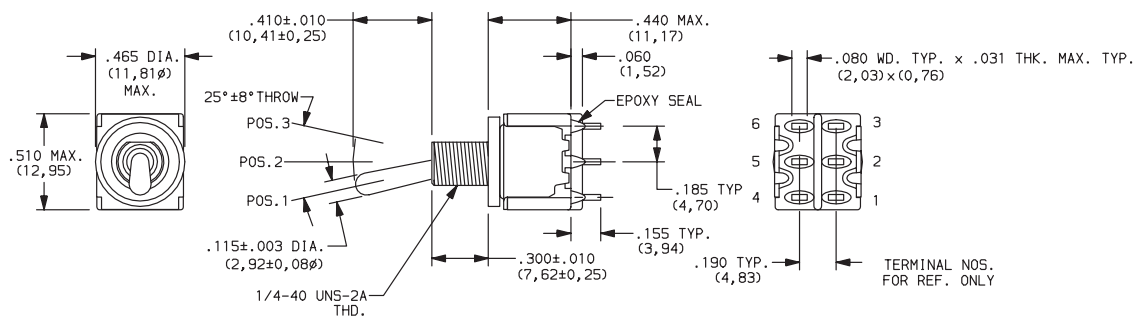
Military/Aerospace/HI-REL MIL-S-83731 Toggle Switches



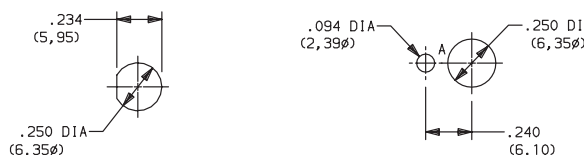
NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
SP	M83731/9-211	ON	OFF	ON	2-3	OPEN	2-1	 SPDT
	M83731/9-231	ON	NONE	ON				
	M83731/9-261	ON	NONE	MOM.				
	M83731/9-271	MOM.	OFF	MOM.				
	M83731/9-311	ON	OFF	MOM.				
	M83731/9-341	NONE	ON	MOM.				



NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
DP	M83731/10-211	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	M83731/10-231	ON	NONE	ON				
	M83731/10-261	ON	NONE	MOM.				
	M83731/10-271	MOM.	OFF	MOM.				
	M83731/10-311	ON	OFF	MOM.				
	M83731/10-321	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4	
	M83731/10-331	ON	ON	MOM.				
	M83731/10-341	NONE	ON	MOM.				
	M83731/10-351	MOM.	ON	MOM.				



PANEL MOUNTING



Without locking ring.

With standard locking ring.

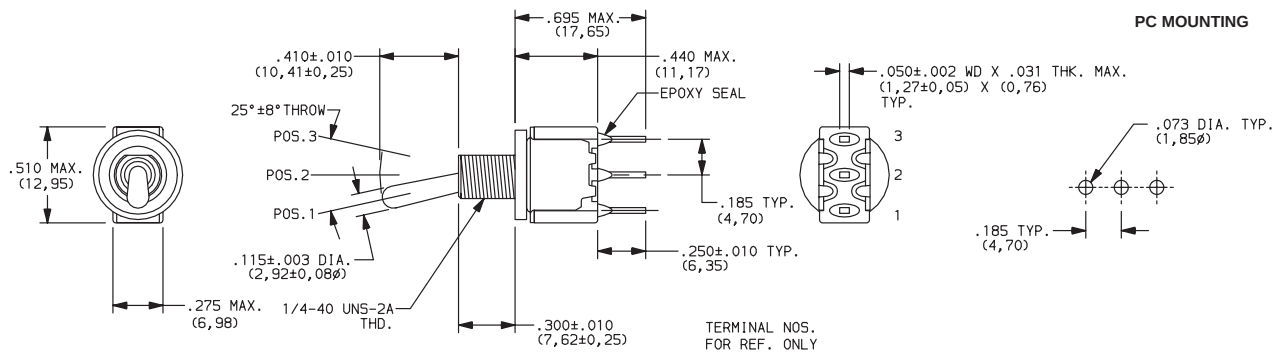


Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

Military/Aerospace/HI-REL MIL-S-83731 Toggle Switches

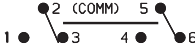


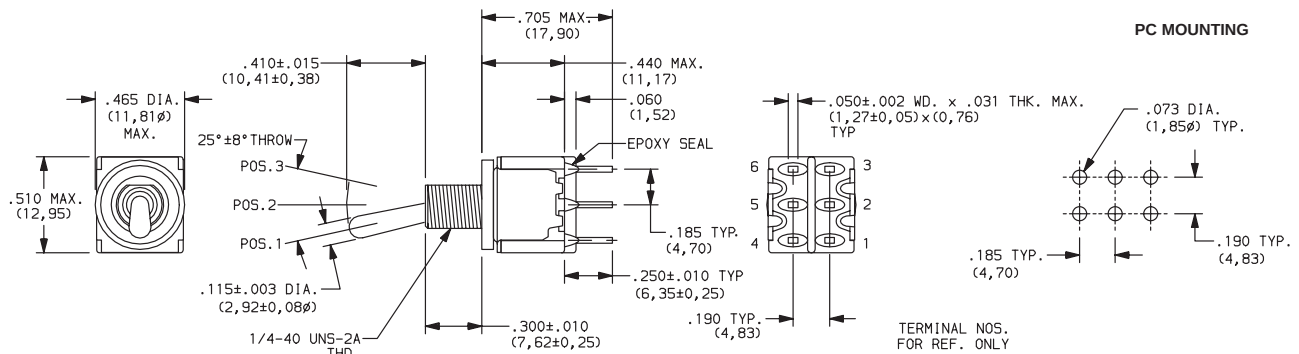
NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	M83731/9-212	ON	OFF	ON	2-3	OPEN	2-1	 SPDT
	M83731/9-232	ON	NONE	ON				
	M83731/9-262	ON	NONE	MOM.				
	M83731/9-272	MOM.	OFF	MOM.				
	M83731/9-312	ON	OFF	MOM.				
	M83731/9-342	NONE	ON	MOM.	N/A	2-3	2-1	



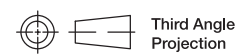
SPDT



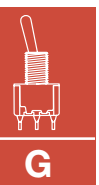
NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
DP	M83731/10-212	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	M83731/10-232	ON	NONE	ON				
	M83731/10-262	ON	NONE	MOM.				
	M83731/10-272	MOM.	OFF	MOM.				
	M83731/10-312	ON	OFF	MOM.				
	M83731/10-322	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4	
	M83731/10-332	ON	ON	MOM.				
	M83731/10-342	NONE	ON	MOM.				
	M83731/10-352	MOM.	ON	MOM.	2-3,5-6	2-3,5-4	2-1,5-4	



DPDT



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



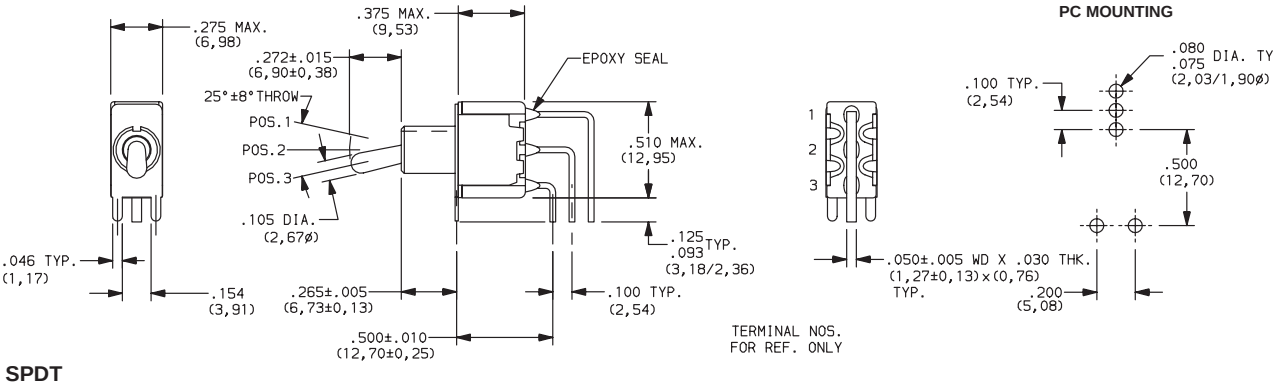
Toggle

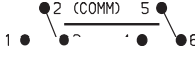
Military/Aerospace/HI-REL

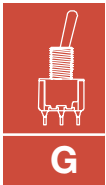
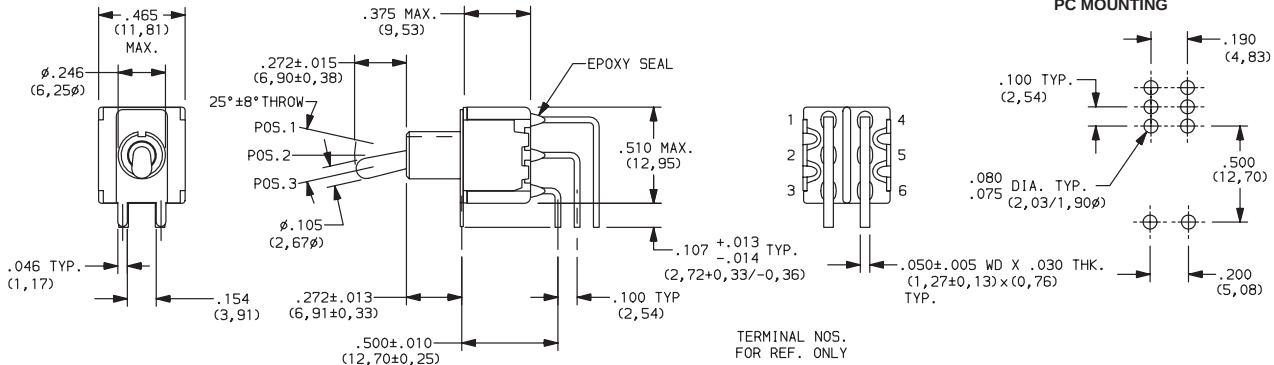
MIL-S-83731 Toggle Switches



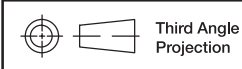
NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	M83731/13-211	ON	OFF	ON	2-3	OPEN	2-1	 SPDT
	M83731/13-231	ON	NONE	ON				
	M83731/13-261	ON	NONE	MOM.				
	M83731/13-271	MOM.	OFF	MOM.				
	M83731/13-311	ON	OFF	MOM.				
	M83731/13-341	NONE	ON	MOM.	N/A	2-3	2-1	



NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
DP	M83731/14-211	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	M83731/14-231	ON	NONE	ON				
	M83731/14-261	ON	NONE	MOM.				
	M83731/14-271	MOM.	OFF	MOM.				
	M83731/14-311	ON	OFF	MOM.	2-3,5-6	2-3,5-4	2-1,5-4	
	M83731/14-321	ON	ON	ON				
	M83731/14-331	ON	ON	MOM.				
	M83731/14-341	NONE	ON	MOM.	N/A	2-3,5-6	2-1,5-4	
M83731/14-351	MOM.	ON	MOM.	2-3,5-6	2-3,5-4	2-1,5-4		



Toggle



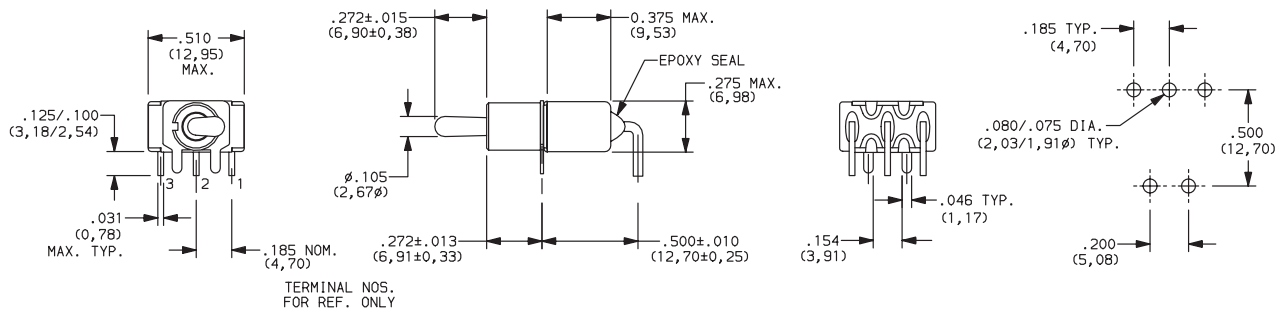
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

Military/Aerospace/HI-REL MIL-S-83731 Toggle Switches



NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	M83731/15-211	ON	OFF	ON	2-3	OPEN	2-1	 1 • 2 (COMM) • 3 SPDT
	M83731/15-231	ON	NONE	ON				
	M83731/15-261	ON	NONE	MOM.				
	M83731/15-271	MOM.	OFF	MOM.				
	M83731/15-311	ON	OFF	MOM.				
	M83731/15-341	NONE	ON	MOM.	N/A	2-3	2-1	

PC MOUNTING

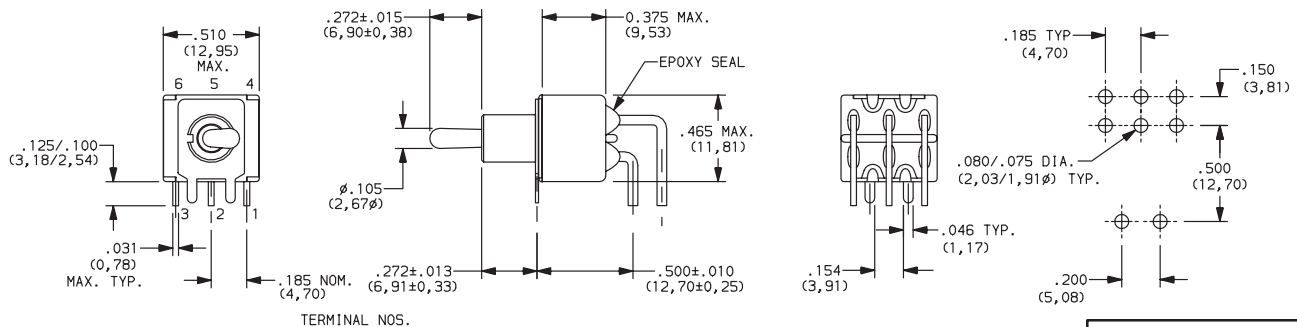


SPDT

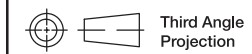


NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
DP	M83731/16-211	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	M83731/16-231	ON	NONE	ON				
	M83731/16-261	ON	NONE	MOM.				
	M83731/16-271	MOM.	OFF	MOM.				
	M83731/16-311	ON	OFF	MOM.				
	M83731/16-321	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4	
	M83731/16-331	ON	ON	MOM.				
	M83731/16-341	NONE	ON	MOM.	N/A	2-3,5-6	2-1,5-4	
	M83731/16-351	MOM.	ON	MOM.	2-3,5-6	2-3,5-4	2-1,5-4	

PC MOUNTING



DPDT



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

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E Series

Sealed Miniature Toggle Switches



Features/Benefits

- Sealed against solder and cleaning process contaminants
- UL 94V-0 Nylon case and bushing
- Multi-positions
- ESD protection available
- RoHS compliant models available

Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment



Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material: E1XX & E2XX
MODELS: 7.5 AMPS @ 125 V AC or 28 V DC; 3 AMPS @ 250 V AC. E3XX MODELS: 5 AMPS @ 125 V AC or 28 V DC; 2 AMPS @ 250 V AC. See page G-25 for additional ratings.

ELECTRICAL LIFE: E1XX and E2XX models: 40,000 make-and-break cycles at full load. E3XX models: 30,000 cycles.

CONTACT RESISTANCE: Below 10 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

ELECTROSTATIC DISCHARGE (ESD) OPTION: F1 conductive bushing only. Dissipates up to 20,000 V DC from actuator to ground.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.

Materials

CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0). F1 conductive bushing option is impregnated with carbon fibers.

ACTUATOR: Brass, chrome plated with internal o-ring seal standard.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

SWITCH SUPPORT RETAINER: Stainless steel.

CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See page G-29 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut & Locking ring: Brass, nickel plated.
Lockwasher: Steel, nickel plated.

NOTE: Any models supplied with P, S, R, Q, B or G contact material are RoHS compliant and compatible.

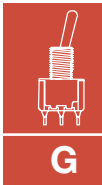
NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages G-23 thru G-29. For additional options not shown in catalog, consult our Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

Switch Function	Actuator	Bushing	Terminations	Contact Material	Seal
E101 SP, On-None-On E103 SP, On-Off-On E105 SP, Mom.-Off-Mom. E107 SP, On-Off-Mom. E108 SP, On-None-Mom. E201 DP, On-None-On E203 DP, On-Off-On E205 DP, Mom.-Off-Mom. E207 DP, On-Off-Mom. E208 DP, On-None-Mom. E211 DP, On-On-On E213 DP, On-On-Mom. E215 DP, Mom.-On-Mom. E301 3P, On-None-On	M .300" high S .500" high L3 Plastic, .940" high	D1 .250" high F1 Conductive, .250" high* D9 .280" high Y Threaded, .350" high	A Right angle, PC thru-hole AV2 Vertical right angle, PC thru-hole C PC Thru-hole V3 .460" high, V-bracket Z Solder lug A3 Right angle, PC thru-hole AV3 Vertical right angle, PC thru-hole V6 .460" high, V-bracket V9 1.150" high, V-bracket V31 .460" high, snap-in V-bracket V61 .460" high, snap-in V-bracket W .750" long, wire wrap Z3 Quick connect	B Gold P Gold, matte-tin Q Silver S Silver, matte-tin G Gold over silver R Gold over silver, matte-tin	E Epoxy

* F1 available with SP and DP versions only, please see page G-24



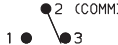
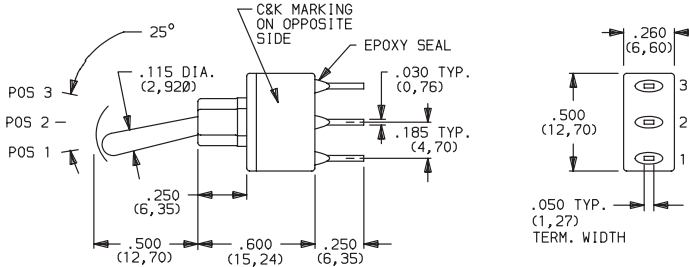
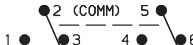
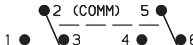
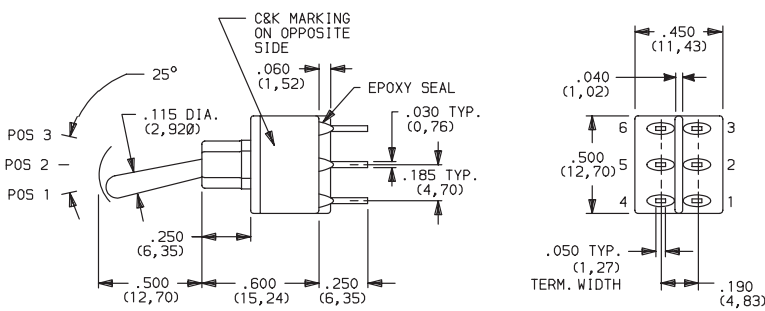
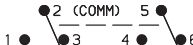
Toggle



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

E Series Sealed Miniature Toggle Switches

SWITCH FUNCTION

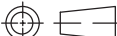
NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		C&K marking on opposite side			C&K marking on opposite side			
SP	E101	ON	NONE	ON	2-3	N/A	2-1	
	E103	ON	OFF	ON	2-3	OPEN	2-1	
	E105	MOM.	OFF	MOM.				
	E107	ON	OFF	MOM.				
	E108	ON	NONE	MOM.	2-3	N/A	2-1	
SPDT								
 Terminal Numbers For Reference Only 								
Part number shown: E101SD1CBE								
DP	E201	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	
	E203	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	E205	MOM.	OFF	MOM.				
	E207	ON	OFF	MOM.				
	E208	ON	NONE	MOM.	2-3,5-6	N/A	2-1,5-4	
	E211 **	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4	
	E213**	ON	ON	MOM.				
	E215**	MOM.	ON	MOM.				
DPDT								
 Terminal Numbers For Reference Only 								
Part number shown: E201SD1CBE								

MOM. = Momentary

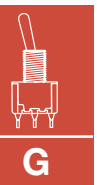
** Wiring for 3-way switch, see Section O.

All models   with all options when ordered with G, L, R, M, Q or S contact material except with F1 conductive bushing.

C&K

 Third Angle Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



Toggle

E Series
Sealed Miniature Toggle Switches

SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
		C&K marking on opposite side			C&K marking on opposite side			
3P	E301	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	
3PDT								
Part number shown: E301SD1CBE								

MOM. = Momentary ** Wiring for 3-way switch, see Section O.

All models with all options when ordered with G, L, R, M, Q or S contact material except with F1 conductive bushing.

ACTUATOR

M .300" HIGH

S .500" HIGH

L3 PLASTIC, .940" HIGH

OPTION CODE	L3 ACTUATOR COLOR
2	BLACK

Other colors available, consult Customer Service Center. No color choice required for S & M actuators.

* Actuators shown with standard D1 bushing. Subtract .030 (0,76) for D9 bushing. Subtract .100 (2,54) for Y bushing.

BUSHING

D1 .250" HIGH, UNTHREADED

D9 .280" HIGH, UNTHREADED

Y THREADED, INSULATED, .350" HIGH WITH KEYWAY

F1 ESD CONDUCTIVE BUSHING, .250" HIGH, UNTHREADED

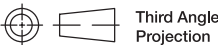
F1 bushing is not UL/CSA approved

PANEL MOUNTING

NOTE: Internal o-ring actuator seal standard for all bushing options.

E3XX models not available with D9 bushing.

Available only with C, Z, Z3, & W terminations. Available for 1&2 pole only. Hardware: One dress nut part number 299D01201, one hex nut part number 540400201 and lockwasher part number 700303202 supplied standard. **Will withstand 4 in.-lbs. of torque with no distortion.**



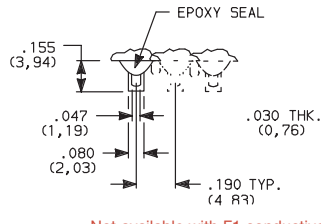
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



E Series Sealed Miniature Toggle Switches

TERMINATIONS

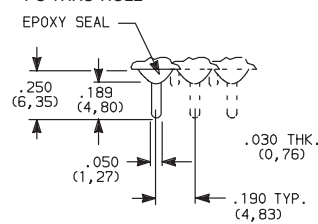
Z SOLDER LUG



SPDT thru 3PDT

Not available with F1 conductive bushing or P, R or S contact material.

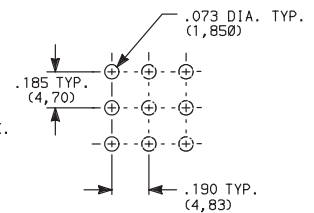
C PC THRU-HOLE



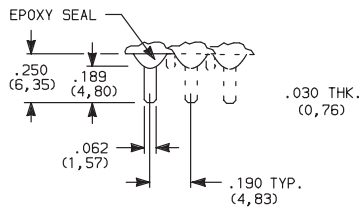
SPDT thru 3PDT

Not available with F1 conductive bushing.

PC MOUNTING



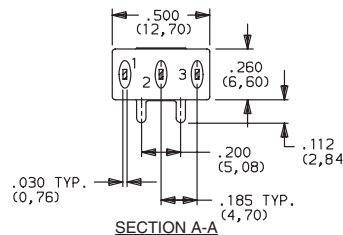
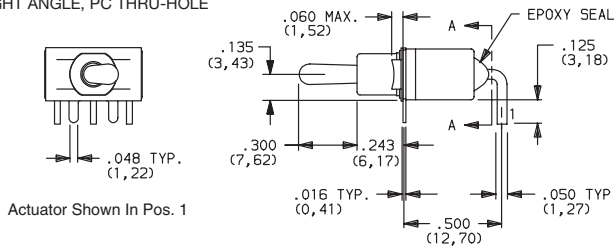
Z3 QUICK CONNECT



SPDT thru 3PDT

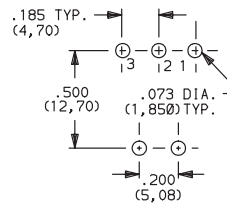
Not available with F1 conductive bushing or P, R or S contact material. Mating quick connector available; order part number 530100000, page G-26.

A RIGHT ANGLE, PC THRU-HOLE



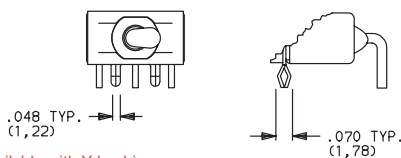
Terminal Nos. For Reference Only

PC MOUNTING



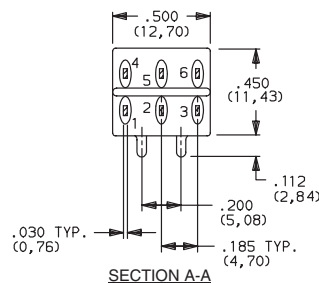
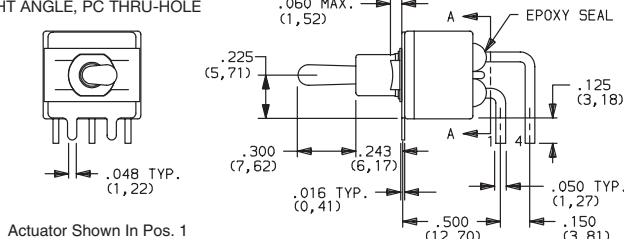
E101MD1ABE
Horizontal Actuation
SPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



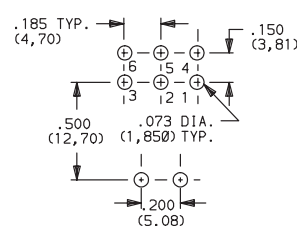
Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

A RIGHT ANGLE, PC THRU-HOLE



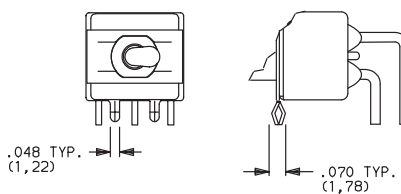
Terminal Nos. For Reference Only

PC MOUNTING



E201MD1ABE
Horizontal Actuation
DPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

C&K



Third Angle
Projection
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



G

Toggle

E Series Sealed Miniature Toggle Switches

TERMINATIONS

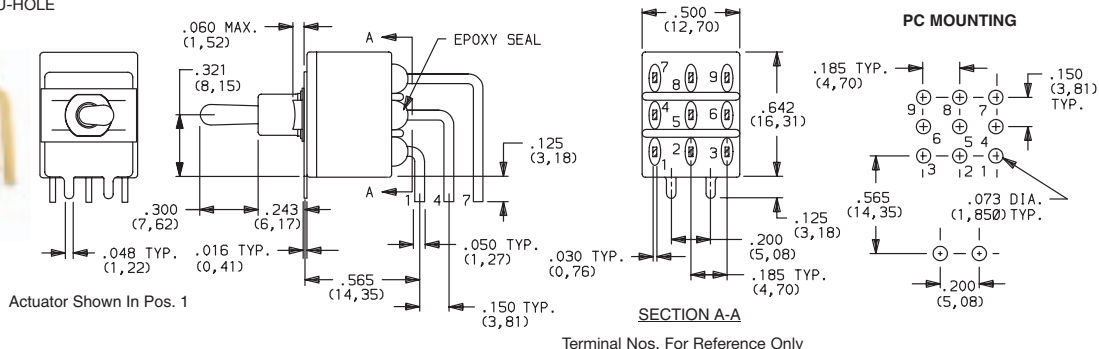
A RIGHT ANGLE, PC THRU-HOLE



E301MD1ABE

Horizontal Actuation

3PDT



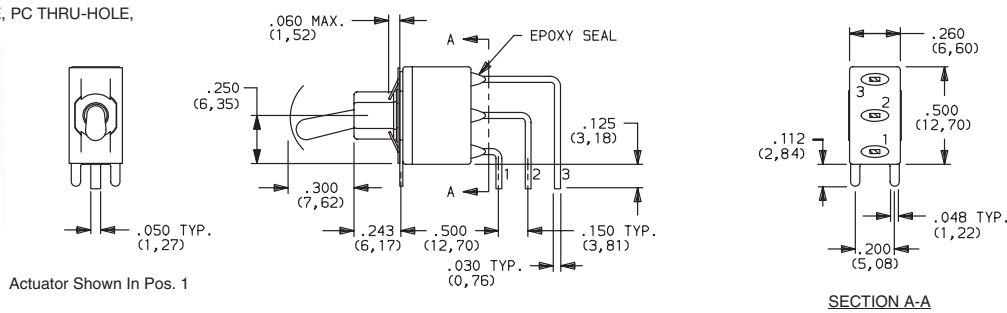
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



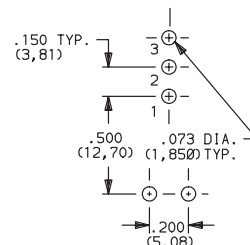
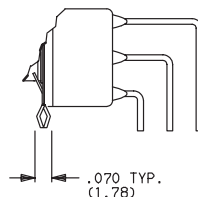
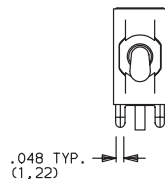
E101MD1AV2BE

Vertical Actuation

SPDT



AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

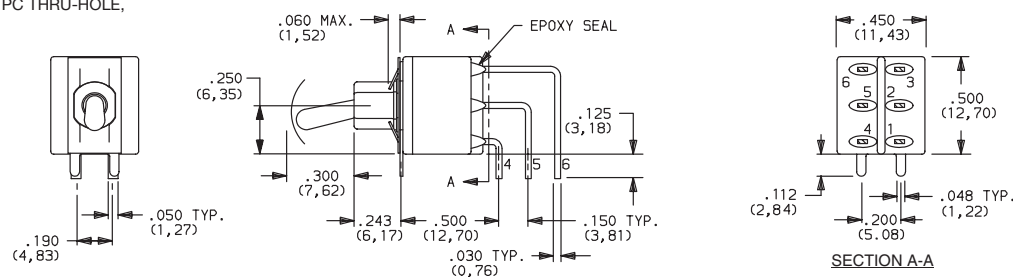
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



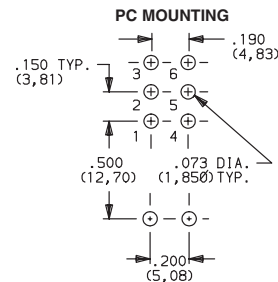
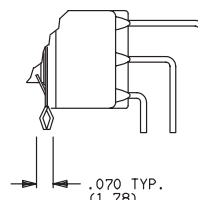
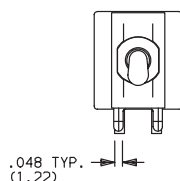
E201MD1AV2BE

Vertical Actuation

DPDT



A3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.



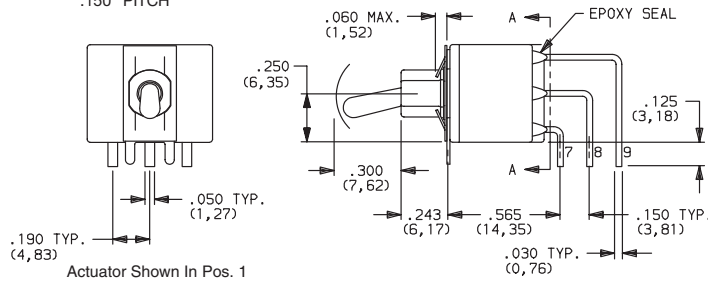
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

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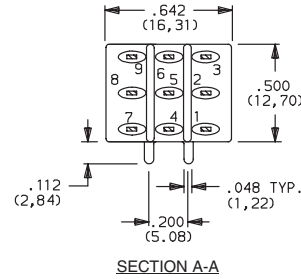
E Series Sealed Miniature Toggle Switches

TERMINATIONS

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



Actuator Shown In Pos. 1

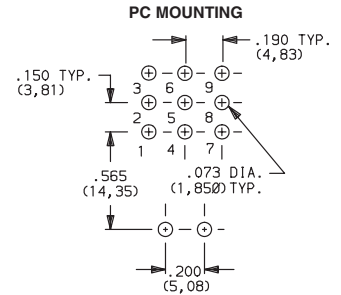


E301MD1AV2BE
Vertical Actuation
3PDT

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE .150" PITCH

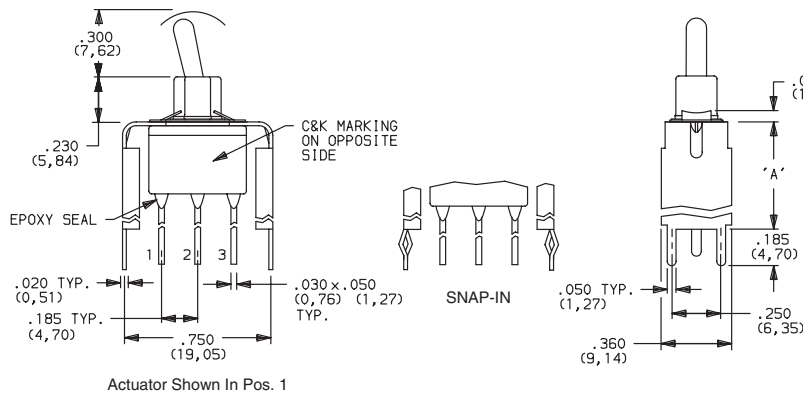


Not available with D9 & Y bushings.
Terminal bend radii and lead-in manufacturing option.

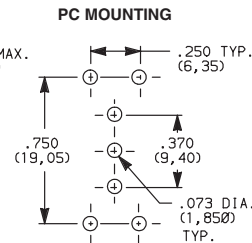


V6 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1



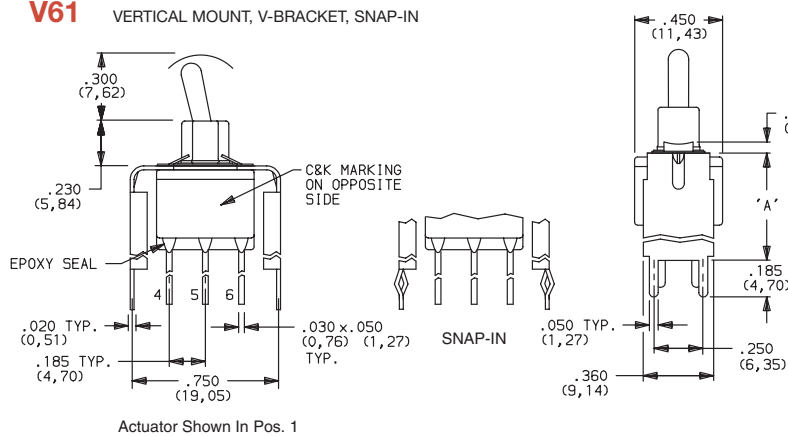
E101MD1_BE
SPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)

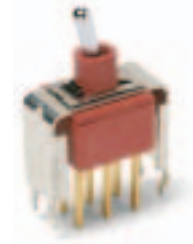
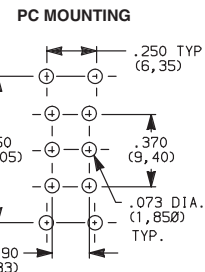
Not available with Y bushing.

V6 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



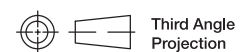
Actuator Shown In Pos. 1



E201MD1_BE
DPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)

Not available with Y bushing.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

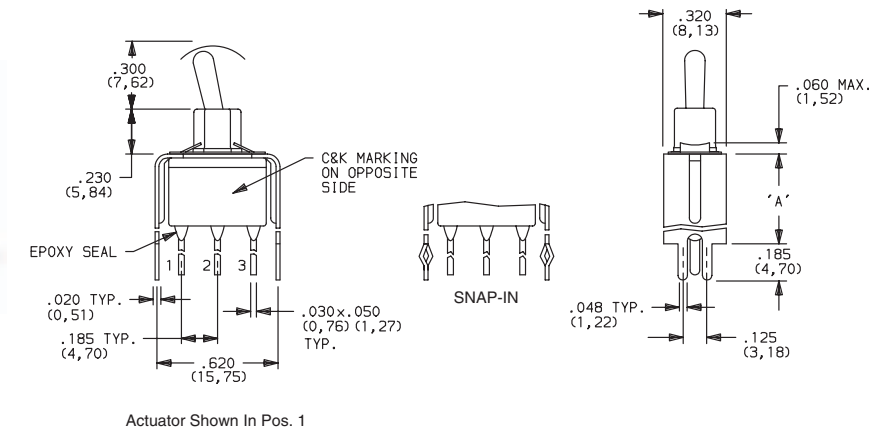


E Series Sealed Miniature Toggle Switches

TERMINATIONS

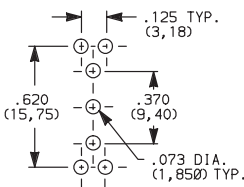
V3, V9 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Not available with Y bushing.

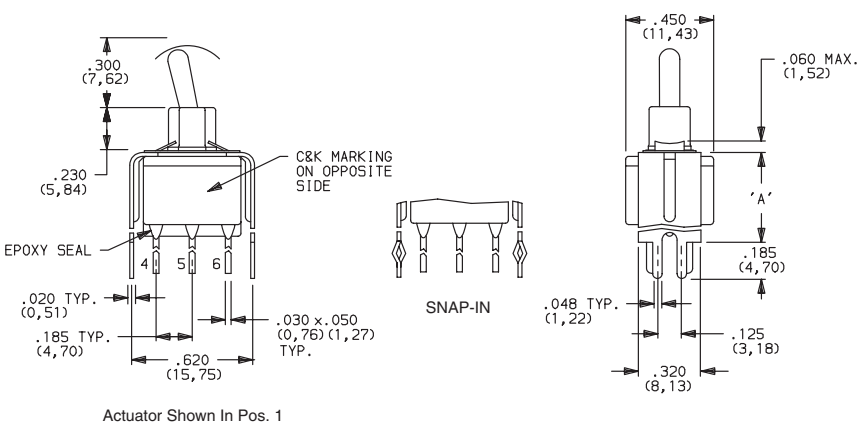
PC MOUNTING



OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V9	1.150 (29,21)

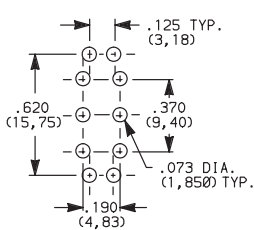
V3, V9 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



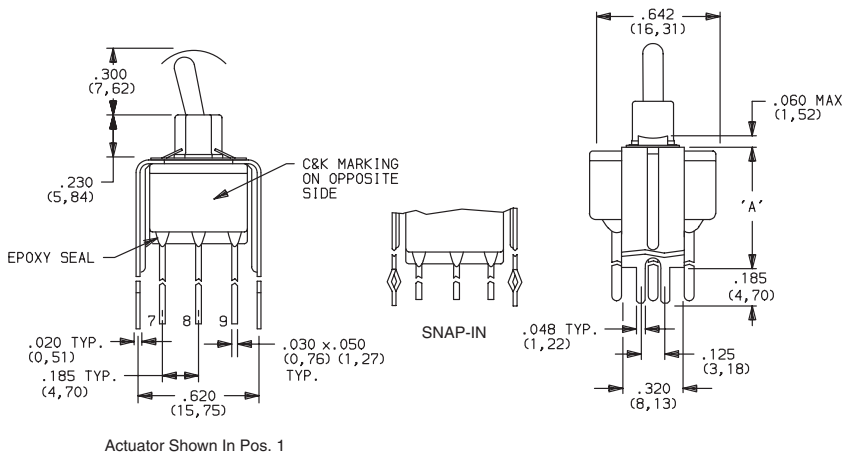
Not available with Y bushing.

PC MOUNTING



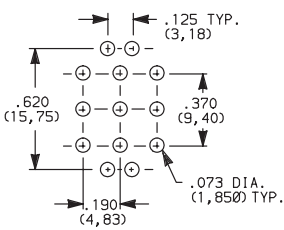
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V9	1.150 (29,21)

V9 VERTICAL MOUNT, V-BRACKET

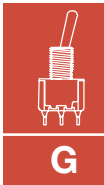


Not available with D9 & Y bushings.

PC MOUNTING



OPTION CODE	DIM 'A'
V9	1.150 (29,21)



Toggle



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

E Series Sealed Miniature Toggle Switches

CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/ DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	E1XX & E2XX MODELS: 7.5 AMPS @ 125 V AC OR 28 V DC; 3 AMPS @ 250 V AC. E3XX MODELS: 5 AMPS @ 125 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
S		MATTE-TIN ⁶		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	E1XX AND E2XX MODELS: 0.4 VA MAX @20 V AC OR DC MAX. OR 7.5 AMPS @125 V AC OR 28 V DC; 3 AMPS @ 250 V AC. DC E3XX MODELS: 0.4 VA MAX. @ 20 V AC OR DC MAX. OR 5 AMPS @ 125 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

¹ CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

² END CONTACTS: Coin silver, with gold plate over nickel plate.

³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, with gold flash over silver plate. Or copper alloy, silver plated.

⁶ TERMINALS: Copper alloy, with matte-tin over nickel plate.

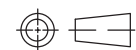
NOTE: Any models supplied with P, S, R, Q, B or G contact material are RoHS compliant.

All models  with all options when ordered with S, R, G, L, M or Q contact material except with F1 conductive bushing.

B contact material standard with all terminations.

P, S & R contact materials not available with Z & Z3 terminations.

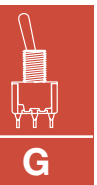
K, L and M options represent Non RoHS tin lead product and are not recommended for new designs. For additional information please contact Customer Service.



Third Angle
Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

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G

Toggle

ET Series

Sealed Subminiature Toggle Switches

Features/Benefits

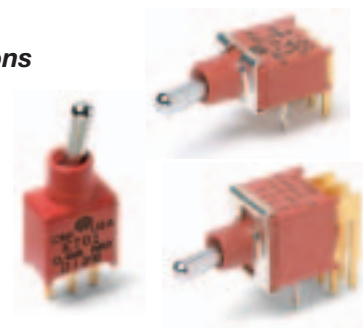
- Sealed against solder and cleaning process contaminants
- ESD protection available
- Thru-hole and surface mount models
- Compact size and small footprint save PCB space
- RoHS compliant models available



Models Available

Typical Applications

- Hand-held telecommunications
- Instrumentation
- Medical equipment



Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. See page F-32 for additional ratings.

ELECTRICAL LIFE: ETX1 models: 60,000 make-and-break cycles at full load. All other models: 30,000 cycles.

CONTACT RESISTANCE: Below 20 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

ELECTROSTATIC DISCHARGE (ESD) RESISTANT OPTION:
M3 & S3 insulating actuator only: 9,000 V DC min. @ sea level, actuator to terminals. F1 conductive bushing only: Dissipates up to 20,000 V DC from actuator to ground. M3 & S3 actuator and F1 bushing options are not recommended for use together.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.

PACKAGING: Surface mount switches are shipped in tape and reel packaging, see page G-35 for drawings and reel information.

Materials

CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0). SA surface mount: High temperature material, glass filled 4/6 nylon, flame retardant, heat stabilized (UL 94V-0). F1 conductive bushing option is impregnated with carbon fibers.

ACTUATOR: M3 & S3 anti-static actuator: Nylon 4/6, black standard (UL 94V-0). All other actuators: Brass, chrome plated. Internal o-ring seal standard with all actuators.

SWITCH SUPPORT: Brass, tin plated.

CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See G-35 for additional contact materials.

TERMINAL SEAL: Epoxy.

NOTE: Any models supplied with Q, B, G, P or R contact material are RoHS compliant and compatible.

NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages G-31 thru G-35. For additional options not shown in catalog, consult our Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

Switch Function

- ET01** SP, On-None-On
- ET02** SPST, Off-None-On
- ET03** SP, On-Off-On
- ET05** SP, Mom.-Off-Mom.
- ET07** SP, On-Off-Mom.
- ET08** SP, On-None-Mom.
- ET21** DP, On-None-On
- ET23** DP, On-Off-On
- ET24** DP, On-On-On
- ET25** DP, Mom.-Off-Mom.
- ET27** DP, On-Off-Mom.
- ET28** DP, On-None-Mom.

Actuator

- M** .240" high
- M3** Plastic, anti-static, .240" high
- S** .400" high
- L** .320" high
- S1** .540" high

Bushing

- D1** .177" High, Unthreaded
- F1** .177" high, unthreaded, ESD conductive

Terminations

- A** Right angle, PC thru-hole
- AV** Vertical right angle, PC thru-hole
- C** PC Thru-hole
- SA** Right angle, surface mount
- SA1** Right angle, surface mount rear-facing
- V3** Vertical mount, V-bracket
- AV3** Vertical right angle, snap-in, PC thru-hole
- V31** Vertical mount, V-bracket, snap-in
- W** Wire wrap

Contact Material

- B** Gold
- P** Gold, matte tin
- Q** Silver
- S** Silver/matte-tin
- G** Gold over silver
- R** Gold over silver, matte-tin

Seal

- E** Epoxy

Plastic Actuator Color

- NONE** No actuator color
- 2** Black
- 1** White



Toggle



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

SWITCH FUNCTION

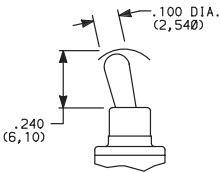
Toggle

ET Series Sealed Subminiature Toggle Switches

ACTUATOR

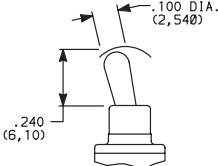
ACTUATOR COLOR

M .240" HIGH



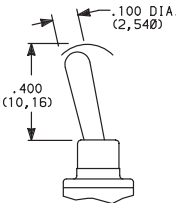
Standard with A, AV, V3 & V31 terminations.

M3 PLASTIC, ANTISTATIC, .240" HIGH



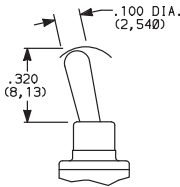
Material: Nylon 4/6 (UL 94V-0), black standard.
Static resistance: 9,000 V DC min. @ sea level, actuator to terminals. Not available with F1 conductive bushing option. Not UL approved.

S .400" HIGH

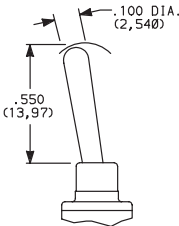


Standard with C or W terminations.

L .320" HIGH



S1 .540" HIGH



OPTION CODE	PLASTIC ACTUATOR COLOR
(NONE)	BLACK (M3 & S3 only)
1	WHITE (M3 & S3 only)

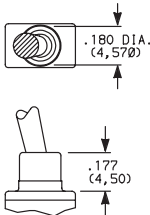
NOTE: All actuators have chrome finish (except M3 & S3).

BUSHING

D1 .177" HIGH, UNTHREADED

F1 ESD, CONDUCTIVE BUSHING UNTHREADED, .177" HIGH

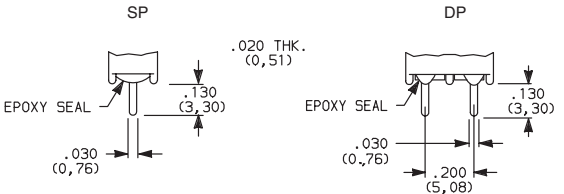
F1 bushing is not UL/CSA approved



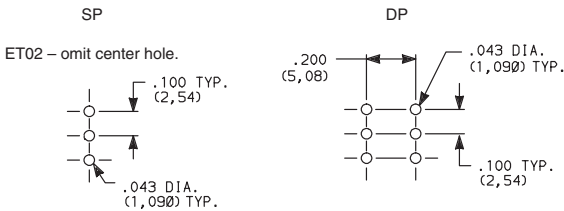
NOTE: ESD protection depends on proper grounding of switch support bracket. F1 conductive bushing option is impregnated with carbon fibers; dissipates electrostatic discharge (ESD) up to 20,000 V from actuator to ground. Available with all metal actuator options and A, AV, AV3, V3 and V31 termination options only. Internal actuator o-ring seal standard.

TERMINATIONS

C PC THRU-HOLE

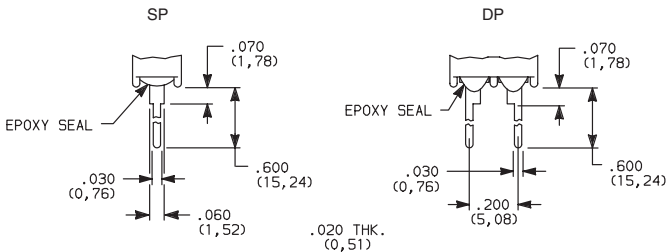


PC MOUNTING



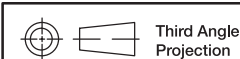
SP and DP

W WIRE WRAP



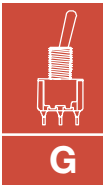
SP and DP

Not available with F1 conductive bushing.



Dimensions are shown: Inch (mm)

Specifications and dimensions subject to change



Toggle



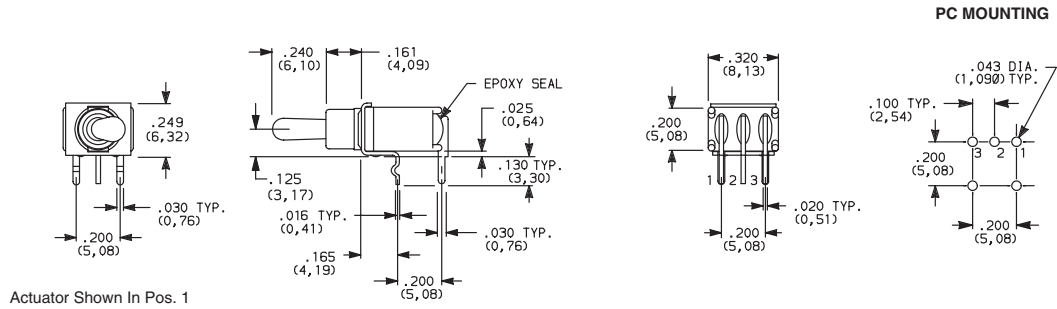
ET Series Sealed Subminiature Toggle Switches

TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE



ET01MD1ABE
Horizontal Actuation
SPDT

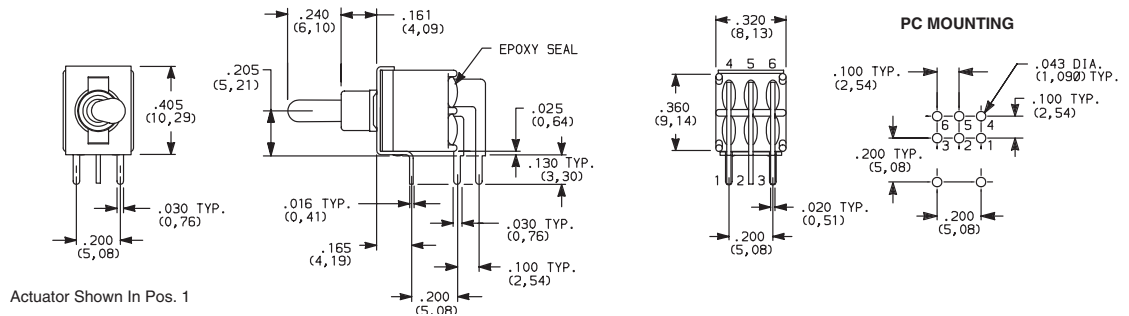


Not available with ET02 model.

A RIGHT ANGLE, PC THRU-HOLE



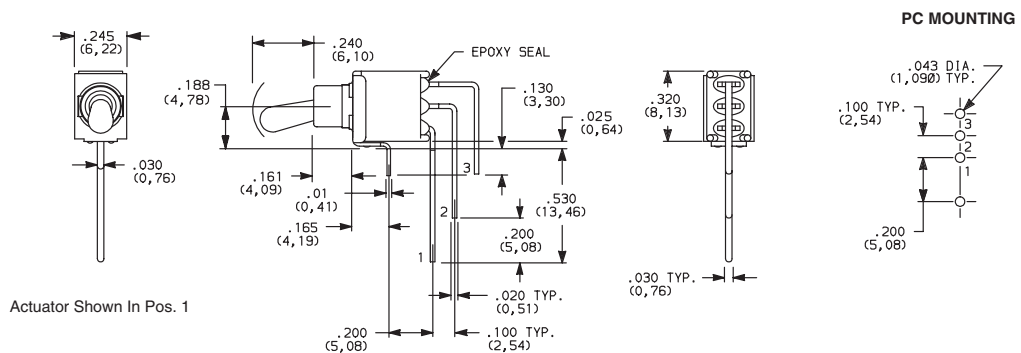
ET21MD1ABE
Horizontal Actuation
DPDT



AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



ET01MD1AVBE
Vertical Actuation
SPDT



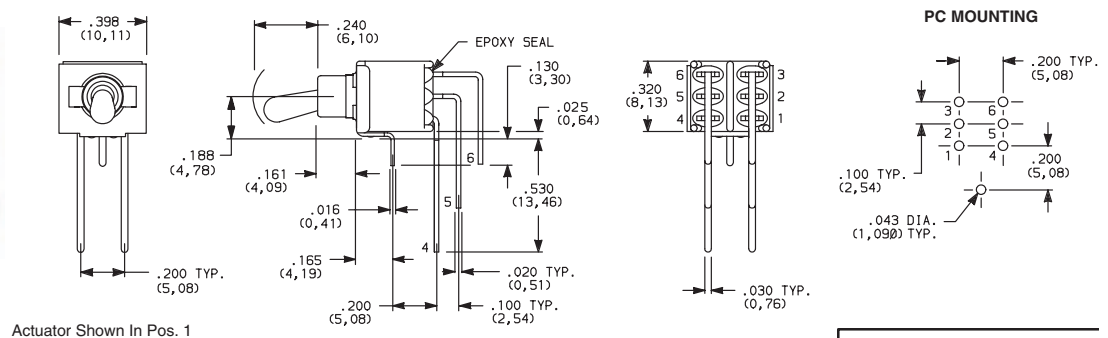
ET02 - omit terminal 2.

NOTE: Terminal bend radii and lead-in manufacturing option.

AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



ET21MD1AVBE
Vertical Actuation
DPDT

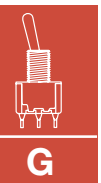


NOTE: Terminal bend radii and lead-in manufacturing option.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

C&K

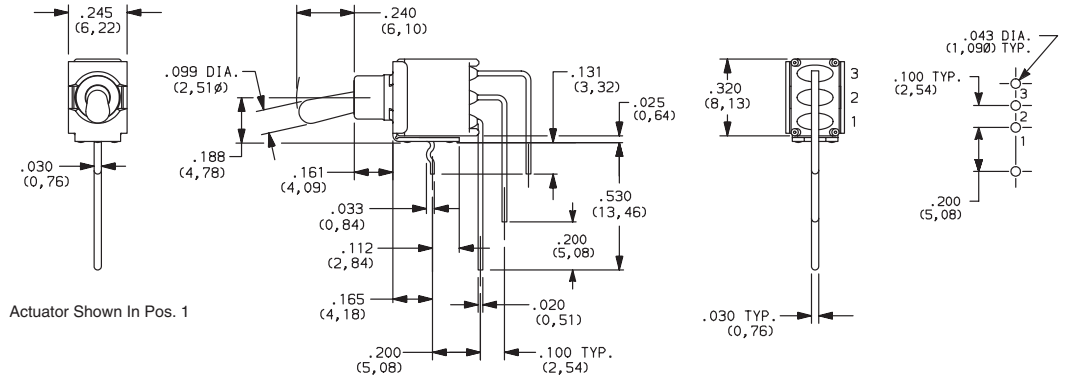


G-Toggle

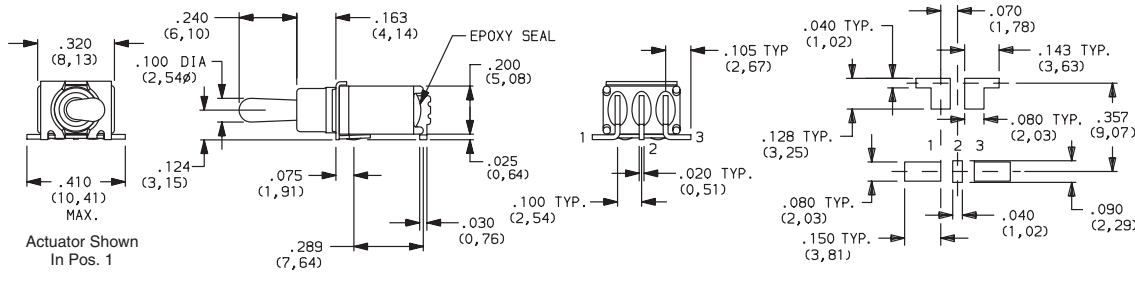
ET Series Sealed Subminiature Toggle Switches

TERMINATIONS

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

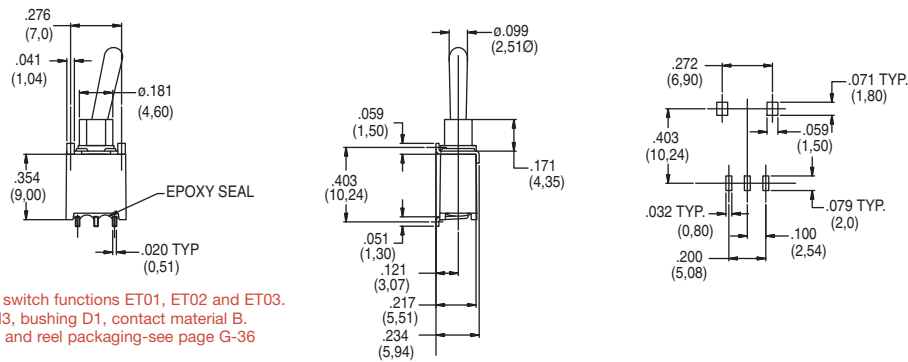


SA RIGHT ANGLE, SURFACE MOUNT



Not available with S and S1 actuators. Standard with tape & reel packaging. See page G-35.

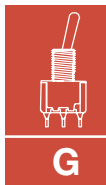
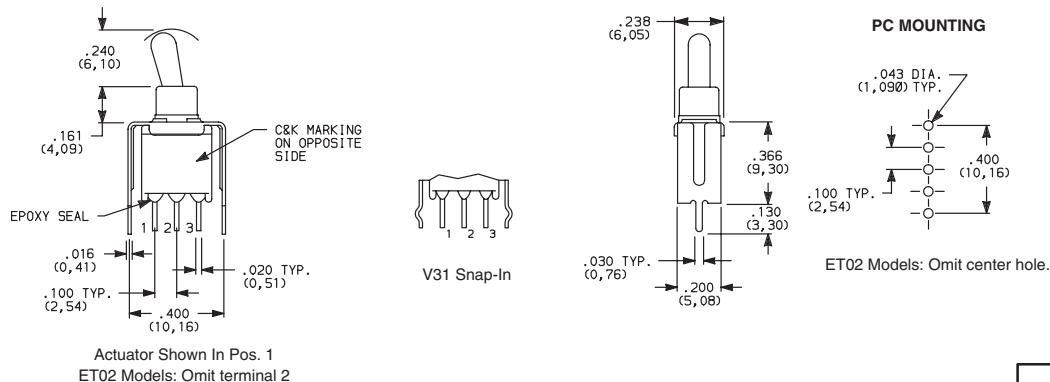
SA1 RIGHT ANGLE, SURFACE MOUNT



Only available with switch functions ET01, ET02 and ET03.
Actuators M and M3, bushing D1, contact material B.
Standard with tape and reel packaging-see page G-36

V3 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Toggle

C&K



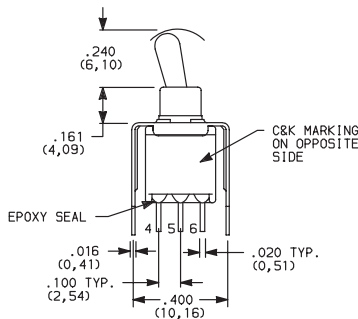
Third Angle Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

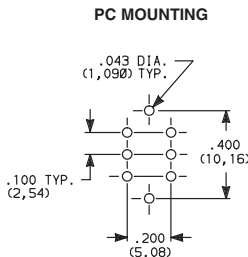
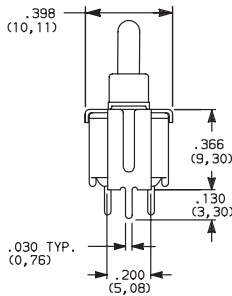
ET Series Sealed Subminiature Toggle Switches

TERMINATIONS

V3 VERTICAL MOUNT, V-BRACKET



Actuator Shown In Pos. 1



ET21MD1V3BE
DPDT

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	ETX1 MODELS: 3 AMPS @ 120 V AC OR 28 V DC ALL OTHER MODELS: 2 AMPS @ 120 V AC OR 28 V DC
S		MATTE-TIN ⁶		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	ETX1 MODELS: 0.4 VA MAX. @ 20 V AC OR DC MAX. OR 3 AMPS @ 120 V AC OR 28 V DC ALL OTHER MODELS: 0.4 VA MAX. @ 20 V AC OR DC MAX. OR 2 AMPS @ 120 V AC OR 28 V DC
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

¹ CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

² END CONTACTS: Coin silver, with gold plate over nickel plate.

³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

⁶ TERMINALS: Copper alloy, with matte tin over nickel plate.

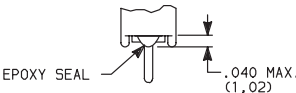
NOTE: Any models supplied with Q, B, G, P or R contact material are RoHS compliant.

All models   with all options (except M3 actuator) when ordered with G, L, R or Q contact material except with F1 conductive bushing.

K, L and M options represent Non RoHS tin lead product and are not recommended for new designs. For additional information please contact Customer Service.

SEAL

E EPOXY SEAL



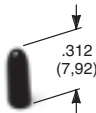
AVAILABLE HARDWARE

Cap

PART NO.

706201000 WHITE
706202000 BLACK
706203000 RED

Material: Vinyl
Finish: Matte



NOTE: Other colors available, consult Customer Service Center.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



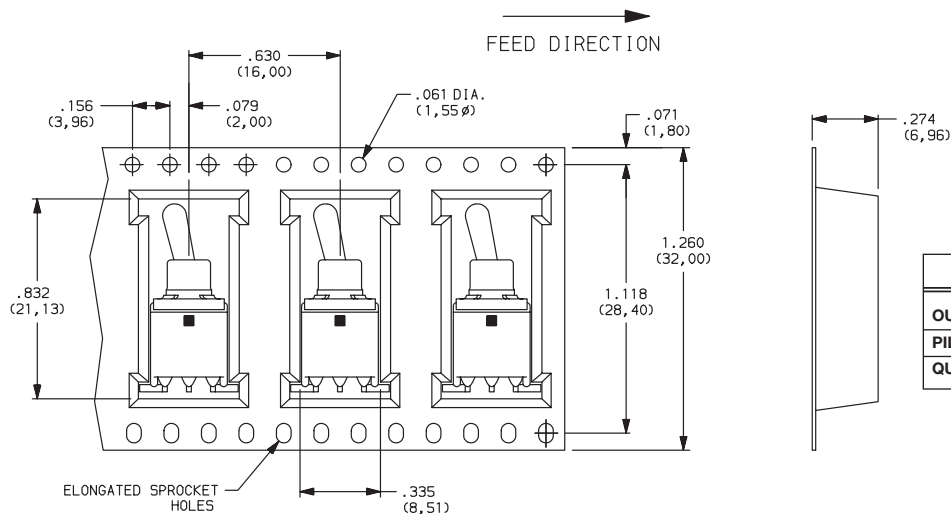
G

Toggle

ET Series Sealed Subminiature Toggle Switches

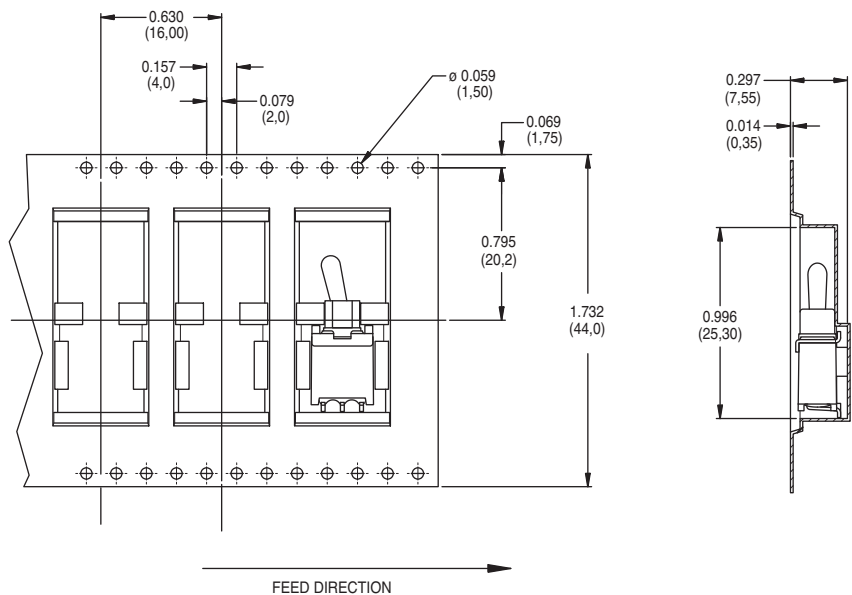
TAPE & REEL

For part number ET01M3D1SAKE

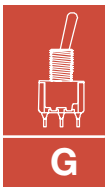


REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600

For part number ET01M3D1SA1BE

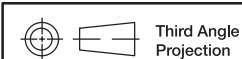


REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.795 (20,20)
QUANTITY PER REEL	500



Toggle

C&K



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

T Series

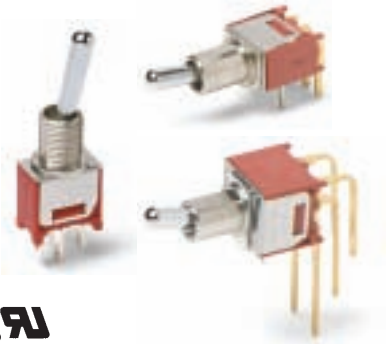
Subminiature Toggle Switches

Features/Benefits

- **Compact size—small footprint**
- **Single and double pole models**
- **PC and panel mount options available**
- **RoHS compliant models available**

Typical Applications

- **Hand-held telecommunications**
- **Instrumentation**
- **Medical equipment**




Models Available

Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material (TX01 models): 3 AMPS @ 120 V AC or 28 V DC. All other models: 2 AMPS @ 120 V AC or 28 V DC. See page G-42 for additional ratings.

ELECTRICAL LIFE: TX01 models: 60,000 make-and-break cycles at full load. All other models: 30,000 cycles.

CONTACT RESISTANCE: Below 20 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

NOTE: Any models supplied with P, R, Q, B or G contact material are RoHS compliant and compatible.

NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Materials

CASE: Glass filled nylon 6/6, flame retardant, heat stabilized or diallyl phthalate (DAP), (UL 94V-0).

ACTUATOR: Brass, chrome plated.

BUSHING: Brass, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass, matte-tin plated.

END CONTACTS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Coin silver, silver plated. See above for additional contact materials.

CENTER CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See page G-42 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut & Locking Ring: Brass, nickel plated. Lockwasher: Steel, nickel plated. Additional hardware available separately, see Section O.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages G-38 thru G-42. For additional options not shown in catalog, consult Customer Service Center. All models have epoxy terminal seal and are compatible with all "bottom-wash" PCB cleaning methods.

Switch Function	Actuator	Bushing	Terminations	Seal
T101 SPDT On-None-On	P3 Flatted,	H .220" high, threaded, flat	A Right angle, PC thru-hole	E Epoxy
T102 SPDT Off-None-On		H9 .220" high, unthreaded, flat	AV Vertical right angle, PC thru-hole	
T103 SPDT On-Off-On		CF Splashproof, .310" high, threaded, flat	C PC Thru-hole	
T105 SPDT Mom.-Off-Mom.	S .370" high	D9 .260" high, unthreaded, keyway	V3 Vertical mount V-bracket	
T107 SPDT On-Off-Mom.	K Locking lever, round tip	T .310" high, threaded, flat	Z Solder lug	
T108 SPDT On-None-Mom.	L1 .620" high	T9 .310" high, unthreaded, flat	W Wire wrap	
T201 DPDT On-None-On	M1 .220" high	TD .260" high, threaded, keyway		
T205 DPDT Mom.-Off-Mom.	S1 .410" high	TK .310" high, threaded, keyway		
T203 DPDT On-Off-On	M .210" high	Y .220" high, threaded, keyway		
T207 DPDT On-Off-Mom.	L .290" high	Y9 .220" high, unthreaded, keyway		
T208 DPDT On-None-Mom.				
T211 DPDT On-On-On.				

Contact Material

- B** Gold
- P** Gold, matte tin
- Q** Silver
- G** Gold over silver
- R** Gold over silver, matte-tin



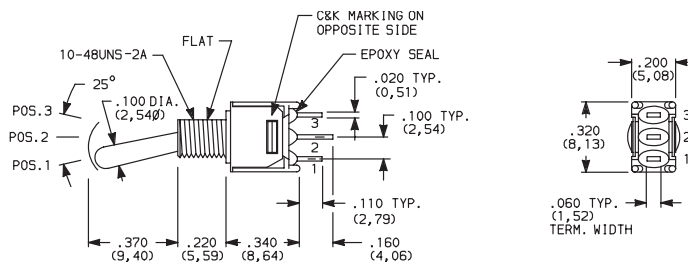
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



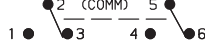
T Series Subminiature Toggle Switches

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		C&K marking on opposite side			C&K marking on opposite side			
SP	T101	ON	NONE	ON	2-3	N/A	2-1	
	T103	ON	OFF	ON	2-3	OPEN	2-1	
	T105	MOM.	OFF	MOM.				
	T107	ON	OFF	MOM.				
	T108	ON	NONE	MOM.				
	T102	OFF	NONE	ON	OPEN	N/A	3-1	SPST 

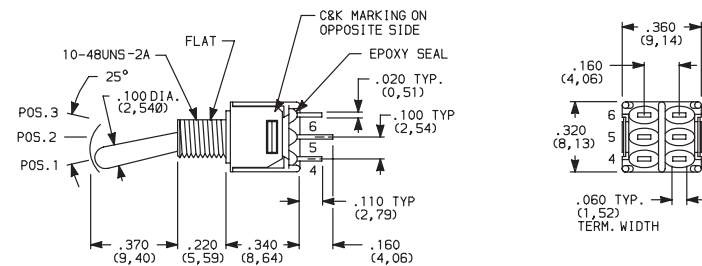
SPDT



Part number shown: T101SHZQE

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		C&K marking on opposite side			C&K marking on opposite side			
DP	T201	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	
	T203	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	T205	MOM.	OFF	MOM.				
	T208	ON	NONE	MOM.	2-3,5-6	N/A	2-1,5-4	
	T211*	ON	ON	ON.	2-3,5-6	2-3,5-4	2-1,5-4	

DPDT

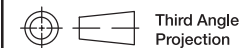


Terminal Nos.
For Reference Only

Part number shown: T201SHZQE

MOM. = Momentary

All models with all options when ordered with G, L, R or Q contact material.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



Toggle

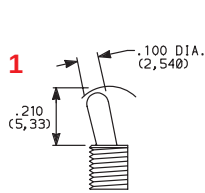


T Series Subminiature Toggle Switches

ACTUATOR

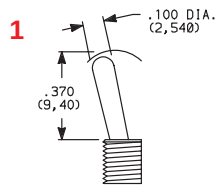


M .210" HIGH



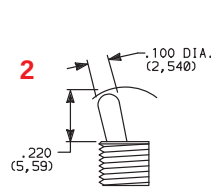
Standard with A, AV or V3 terminations.

S .370" HIGH

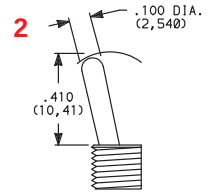


Standard with Z, C or W terminations.

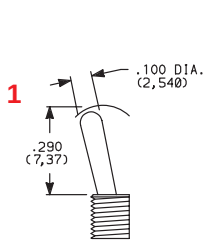
M1 .220" HIGH
(with "T" bushing)



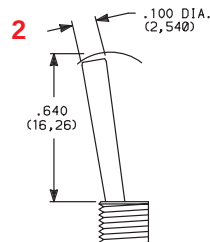
S1 .410" HIGH
(with "T" bushing)



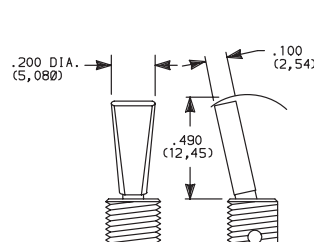
L .290" HIGH



L1 .620" HIGH



P3 ANTI-ROTATION, FLATTED,
.450" HIGH



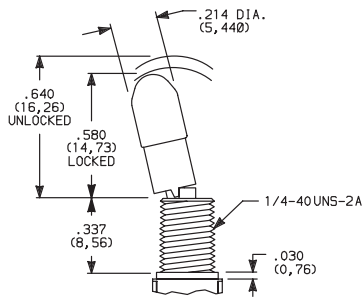
Available with T & T9 bushings only.
Dress nut part number 709901201
supplied standard with threaded bushing.

¹ Actuator shown with standard H bushing.
Subtract .040 (1,02) for TD and D9 bushings,
subtract .090 (2,29) for T, T9, TK, K9 &
CF bushings.

² Actuators shown with T, T9, TK & CF bushings,
add .050 (1,27) for TD and D9 bushings,
add .090 (2,29) for H, H9, Y & Y9 bushings.

All actuators have chrome finish (except K).

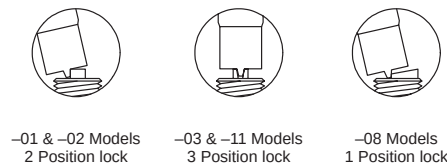
K LOCKING LEVER



Not available with CF bushing option.

Bushing option code not required. Not available with TX05 & TX07 models.

Locking Positions



K actuators have natural aluminum finish.

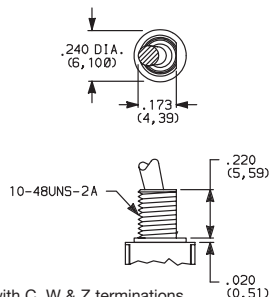
Keyway on right side. To prevent accidental actuation, toggles
must be lifted before being actuated. When released, toggles
again lock in place. Overtightening mounting nut may cause
actuator to bind.

BUSHING



H .220" HIGH THREADED, FLAT

H9 .220" HIGH UNTHREADED, FLAT

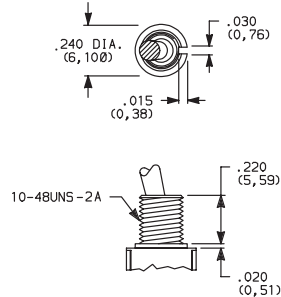


H standard with C, W & Z terminations.

H9 standard with A, AV & V3 terminations.

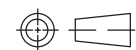
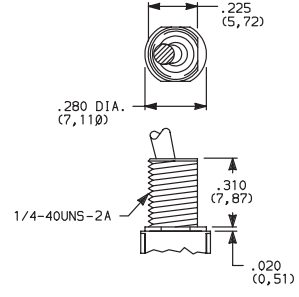
Y .220" HIGH THREADED, KEYWAY

Y9 .220" HIGH UNTHREADED, KEYWAY



T .310" HIGH THREADED, FLAT

T9 .310" HIGH UNTHREADED, FLAT



Third Angle
Projection

Dimensions are shown: Inch (mm)

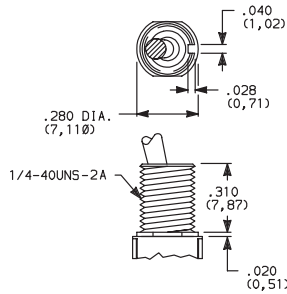
Specifications and dimensions subject to change

C&K

T Series Subminiature Toggle Switches

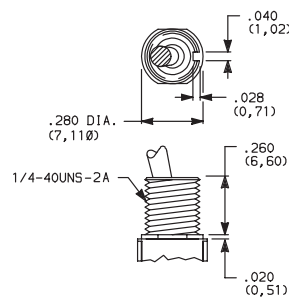
BUSHING

TK .310" HIGH THREADED, KEYWAY

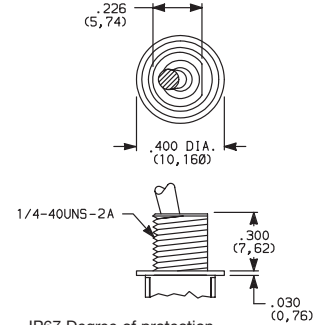


TD .260" HIGH THREADED, KEYWAY

D9 .260" HIGH UNTHREADED, KEYWAY

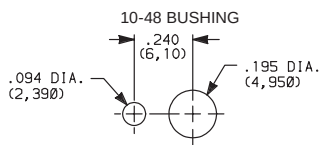


CF SPLASHPROOF, .310" HIGH THREADED, FLAT

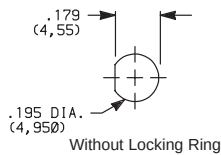


IP67 Degree of protection.
Internal o-ring actuator seal and
external bushing seal washer standard.

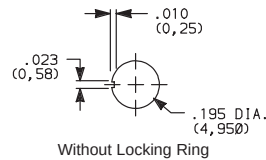
Not available with K locking lever option.



With Standard Locking Ring

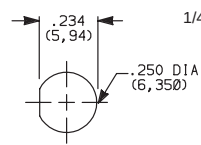


Without Locking Ring

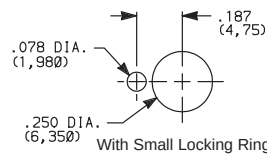


Without Locking Ring

PANEL MOUNTING

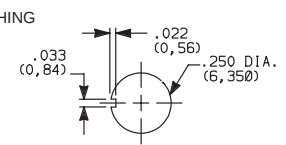


Without Locking Ring

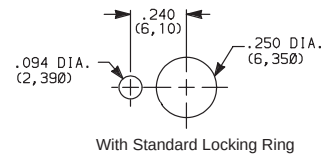


With Small Locking Ring

1/4 IN. BUSHING



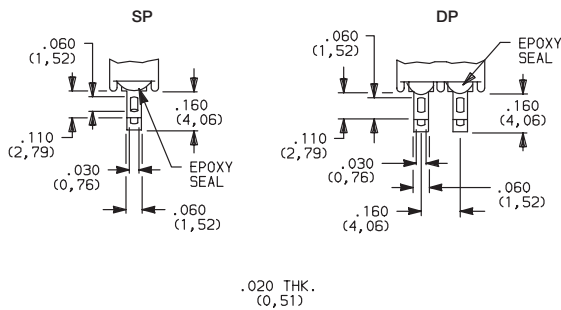
Without Locking Ring



With Standard Locking Ring

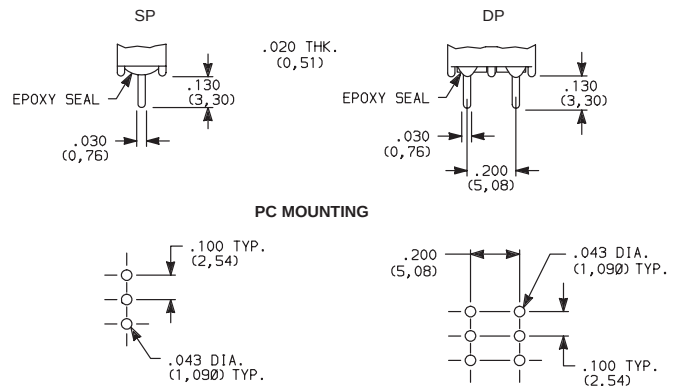
TERMINATIONS

Z SOLDER LUG



Not available with P or R contact materials.

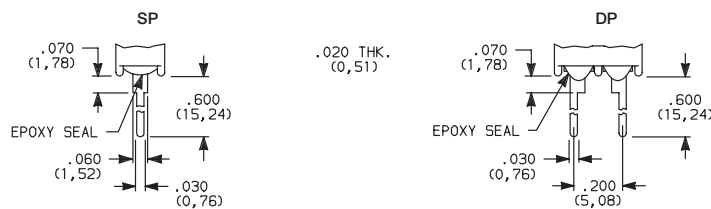
C PC THRU-HOLE



T102 - omit center hole.

PC MOUNTING

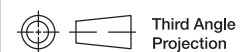
W WIRE WRAP



G

Toggle

C&K

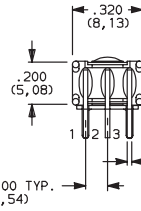
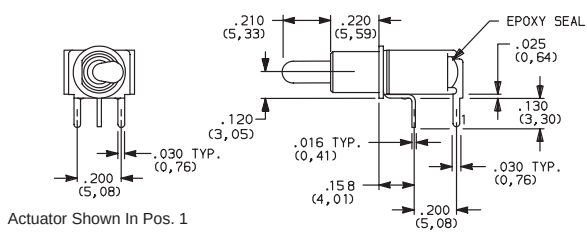


Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

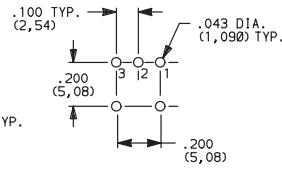
T Series Subminiature Toggle Switches

TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE

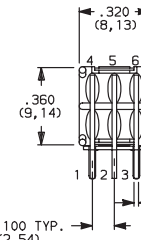
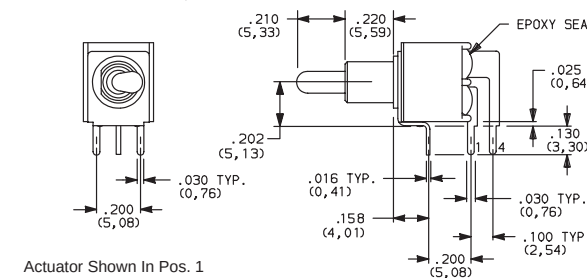


PC MOUNTING

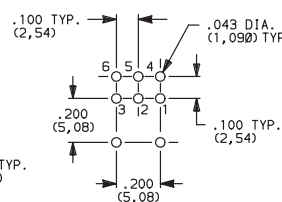


T101MH9ABE
Horizontal Actuation
SPDT

A RIGHT ANGLE, PC THRU-HOLE

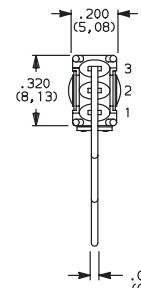
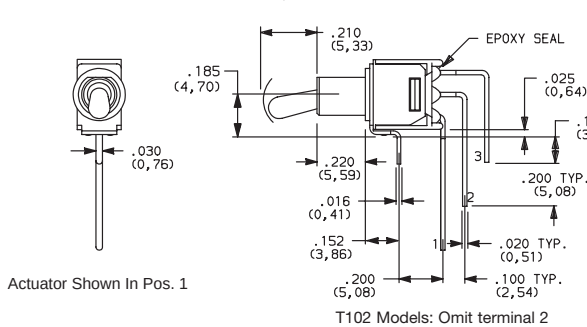


PC MOUNTING

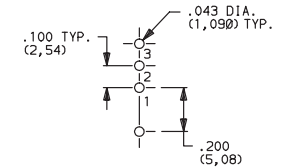


T201MH9ABE
Horizontal Actuation
DPDT

AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



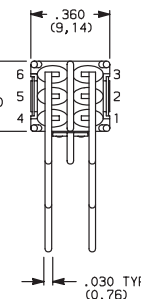
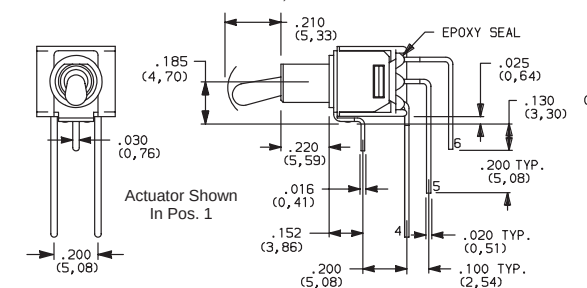
PC MOUNTING



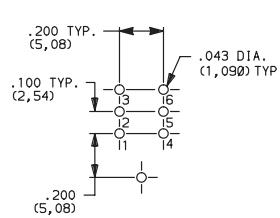
T101MH9AVBE
Vertical Actuation
SPDT

NOTE: Terminal bend radii and lead-in manufacturing option.

AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



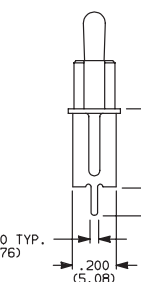
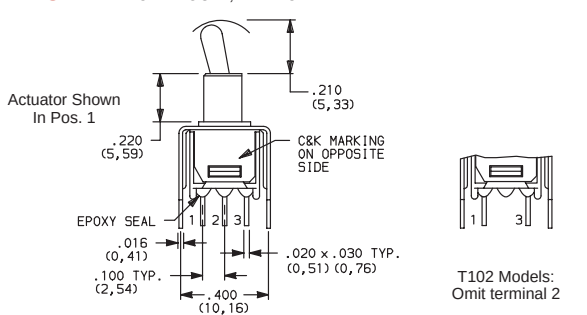
PC MOUNTING



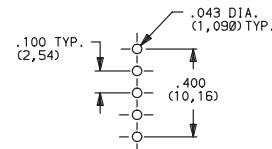
T201MH9AVBE
Vertical Actuation
DPDT

NOTE: Terminal bend radii and lead-in manufacturing option.

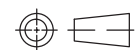
V3 VERTICAL MOUNT, V-BRACKET



PC MOUNTING



T101MH9V3BE
SPDT



Third Angle
Projection

C&K

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



G

Toggle

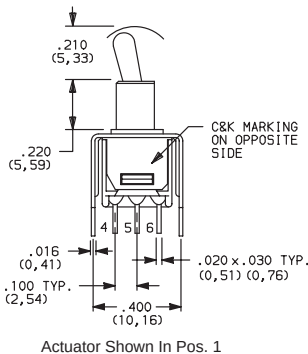
T Series Subminiature Toggle Switches

TERMINATIONS

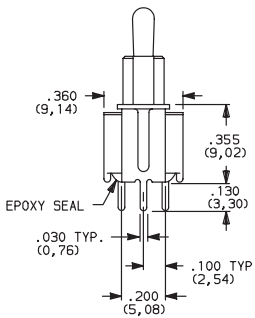
V3 VERTICAL MOUNT, V-BRACKET



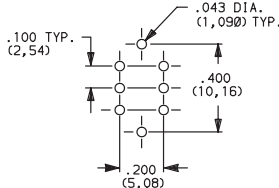
T201MH9V3BE
DPDT



Actuator Shown In Pos. 1



PC MOUNTING



CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/ DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	TX01 MODELS: 3 AMPS @ 120 V AC OR 28 V DC. ALL OTHER MODELS: 2 AMPS @ 120 V AC OR 28 V DC.
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	TX01 MODELS: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 3 AMPS @ 120 V AC OR 28 V DC. ALL OTHER MODELS: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 2 AMPS @ 120 V AC OR 28 V DC.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

- ¹ CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.
² END CONTACTS: Coin silver, with gold plate over nickel plate.
³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
⁴ END CONTACTS: Coin silver, silver plated.
⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.
⁶ TERMINALS: Copper alloy, with matte-tin over nickel plate.

NOTE: Any models supplied with P, R, Q, B or G contact material are RoHS compliant. For the latest information regarding RoHS compliance, please go to: www.ittcannon.com/rohs.

All models  with all options when ordered with R, G, L or Q contact material.

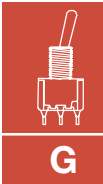
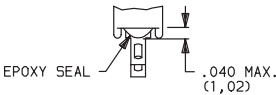
B contact material standard with A, AV, V3 & W terminations.

Q contact material standard with C & Z terminations.

K, L and M options represent Non RoHS tin lead product and are not recommended for new designs. For additional information please contact Customer Service.

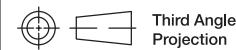
SEAL

E EPOXY SEAL



Toggle

C&K



Third Angle
Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

www.ck-components.com

GT Series Sealed Ultraminiature Toggle Switches

Features/Benefits

- Sealed against solder and cleaning process contaminants
- Ultraminiature size, smallest footprint available
- Thru-hole and surface mount models
- High temperature materials (UL 94V-0)
- RoHS compliant and compatible

Typical Applications

- Hand-held telecommunications
- Small instrumentation



Specifications

CONTACT RATING: 0.4 VA max. @ 20 V AC or DC max.
 MECHANICAL & ELECTRICAL LIFE: 40,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: Below 50 m Ω typ. initial @ 2-4 V DC, 100 mA.
 INSULATION RESISTANCE: $10^9 \Omega$ min.
 DIELECTRIC STRENGTH: 500 Vrms min. @ sea level.
 OPERATING TEMPERATURE: -30°C to 85°C.
 SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).
 PACKAGING: Surface mount switches shipped in anti-static tape and reel packaging per EIA 481-3, see page G-47 for drawings and reel information. Tape and cover strip are conductive for use near statically sensitive components, consult Customer Service Center.

Materials

HOUSING AND BASE: Glass filled nylon 6/6 or 4/6, flame retardant, heat stabilized (UL 94V-0).
 ACTUATOR: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0), with standard internal o-ring seal.
 SWITCH SUPPORT: Brass, tin plated.
 MOVABLE CONTACTS: Copper alloy, with gold plate over nickel plate.
 STATIONARY CONTACTS: Copper alloy, with gold plate over nickel plate.
 TERMINALS: Gold.
 TERMINAL SEAL: Epoxy. All terminals insert molded.

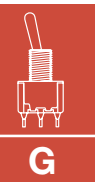
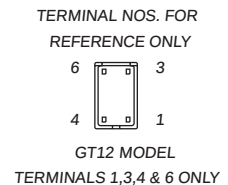
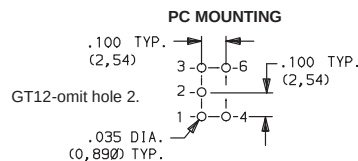
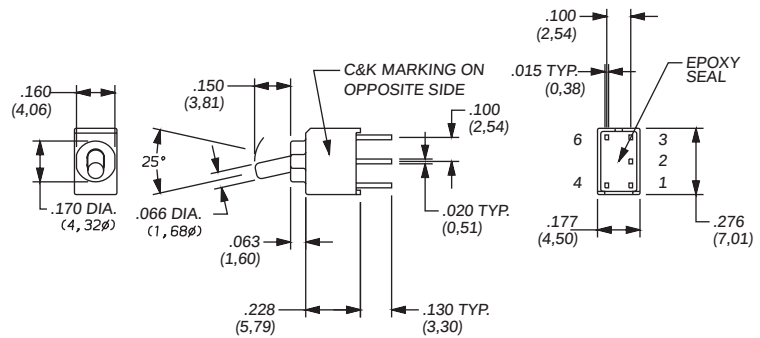
NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

How To Order

Complete part numbers for GT Series Sealed Ultraminiature Toggle Switches are shown on pages G-43 thru G-47.



PART NUMBER	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
GT11MCBE	ON	NONE	ON
GT13MCBE	ON	OFF	ON
Conn. Terms.	2-3	OPEN	2-1
Schematic			
SPDT	Note: Pins 4 and 6 not connected		
GT12MCBE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic			
SPST	Note: Pins 4 and 6 not connected		

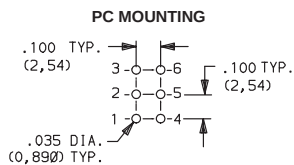
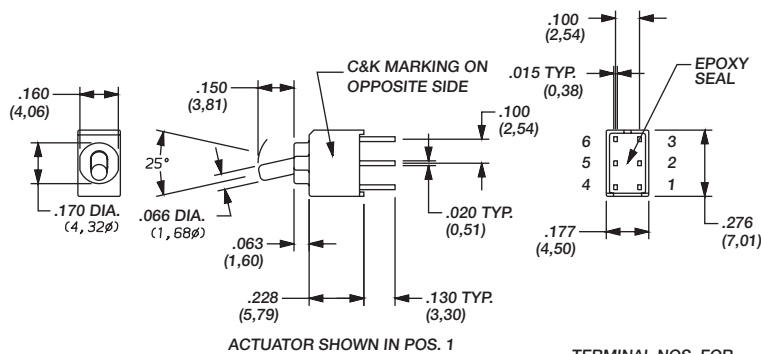


Toggle

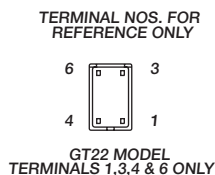


Dimensions are shown: Inch (mm)
 Specifications and dimensions subject to change

GT Series Sealed Ultraminiature Toggle Switches



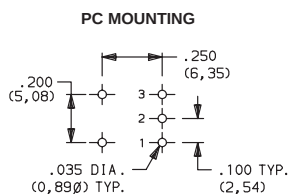
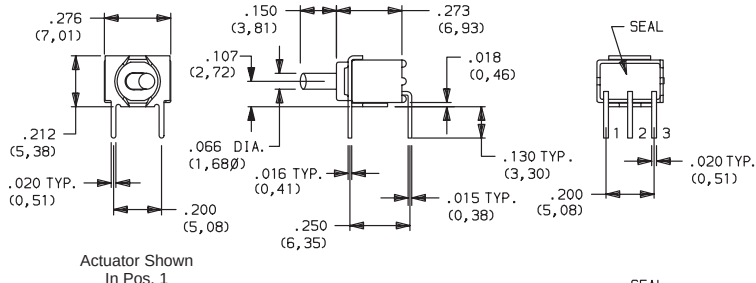
GT22-omit holes 2 & 5.



PART NUMBER	SWITCH FUNCTION		
	POS.1	POS. 2	POS. 3
GT21MCBE	ON	NONE	ON
GT23MCBE	ON	OFF	ON
Conn. Terms.	2-3, 5-6	OPEN	2-1, 5-4
Schematic			
DPDT			
GT22MCBE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic			
DPST			



GT21MCBE
DPDT



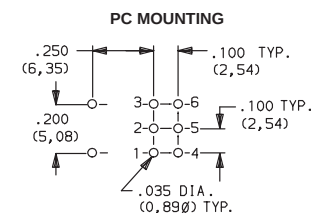
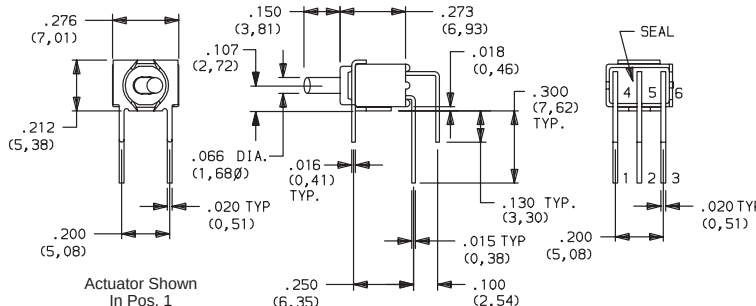
GT12-omit hole 2.

GT12 Models

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS. 2	POS. 3
GT11MABE	ON	NONE	ON
GT13MABE	ON	OFF	ON
Conn. Terms.	2-3	OPEN	2-1
Schematic			
SPDT			
GT12MABE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic			
SPST			



GT11MABE
Horizontal
Actuation
SPDT



GT22-omit holes 2 & 5.

GT22 Models

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS. 2	POS. 3
GT21MABE	ON	NONE	ON
GT23MABE	ON	OFF	ON
Conn. Terms.	2-3, 5-6	OPEN	2-1, 5-4
Schematic			
DPDT			
GT22MABE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1, 6-4
Schematic			
DPST			



GT21MABE
Horizontal
Actuation
DPDT



Toggle

C&K



Third Angle Projection

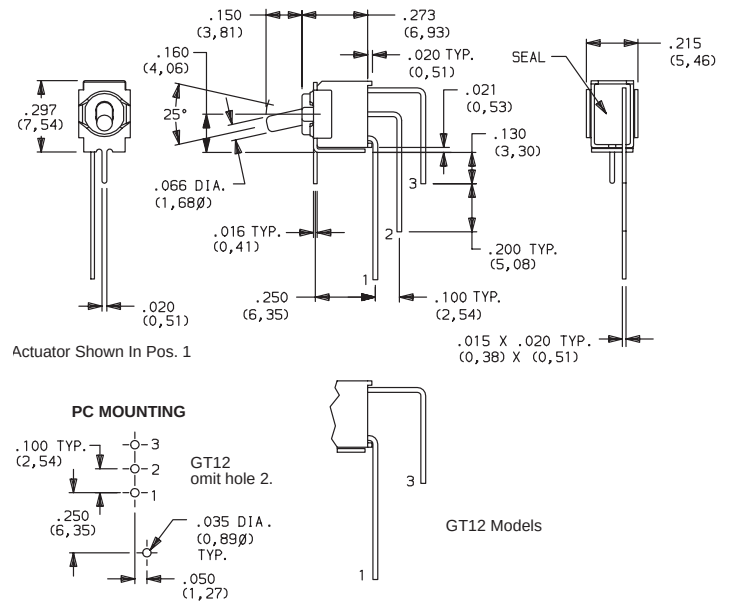
Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

GT Series Sealed Ultraminiature Toggle Switches



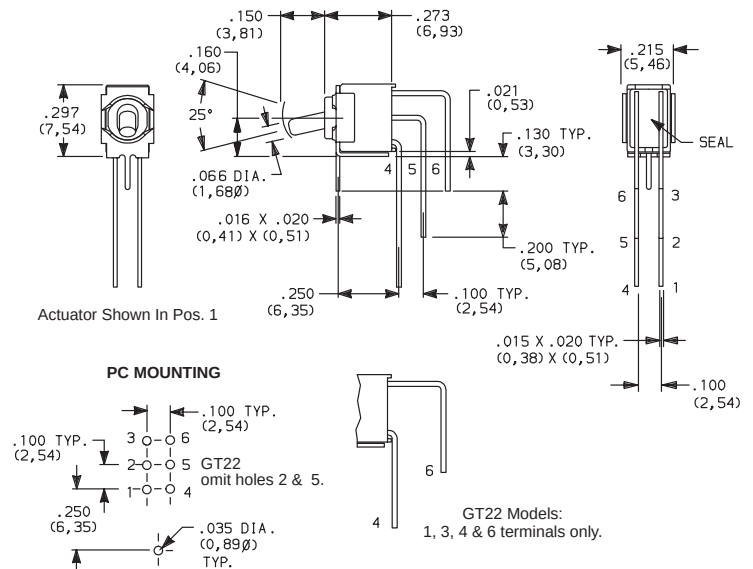
GT11MAVBE
Vertical
Actuation
SPDT

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS.2	POS.3
GT11MAVBE	ON	NONE	ON
GT13MAVBE	ON	OFF	ON
Conn. Terms.	2-3	OPEN	2-1
Schematic			
SPDT			
GT12MAVBE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic			
SPST			



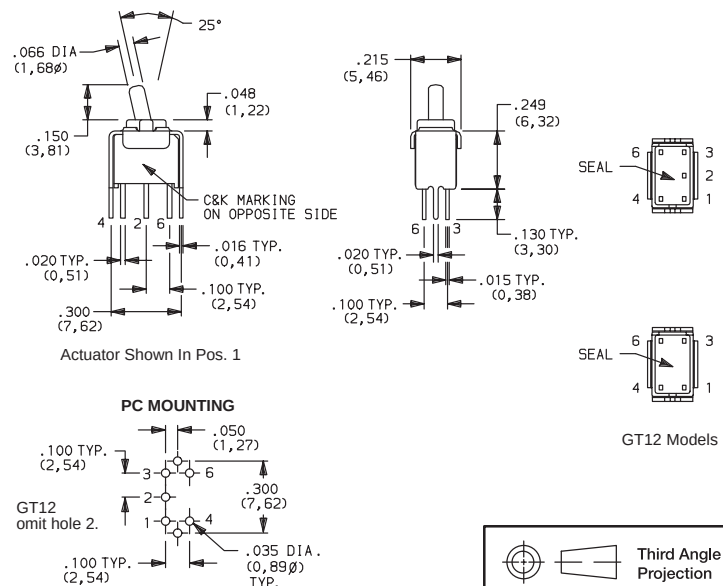
GT21MAVBE
Vertical
Actuation
DPDT

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS.2	POS.3
GT21MAVBE	ON	NONE	ON
GT23MAVBE	ON	OFF	ON
Conn. Terms.	2-3, 5-6	OPEN	2-1, 5-4
Schematic			
DPDT			
GT22MAVBE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1, 6-4
Schematic			
DPST			

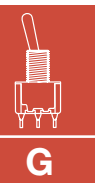


GT11MV3BE
SPDT

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS.2	POS.3
GT11MV3BE	ON	NONE	ON
GT13MV3BE	ON	OFF	ON
Conn. Terms.	2-3	OPEN	2-1
Schematic			
SPDT	Note: Pins 4 and 6 not connected		
GT12MV3BE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic			
SPST	Note: Pins 4 and 6 not connected		



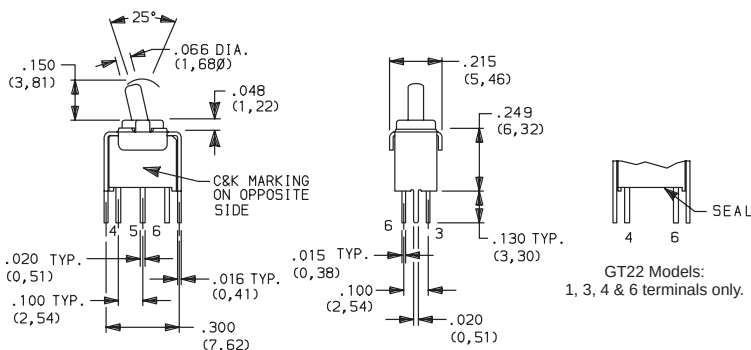
C&K



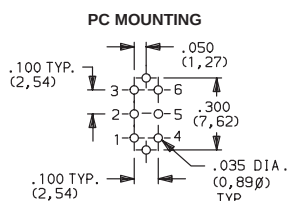
GT Series Sealed Ultraminiature Toggle Switches



GT21MV3BE
DPDT



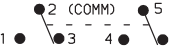
Actuator Shown
In Pos. 1



PC MOUNTING

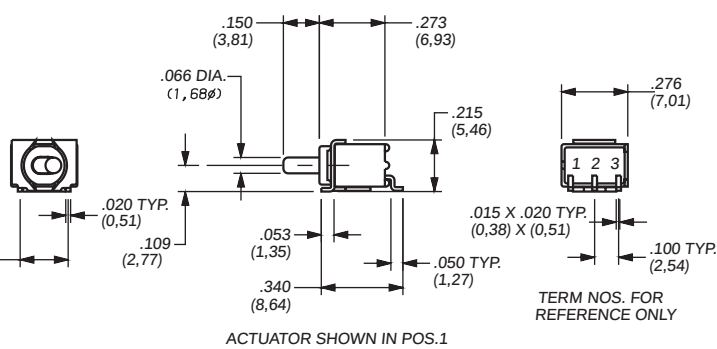


GT22 Models:
1, 3, 4 & 6 terminals only.

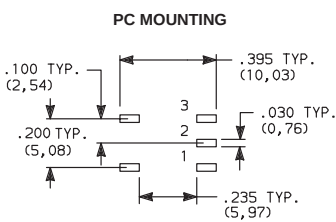
PART NUMBER	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
			
GT21MV3BE	ON	NONE	ON
GT23MV3BE	ON	OFF	ON
Conn. Terms.	2-3, 5-6	OPEN	2-1, 5-4
Schematic			
			
DPDT			
GT22MV3BE	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1, 6-4
Schematic			
			
DPST			



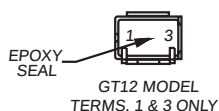
GT11MSABE
Horizontal
Actuation
SPDT



ACTUATOR SHOWN IN POS.1



PC MOUNTING

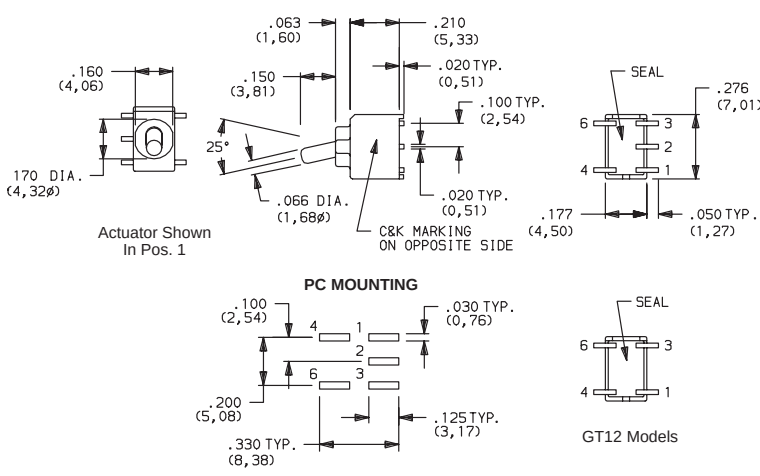


TERM NOS. FOR
REFERENCE ONLY

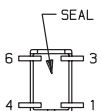
TERMS. 1 & 3 ONLY

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS. 2	POS. 3
GT11MSABETR GT13MSABETR	ON ON	NONE OFF	ON ON
Conn. Terms.	2-3	OPEN	2-1
Schematic 			
SPDT			
GT12MSABETR	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic 			
SPST			

Standard with tape & reel packaging, see page G-47.

GT11MSCBE
SPDT

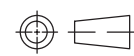
GT12-omit pad 2.



GT12 Models

PART NUMBER	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
			
GT11MSCBETR	ON	NONE	ON
GT13MSCBETR	ON	OFF	ON
Conn. Terms.	2-3	OPEN	2-1
Schematic 			
SPDT	Note: Pins 4 and 6 not connected		
GT12MSCBETR	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1
Schematic 			
SPST	Note: Pins 4 and 6 not connected		

Standard with tape & reel packaging, see page G-47.



Third Angle Projection

Dimensions are shown: Inch (mm)
 s and dimensions subject to change

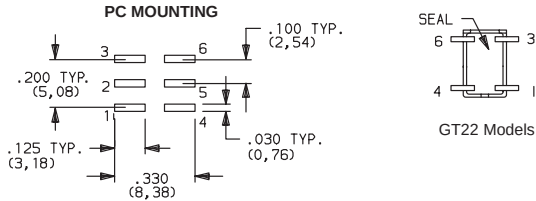
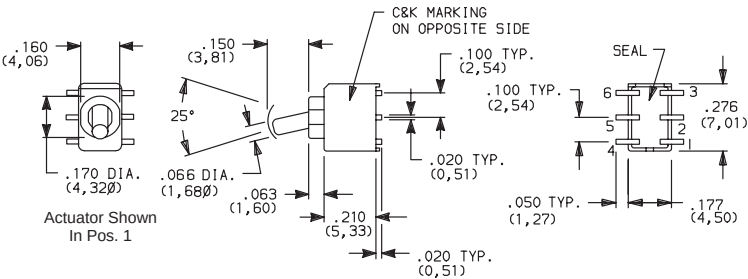
GT Series Sealed Ultraminiature Toggle Switches

SMT



GT21MSCBE
DPDT

PART NUMBER	SWITCH FUNCTION		
	POS.1	POS. 2	POS. 3
GT21MSCBETR	ON	NONE	ON
GT23MSCBETR	ON	OFF	ON
Conn. Terms.	2-3, 5-6	OPEN	2-1, 5-4
Schematic			
DPDT			
GT22MSCBETR	OFF	NONE	ON
Conn. Terms.	OPEN	N/A	3-1, 6-4
Schematic			
DPST			

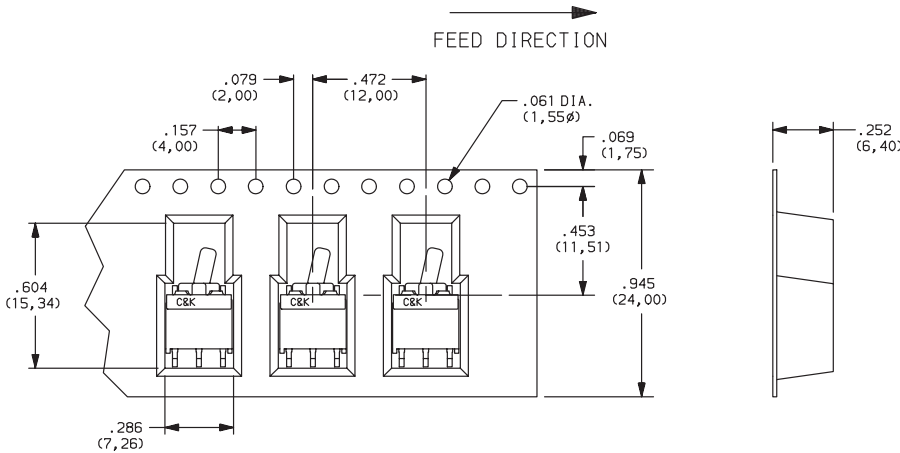


GT22-omit pads 2 & 5.

Standard with tape & reel packaging, see page G-47.

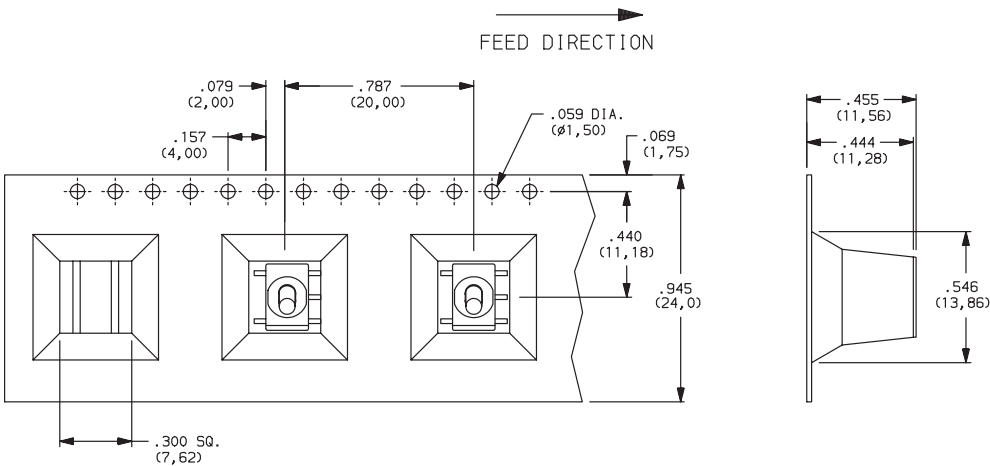
TAPE & REEL

For part numbers GT11MSABE, GT12MSABE, GT13MSABE

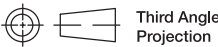


REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600

For part numbers GT11MSCBE, GT12MSCBE, GT13MSCBE, GT21MSCBE, GT22MSCBE, GT23MSCBE,



REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	200



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

www.ck-components.com



9000 Series

Power Toggle Switches

Features/Benefits

- Power ratings up to 10 AMPS
- Double pole models
- Locking lever options available
- Wide variety of actuator styles
- RoHS compliant and compatible

Typical Applications

- Shut-off switch
- Small equipment



Specifications

CONTACT RATING: 9201 Model: 6 AMPS @ 120 V AC or 28 V DC; 3 AMPS @ 250 V AC. 9221 Model: 10 AMPS @ 125 V AC or 28 V DC; 5 AMPS @ 250 V AC.

ELECTRICAL LIFE: 25,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 10 m Ω typ. initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: 10⁹ Ω min.

DIELECTRIC STRENGTH: 2,500 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

NOTE: Any models supplied with Q contact material are RoHS compliant and compatible.

NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Materials

CASE: Diallyl phthalate (DAP) (UL 94V-0).

ACTUATOR: Brass, chrome plated.

BUSHING: Brass or zinc, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

END CONTACTS: 9201 Model: Coin silver, silver plated.
9221 Model: Silver cadmium oxide.

CENTER CONTACTS: Copper alloy, silver plated

ALL TERMINALS: 9201 Model: Copper alloy, silver plated.
9221 Model: Copper alloy, matte-tin plated.

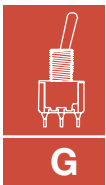
TERMINAL SEAL: Epoxy.

HARDWARE: Nut & Locking ring: Brass, nickel plated.
Lockwasher: Steel, nickel plated.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages G-49 thru G-53. For additional options not shown in catalog, consult Customer Service Center.

Switch Function 9201 DPDT, On-On, 6 Amps 9221 DPDT, On-On, 10 Amps	Actuator S Antirotation, .410" high K Locking lever, .650" high K1 Locking lever, .680" high L43 Lever handle with cap P3 Flatted, anti-rotation, .450" high T .687" high, 15/32 bushing T1 .460" high, 15/32 bushing	Bushing H3 .296" high, keyway CW Splashproof H .296" high, flat	Terminations Z Solder lug Z4 Quick connect (9221 only) AV2 Vert. right angle, PC thru-hole (9201 only) C PC Thru-hole	Contact Material Q Silver	Seal E Epoxy D No epoxy	Actuator Color/Finish NONE Bright chrome 2 Black	Bushing Finish NONE Nickel 2 Black	KXX Actuator Color/Finish NONE Natural aluminum 2 Black anodized aluminum
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Toggle



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

9000 Series Power Toggle Switches

SWITCH FUNCTION

NO. POLES	MODEL NO.	RATING*	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
			POS. 1	POS. 2	POS. 1	POS. 2	
			KEYWAY	KEYWAY	KEYWAY	KEYWAY	
DP	9201	6 AMPS	ON	ON	2-3,5-6	2-1,5-4	
	9221	10 AMPS	ON	ON			

DPDT

Part number shown: 9201SH3ZQE

Terminal Nos. Molded On Side Of Case

* See CONTACT MATERIAL, page G-52, for complete ratings.

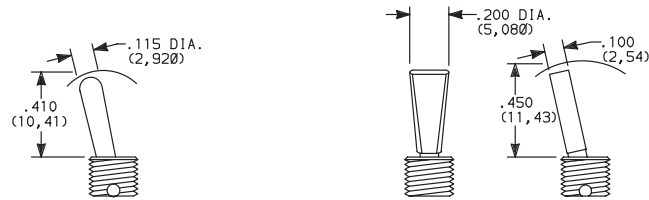
All 9000 Series models meet international dimensional and electrical requirements.

9221 model must be ordered with Z4 terminations and D seal option.

ACTUATOR

S ANTIROTATION, .410" HIGH

P3 FLATTED, ANTIROTATION, .450" HIGH



OPTION CODE	ACTUATOR FINISH
NONE	NATURAL ALUMINUM—With Nickel Plated Bushing
2	BLACK

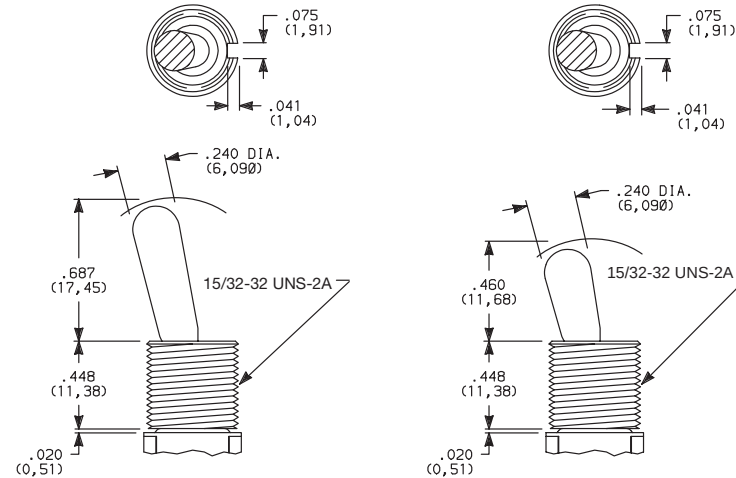
NOTE: Black hardware is supplied when either black actuators or bushings are specified. All hardware is available separately, see Section O.

Antirotation is standard on all actuators, provides 'anti-push-in' feature on actuator.

Dress nut part number: 709901201 supplied standard with P3 actuator.

T .687" HIGH, 15/32 BUSHING

T1 .460" HIGH, 15/32 BUSHING

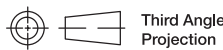


OPTION CODE	ACTUATOR FINISH
NONE	BRIGHT CHROME—With Nickel Plated Bushing
2	BLACK

NOTE: Bushing option code not required for T & T1 actuators unless CW splashproof bushing ordered.

Black hardware is supplied when either black actuators or bushings are specified. All hardware is available separately, see Section O.

Antirotation is standard on all actuators except T & T1, provides 'anti-push-in' feature on actuator.



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

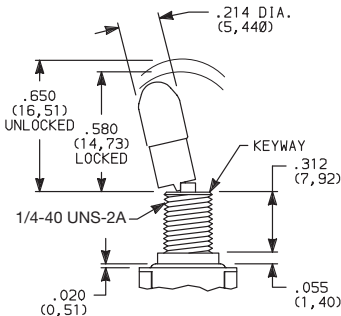
C&K



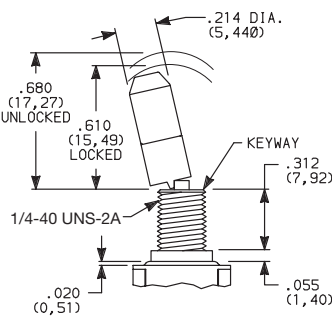
9000 Series
Power Toggle Switches

ACTUATOR

K LOCKING LEVER, .650" HIGH, THREADED



K1 LOCKING LEVER, .680" HIGH, THREADED



Locking Positions

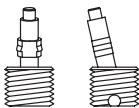


2 Position Lock

NOTE: To prevent accidental actuation, toggles must be lifted before being actuated. When released, toggles again lock in place. Bushing option code not required. Overtightening mounting nut may cause actuator to bind.

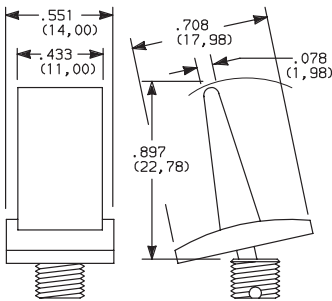
OPTION CODE	ACTUATOR CAP FINISH
NONE	NATURAL ALUMINUM—With Nickle Plated Bushing
2	BLACK ANODIZED ALUMINUM

L40 LEVER HANDLE WITHOUT CAP



No color choice required.

L43 PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4812



Finish: Matte

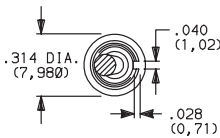
OPTION CODE	ACTUATOR CAP COLOR
2	BLACK
NONE	No Actuator Color (L40 option)

Other colors available, consult Customer Service Center.

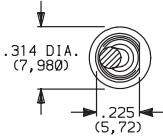
NOTE: Lever handle actuator L43 supplied, but not installed. For interchangeability, order L40 actuator option and order lever handles separately, see page G-53. Antirotation is standard on all actuators, provides 'anti-push-in' feature.

BUSHING

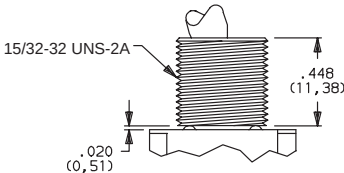
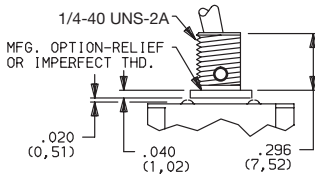
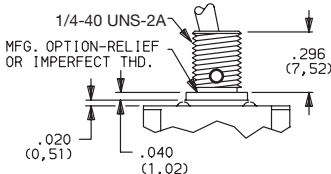
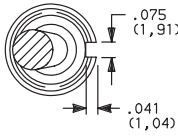
H3 .296" HIGH, THREADED, KEYWAY



H .296" HIGH, THREADED, FLAT



CW SPLASHPROOF, 15/32 BUSHING



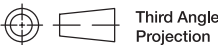
OPTION CODE	BUSHING FINISH
NONE	NICKEL
2	BLACK

Will withstand 12 in./lbs. of torque with no distortion.

For T & T1 actuators only.

NOTE: Two mounting nuts, locking ring and lockwasher supplied standard with threaded bushings. Black hardware is supplied when either black bushings or actuators are specified. Optional mounting nut and locking ring styles and finishes available, see Section O.

Internal actuator seal standard. External bushing seal washer available separately, order from: Multi-Flex Seals, Inc., Hackensack, NJ. Part number: MFS-60064.



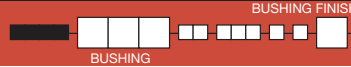
Third Angle Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



9000 Series Power Toggle Switches

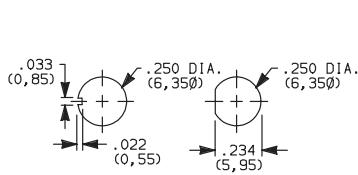
BUSHING



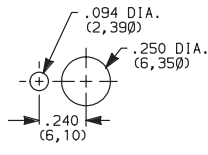
PANEL MOUNTING

1/4-40 UNS-2A

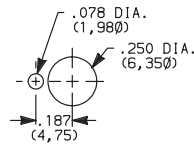
15/32-32 UNS-2A



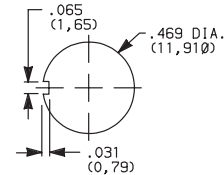
Without locking ring.



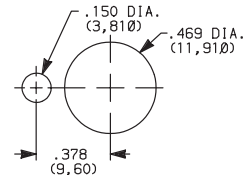
With standard locking ring.



With small locking ring.



Without locking ring.

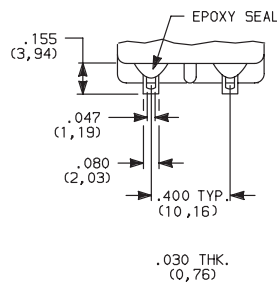


With standard locking ring.

TERMINATIONS

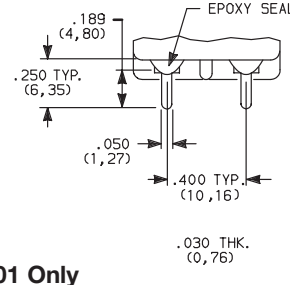


Z SOLDER LUG



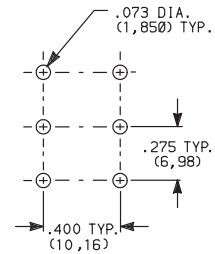
9201 Only

C PC THRU-HOLE



9201 Only

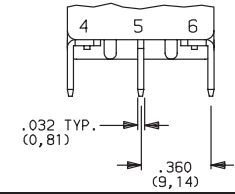
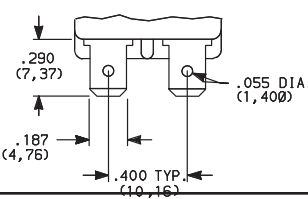
PC MOUNTING



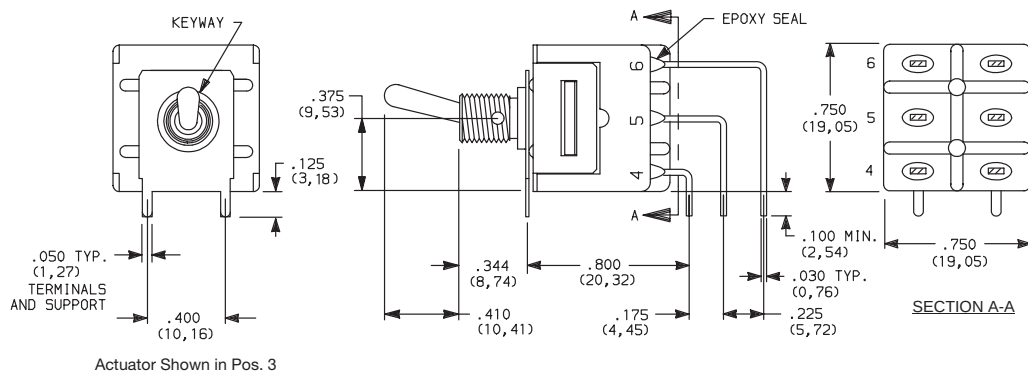
Z4 .187" QUICK CONNECT

9221 Only

NOTE: Only termination available with 9221 model. Must be ordered with D seal option. Mates with standard .187 Nema female connector.



AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE



Actuator Shown in Pos. 3

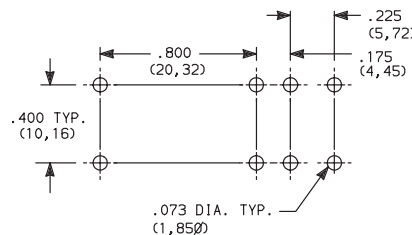


9201SH3AV2QE
Vertical Actuation
DPDT

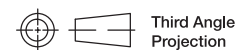
9201 Only

NOTE: Terminal bend radii and lead-in manufacturing option. Terminal spacing greater than 3mm at all points.

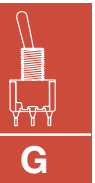
PC MOUNTING



Terminal Nos.
For Reference Only



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change



Toggle

9000 Series Power Toggle Switches

CONTACT MATERIAL

OPTION CODE	MODEL	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
Q	9201	SILVER 1,2	SILVER OR TIN 2,5	POWER	6 AMPS @120 V AC OR 28 V DC; 3 AMPS @ 250 V AC.
	9221	SILVER CADMIUM OXIDE 3,4,6	TIN 5		10 AMPS @125 V AC OR 28 V DC; 5 AMPS @ 250 V AC.

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

- 1 END CONTACTS: Coin silver, silver plated.
- 2 CENTER CONTACTS & ALL TERMINALS: Copper alloy, silver plated.
- 3 END CONTACTS: Silver cadmium oxide.
- 4 CENTER CONTACTS: Copper alloy, silver plated.
- 5 Z4 TERMINALS ONLY: Copper alloy, matte-tin plated.
- 6 Cadmium in electrical switch contacts is exempt from RoHS.

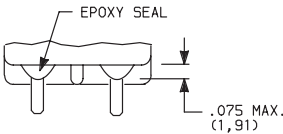
NOTE: Any models supplied with Q contact material are RoHS compliant.

All 9000 Series models meet international dimensional and electrical requirements.   

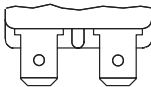
9221 model must be ordered with Z4 terminations and D seal option.

SEAL

- E EPOXY SEAL
- D NO EPOXY SEAL



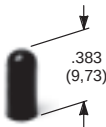
Not available with 9221 model or Z4 terminations.



Must be ordered with 9221 model and Z4 termination.

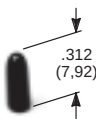
AVAILABLE HARDWARE

Cap
Compatible with S actuator



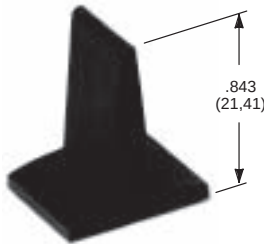
PART NO.
896801000 WHITE
896802000 BLACK
896803000 RED
Material: Polyethylene
Finish: Matte

Cap
Compatible with S actuator



PART NO.
706201000 WHITE
706202000 BLACK
706203000 RED
Material: Vinyl
Finish: Matte

L43 Actuator



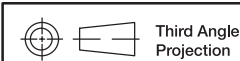
PART NO.
481202000 BLACK
481203000 RED
Material: Nylon
Finish: Matte

NOTE: Additional nuts, locking rings and lockwashers available separately, see Section O.

Other colors available, consult Customer Service Center.



Toggle



Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change