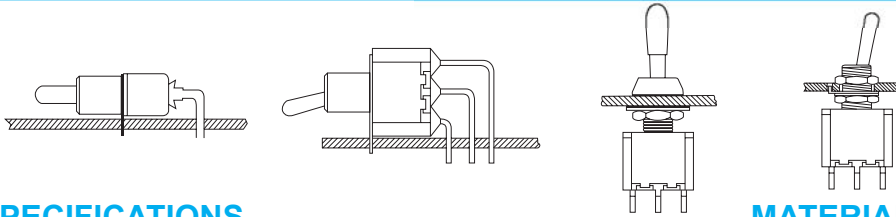




# T80-T

## Miniature Toggle Switches



### SPECIFICATIONS

CONTACT RATING: 5A @125 VAC or 28 VDC (Q contact)  
 ELECTRICAL LIFE: 50,000 make-and-break cycles at full load  
 CONTACT RESISTANCE: 10 mΩ max. initial @2-4 VDC, 100 mA  
 INSULATION RESISTANCE: 1,000 MΩ min.  
 DIELECTRIC STRENGTH: 1,500 V RMS @ sea level.  
 OPERATING TEMPERATURE: -30°C to +85°C

### MATERIALS

CASE - diallyl phthalate ( DAP )  
 TOGGLE HANDLE - Copper alloy , chrome plated  
 BUSHING - Copper alloy , nickel plated  
 HOUSING - Stainless Steel  
 CONTACT AND TERMINAL - copper alloy, silver plated

### How do you build the switches you need!!

The straight type , please see the (A) ;

The right angle P.C terminals, please see the (B)

(A) T 8 0 1 3 - S E C Q - E - S 2 0 - T 1 - 2 -

Switch Function		Actuator		Bushing		Termination		Vertical support Bracket		Cap color	
T8013	SP on-none-on	S	10.41	E (STD)	8.89	B	solder lug	(none)		0	transparent
T8013A	SP on-none-(on)	T	5.08	M (non-thd)	8.89	C	P.C 1.27width	S20	11.68	1	white
T8014	SP on-off-on	X	13.97	K (metric)	8.89	D	Quick connect	S25	16.00	2	black
T8014A	SP (on)-off-(on)	W	21.34	F □	7.10	D1	wire wrap(19.05)	S35	11.68	3	red
T8014B	SP on-off-(on)	V	16.26	N (non-thd)	7.10	D3	wire wrap(10.8)	S40	16.00	4	yellow
T8011	DP on-none-on	Y	21.34	G □	7.52			V20	snap-in 11.68	5	blue
T8011A	DP on-none-(on)	<b>Flatted toggle</b>		G1 (non-thd)	7.52	<b>Contact Material</b>		V25	snap-in 16.00	6	green
T8012	DP on-off-on	U	11.43	H □	8.00	Q	silver plated	V35	snap-in 11.68	7	orange
T8012A	DP (on)-off-(on)	U1 □	7.20 □	H1 (non-thd)	8.00	R	gold plated	V40	snap-in 16.00	<b>RoHS code</b>	
T8012B	DP on-off-(on)	U2	21.30	J (long)	9.60	G	gold over silver	<b>Actuator Cap/ Rubber hood Sealing</b>		□ = none	
T8301	3P on-none-on	<b>Large15/32 bushing</b>		J1 (non-thd)	9.60	K	tin plated	(none)		H = RoHS Compliant	
T8303	3P on-none-(on)	Z	11.68	L (splash-proof)	7.47	<b>Epoxy seal</b>		<b>Rubber hood</b>			
T8305	3P on-off-on	Z1 □	17.45 □	<b>none</b>		(none)	none seal	E1	for inch thd (E bushing)		
T8307	3P (on)-off-(on)	Z3 □	antirotation (17.45)	the actuator: Z/Z1/Z3/Z4/LK/LK1 No requirement to choose the bushing unless the splash proof (L) ZL/Z1L/LKL/LK1L and the non-thd (N) LKN/LK1N		E	epoxy seal	E2	for 15/32thd (Z/Z1) □		
T8309	3P on-off-(on)	Z4	antirotation (11.68)					E3	for 15/32thd (Z/Z1)		
T8401	4P on-none-on	<b>Locking Lever</b>						K1	for K bushing		
T8403	4P on-none-(on)	LK	Round top					<b>Actuator Cap</b>			
T8405	4P on-off-on	LK1	Flat top					T1	-10.58 (for actuator S)		
T8407	4P (on)-off-(on)							T2	- 7.29 ( for actuator T)		
T8409	4P on-off-(on)										
<b>3 way position switches</b>											
T812	SP3T on-on-on										
T812A □	SP3T (on)-on-(on) □										
T812B	SP3T on-on-(on)										
T845 □	DP3T on-on-on □										
T847 □	DP3T (on)-on-(on) □										
T849	DP3T on-on-(on)										

(B) T 8 0 1 9 L - T N Q - E - S - T 2 - 2 -

Horizon Right Angle	Vertical Right Angle	Switches Function	Actuator		Bushing		Contact Material		Actuator Cap		
T8019	T8019L	SP on-none-on	S	10.41	E (STD)	8.89	Q	silver plated	(none)		
T8019A	T8019LA	SP on-none-(on)	T	5.08	M (non-thd)	8.89	R	gold plated	T1	-10.58 ( actuator S)	
T8020	T8020L	SP on-off-on	X	13.97	K (metric)	8.89	G	gold over silver	T2	- 7.29 ( actuator T)	
T8020A	T8020LA	SP (on)-off-(on)	W	21.34	N (non-thd)	7.10	K	tin plated	<b>Cap color</b>		
T8020B	T8020LB	SP on-off-(on)	V	16.26	G □	7.52	<b>Epoxy seal</b>		0	transparent	
T8021	T8021L	DP on-none-on	<b>Flatted toggle</b>		G1 (non-thd)	7.52	(none)	none seal	1	white	
T8021A	T8021LA	DP on-none-(on)	U	11.43	H □	8.00	E	epoxy seal	2	black	
T8022	T8022L	DP on-off-on	U1 □	7.2 □	H1 (non-thd)	8.00	<b>Support Bracket type</b>		3	red	
T8022A	T8022LA	DP (on)-off-(on)	U2	21.30	J (long)	9.60	(none)	std. snap-in type	4	yellow	
T8022B	T8022LB	DP on-off-(on)	<b>Locking Lever</b>		J1 (non-thd)	9.60	S		5	blue	
T8301P(A)	T8301P	3P on-none-on	LK	Round top(thd)	L (splash-proof)	7.47			6	green □	
T8303P(A)	T8303P	3P on-none-(on)	LK1	Flat top(thd)	<b>none</b>				7	orange	
T8305P(A)	T8305P	3P on-off-on	the actuator: LK/LK1 No requirement to choose the bushing unless the splash proof (L) LKL/LK1L and the non-thd (N) LKN/LK1N						<b>RoHS code</b>		
T8307P(A)	T8307P	3P (on)-off-(on)							□ = none		
T8309P(A)	T8309P	3P on-off-(on)							H = RoHS Compliant		
T8401P	T8401P	4P on-none-on									
T8403P	T8403P	4P on-none-(on)									
T8405P	T8405P	4P on-off-on									
T8407P	T8407P	4P (on)-off-(on)									
T8409P	T8409P	4P on-off-(on)									
<b>3 way position switches</b>											
T822	T822L	SP3T on-on-on									
T822A □	T822LA □	SP3T (on)-on-(on) □									
T822B	T822LB	SP3T on-on-(on)									
	T845P □	DP3T on-on-on □									
	T847P □	DP3T (on)-on-(on) □									
	T849P	DP3T on-on-(on) □									

INDEX TOGGLE

ROCKER

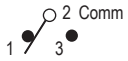
SLIDE

PUSH BUTTON

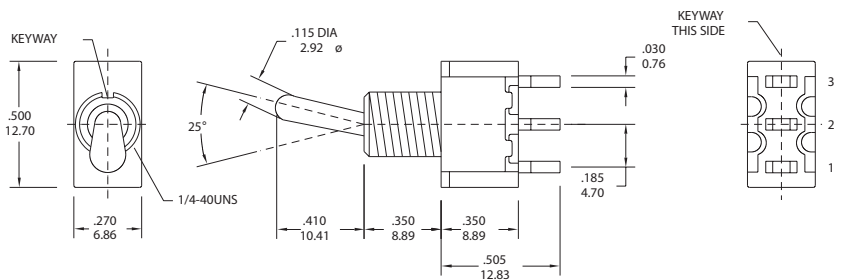
DIP

TACT

### SPDT



Model No.	Switching position		
T8013	ON	none	ON
T8013A	ON	none	(ON)
T8014	ON	OFF	ON
T8014A	(ON)	OFF	(ON)
T8014B	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1

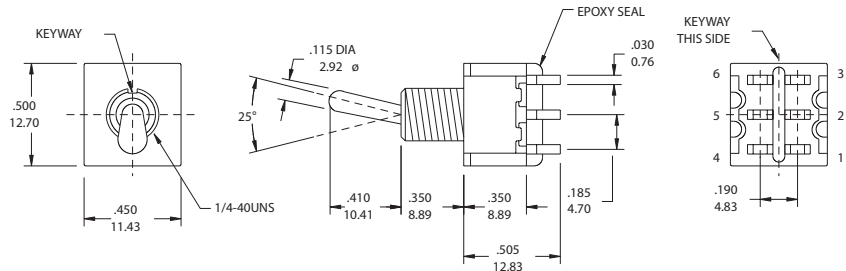


T8013 - SEBQ

### DPDT



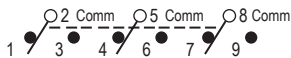
Model No.	Switching position		
T8011	ON	none	ON
T8011A	ON	none	(ON)
T8012	ON	OFF	ON
T8012A	(ON)	OFF	(ON)
T8012B	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T812	ON	ON	ON
T812A	(ON)	ON	(ON)
T812B	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



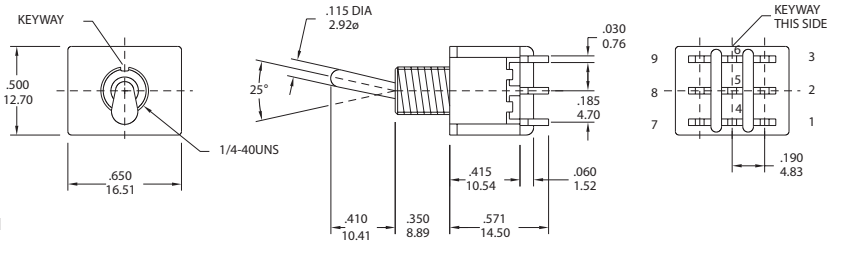
T8011 - SEBQ

Please see page A14 to know more about T812 (3-way Switches)

### 3PDT



Model No.	Switching position		
T8301	ON	none	ON
T8303	ON	none	(ON)
T8305	ON	OFF	ON
T8307	(ON)	OFF	(ON)
T8309	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7

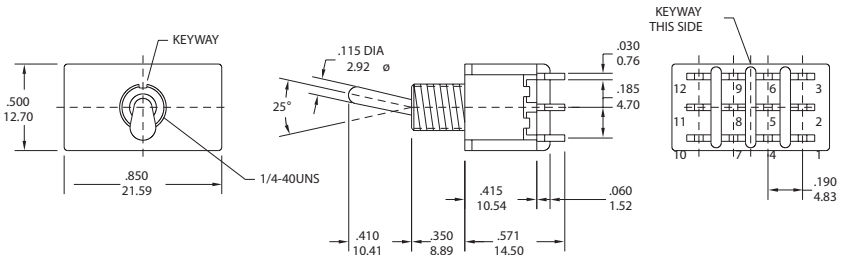


T8301- SEBQ

### 4PDT



Model No.	Switching position		
T8401	ON	none	ON
T8403	ON	none	(ON)
T8405	ON	OFF	ON
T8407	(ON)	OFF	(ON)
T8409	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	open	2-1,5-4 8-7,11-10
3 way switches (DP3T)			
T845	ON	ON	ON
T847	(ON)	ON	(ON)
T849	ON	ON	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	2-3,5-4 8-9,11-10	2-1,5-4 8-7,11-10



T8401 - SEBQ

Please see page A14 to know more about T845 (3-way Switches)

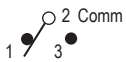


### FEATURE

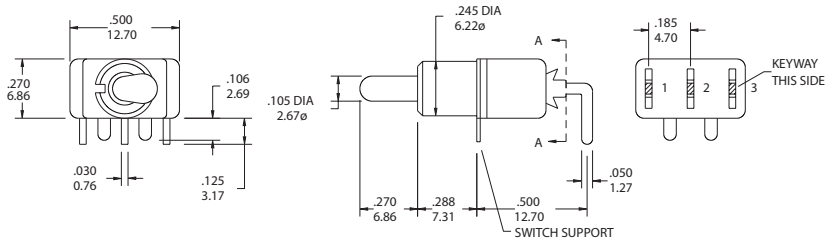
The T80-T series P.C.B Mounted Toggle Switches - Right Angle Type - are specially designed for P.C. Boards . Easy to mount and install securely with a vertical support rack . The toggle operates in the same direction as the print connectors . Customers' specifications of pitch are acceptable.

### HORISON RIGHT ANGLE

#### SPDT



Model No.	Switching position		
T8019	ON	none	ON
T8019A	ON	none	(ON)
T8020	ON	OFF	ON
T8020A	(ON)	OFF	(ON)
T8020B	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1

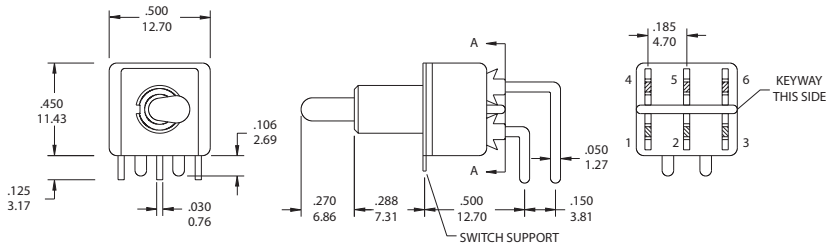


T8019 - TNQ

#### DPDT



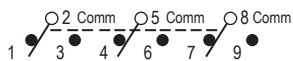
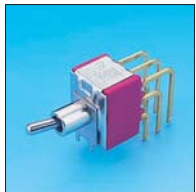
Model No.	Switching position		
T8021	ON	none	ON
T8021A	ON	none	(ON)
T8022	ON	OFF	ON
T8022A	(ON)	OFF	(ON)
T8022B	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T822	ON	ON	ON
T822A	(ON)	ON	(ON)
T822B	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



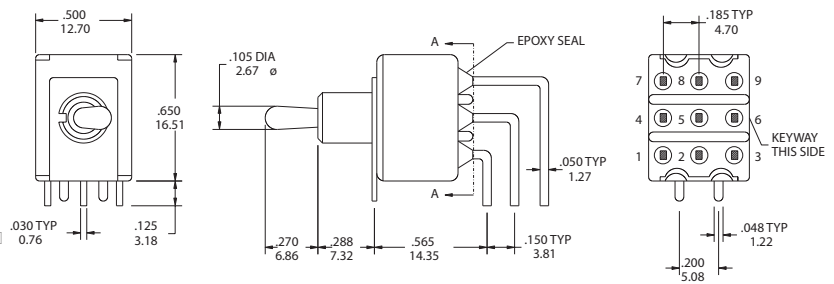
T8021 - TNQ

Please see page A14 to know more about T822 (3-way Switches)

#### 3PDT



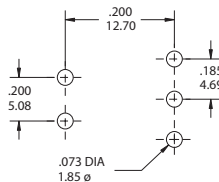
Model No.	Switching position		
T8301P(A)	ON	none	ON
T8303P(A)	ON	none	(ON)
T8305P(A)	ON	OFF	ON
T8307P(A)	(ON)	OFF	(ON)
T8309P(A)	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
	8-9		8-7



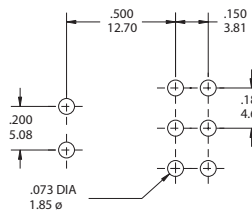
T8301P(A)- TNQ

### P.C.B MOUNTING DIMENSIONS

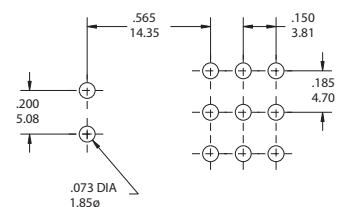
FOR T8019-T8020B



FOR T8021-T8022B



FOR T8301P(A)-T8309P(A)





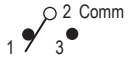
# T80-T

## Miniature Toggle Switches (Right Angle Type)

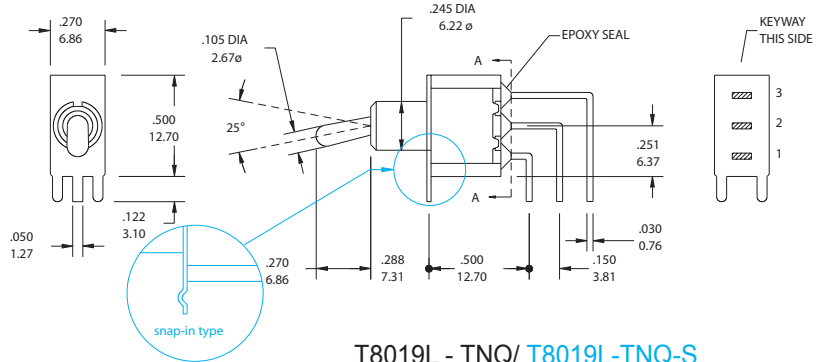


### VERTICAL RIGHT ANGLE

#### SPDT



Model No.	Switching position		
T8019L	ON	none	ON
T8019LA	ON	none	(ON)
T8020L	ON	OFF	ON
T8020LA	(ON)	OFF	(ON)
T8020LB	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1

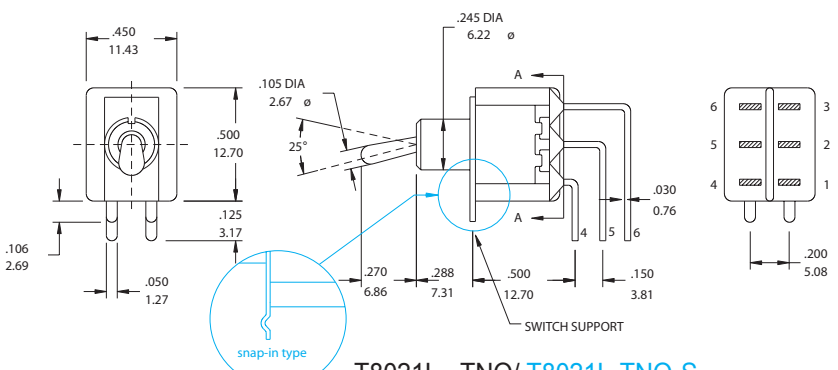


T8019L - TNQ/ T8019L-TNQ-S

#### DPDT



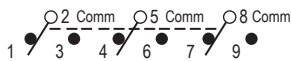
Model No.	Switching position		
T8021L	ON	none	ON
T8021LA	ON	none	(ON)
T8022L	ON	OFF	ON
T8022LA	(ON)	OFF	(ON)
T8022LB	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T822L	ON	ON	ON
T822LA	(ON)	ON	(ON)
T822LB	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



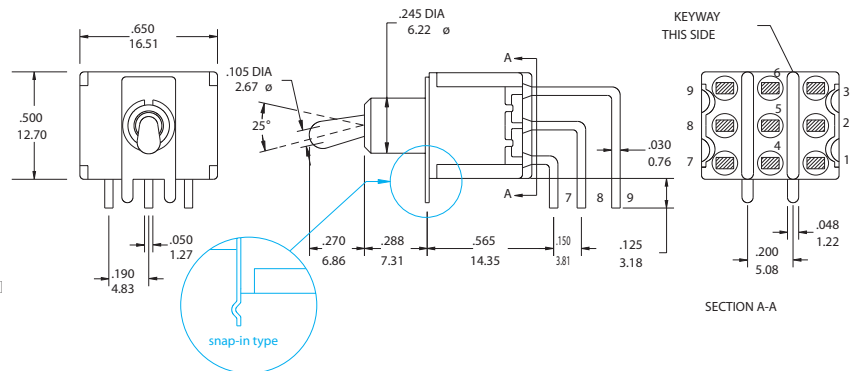
T8021L - TNQ/ T8021L-TNQ-S

Please see page A14 to know more about T822L ( 3-way Switches)

#### 3PDT



Model No.	Switching position		
T8301P	ON	none	ON
T8303P	ON	none	(ON)
T8305P	ON	OFF	ON
T8307P	(ON)	OFF	(ON)
T8309P	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7

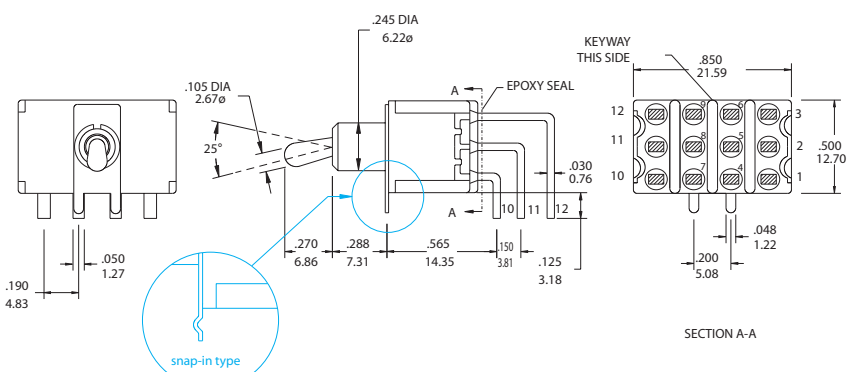


T8301P- TNQ/ T8301P-TNQ-S

#### 4PDT



Model No.	Switching position		
T8401P	ON	none	ON
T8403P	ON	none	(ON)
T8405P	ON	OFF	ON
T8407P	(ON)	OFF	(ON)
T8409P	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	open	2-1,5-4 8-7,11-10
3 way switches (DP3T)			
T845P	ON	ON	ON
T847P	(ON)	ON	(ON)
T849P	ON	ON	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	2-3,5-4	2-1,5-4 8-7,11-10

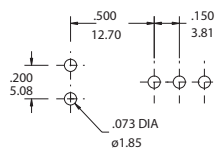


T8401P- TNQ/ T8401P-TNQ-S

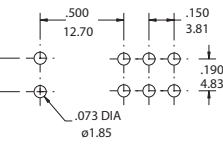
Please see page A14 to know more about T845P ( 3-way Switches)

#### P.C.B MOUNTING DIMENSIONS

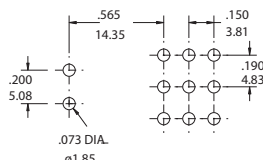
FOR T8019L-T8020LB



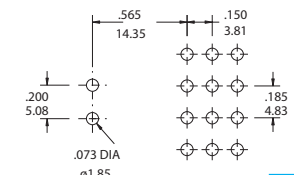
FOR T8021L-T8022LB



FOR T8301P-T8309P

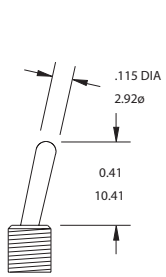
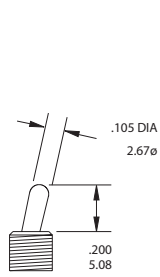
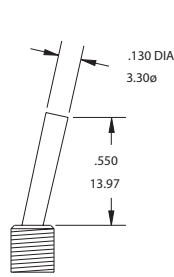
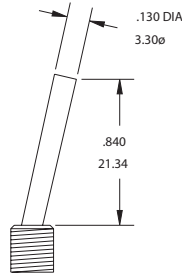
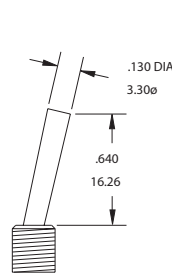
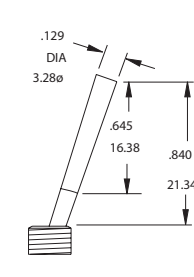


FOR T8401P-T8409P





## Actuator Option

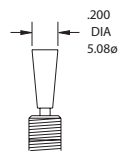
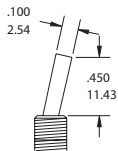
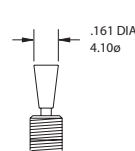
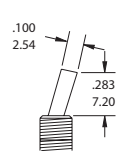
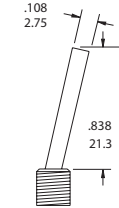
**S (STD)****T (STD)****X LONG****W LONG****V LONG****Y PLASTIC**

Y HANDLE COLOR NO.	COLOR
1	White
2	Black(std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

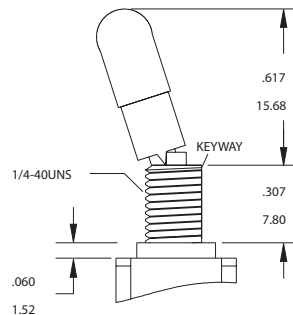
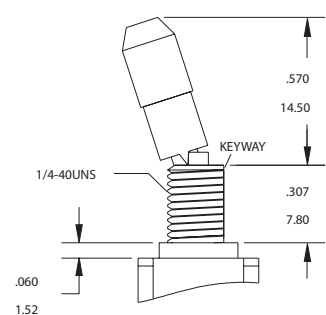
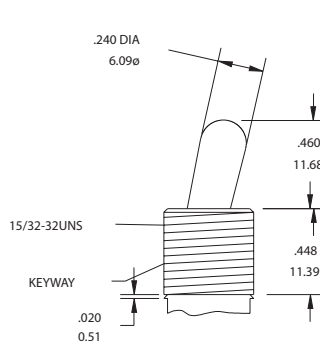
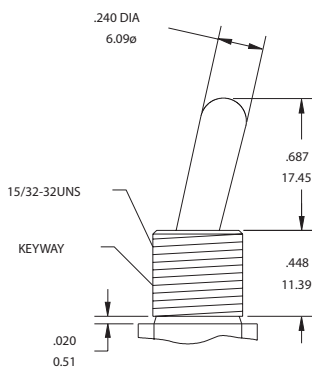
the height of actuator is with bushing "E". It will be difference with other bushing option

Now the available color is "2". If you need the others, please inquire first.

### Flatted Actuator ( ONLY APPLY "H""H1""H2" BUSHING)

**U (standard)****U1 ( short )****U2 ( long )**

### Locking Lever

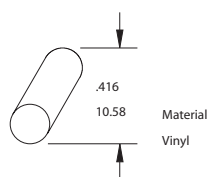
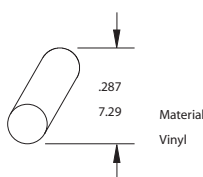
**LK (round top)****LK1 (flat top)****Z LARGE TOGGLE Z4 ANTIROTATION****Z1 LARGE TOGGLE Z3 ANTIROTATION**

Bushing Option Code not required unless " L " splashproof bushing ordered.

Bushing Option Code not required unless  
 (1) " L " splashproof bushing ordered --LKL / LK1L  
 (2) non-thread ordered, choose the bushing code "N" -- LKN / LK1N

only on-on and on-off-on are available  
 other function are developing ,please inquire our office first.

## Toggle Cap Option

**T1 for actuator "S"only****T2 for actuator "T"**

## Toggle Cap Color Option

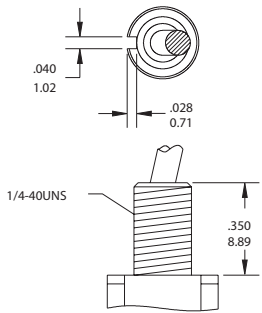
code	color
0	transparent
1	white
2	black
3	red
4	yellow
5	blue
6	green
7	orange



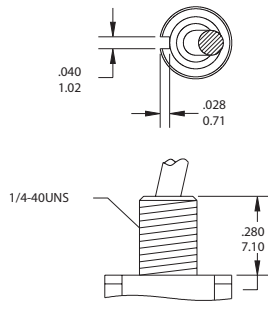


## Bushing Option

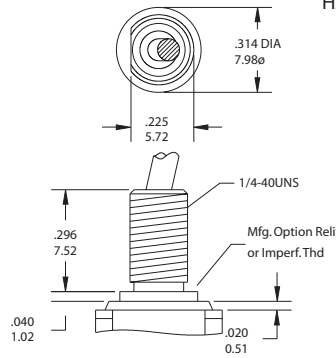
E THD STD. TYPE  
M NON-THD



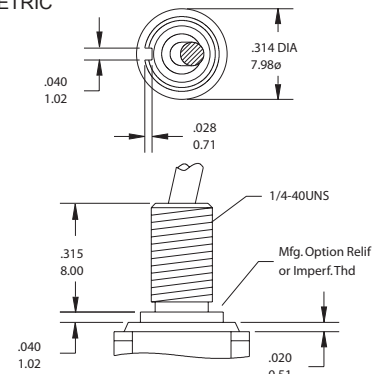
F THD.  
N NON-THD



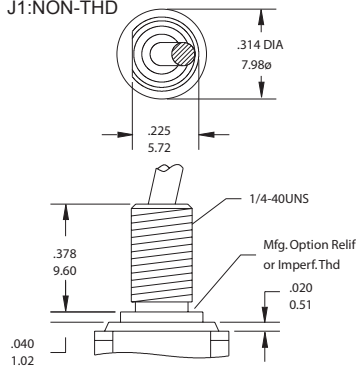
HIGH TORQUE  
G:THD STD.TYPE  
G1:NON-THD



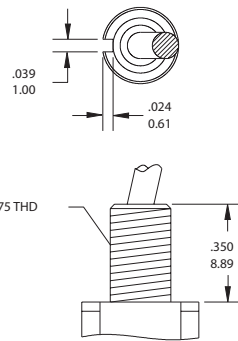
HIGH TORQUE  
H:THD STD.TYPE  
H1:NON-THD  
H2:METRIC



LONG  
J:THD STD.TYPE  
J1:NON-THD

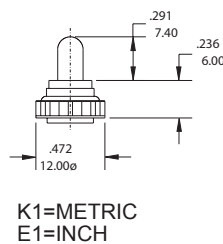
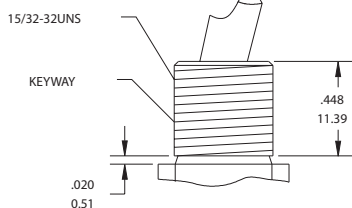
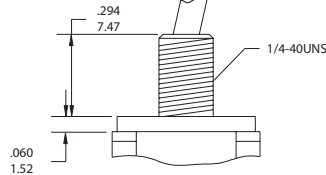
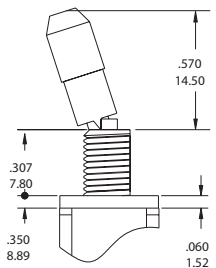
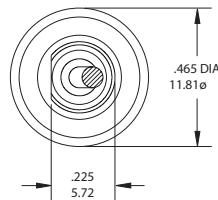
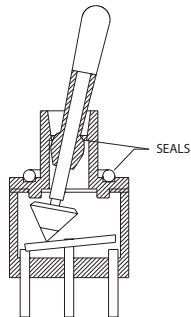


K METRIC



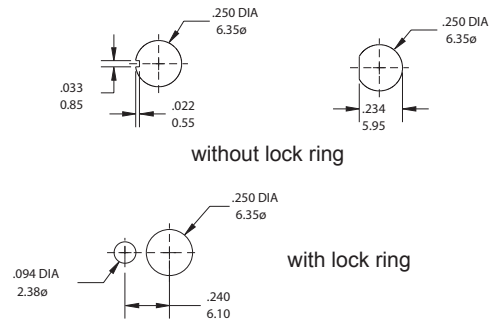
## Splash water proof Solution

L SPLASH-PROOF -- only for the function ON-ON /ON-OFF-ON

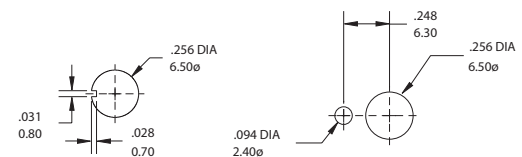


## Panel Mounting

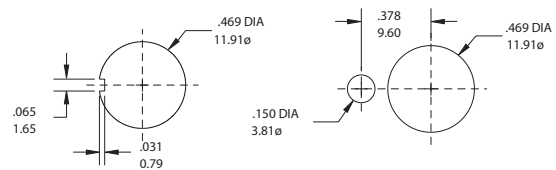
### 1/4 IN. BUSHING



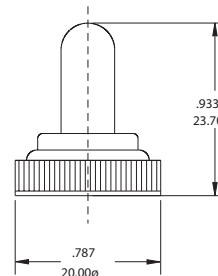
### METRIC BUSHING



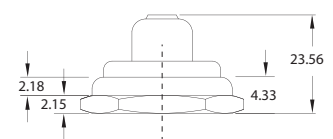
### 15/32 IN. BUSHING



## RUBBER HOOD SEALING



E2 for the large toggle  
(15/32-32NS)



E3 for the large toggle  
(15/32-32UNS)

For the Large toggle ( Z / Z1 option ) , the internal actuator seal standard. External bushing seal washer available from :Multi-Flex Seals Inc.,Hackensack,NJ. Part no:MFS-60064

INDEX

TOGGLE

ROCKER

SLIDE

PUSH BUTTON

DIP

TACT

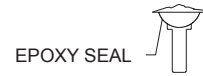
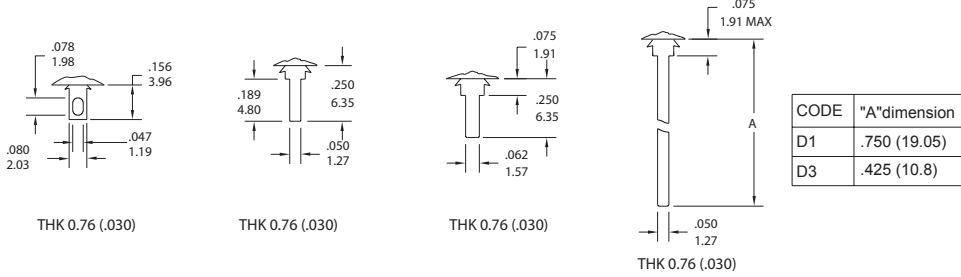


### TERMINAL OPTION (ONLY FOR THE STRAIGHT TYPE T8013~T8401)

### TERMINAL SEAL OPTION

B SOLDER LUG    C PRINTED CIRCUIT    D QUICK CONNECT    WIREWRAP

E TERMINAL SEAL



### CONTACT MATERIAL OPTIONS

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	5 A @ 125 V AC or 28 V DC; 3 A @ 250 VAC
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4VA MAX @ 20 V AC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 V AC or DC MAX or 5 A @ 125V AC or 28 VDC; 3 A @ 250 VAC
K	Gold plated over nickel plated	Tin over nickel plated	0.4VA MAX @ 20 V AC or DC MAX

\* The K option is only for some special item. Please inquire first when you need the "K" option

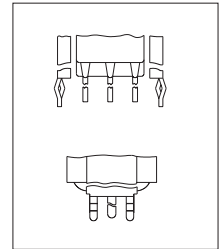
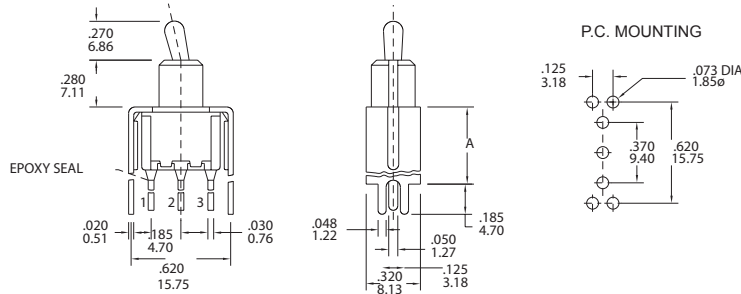
### VERTICAL SUPPORT BRACKET OPTION

( only apply the straight type terminal -page A 2. Please build the terminal option "c" code)

S20 / S25/ V20/V25



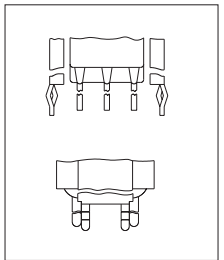
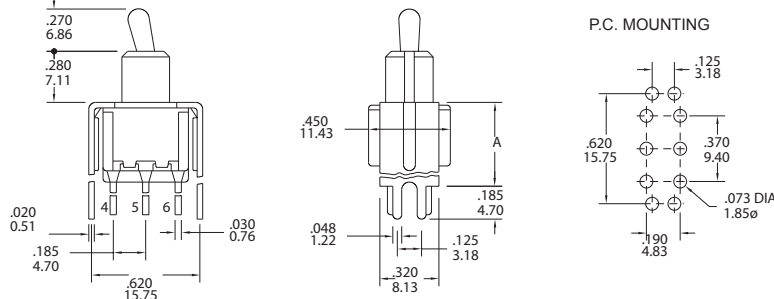
SPDT



T8013 - TNCQ-S20(S25)

SNAP-IN  
V20/V25

DPDT



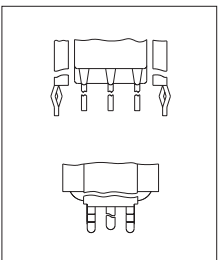
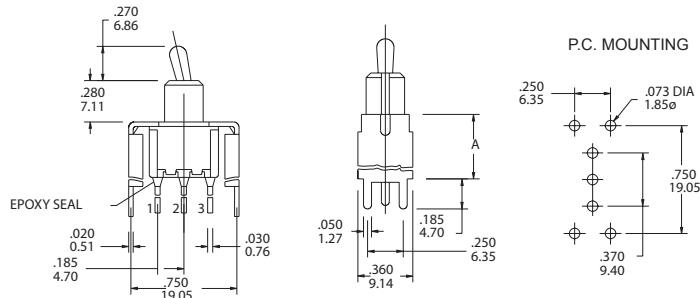
T8011 - TNCQ-S20(S25)

SNAP-IN  
V20/V25

S35/S40 /V35/V40



SPDT



T8013 - TNCQ-S35(S40)

SNAP-IN  
V35/V40

INDEX

TOGGLE

ROCKER

SLIDE

PUSH BUTTON

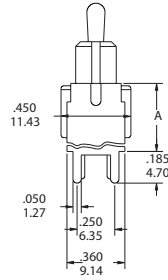
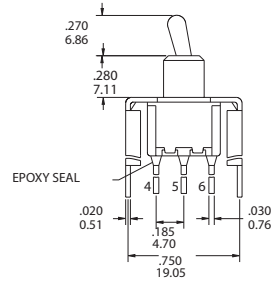
DIP

TACT

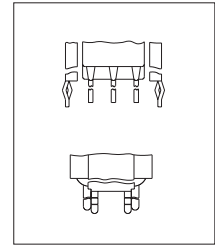
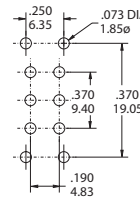


### DPDT

option Code	A dimension
S35/V35	.460 11.68
S40/V40	.630 16.00
V35/V40 : the snap-in type	



### P.C. MOUNTING



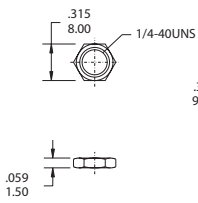
SNAP-IN  
V35/ V40

T8011 - TNCQ-S35(S40)

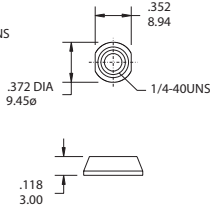
## The hardware of T80-T TOGGLE SWITCHES

### NUT

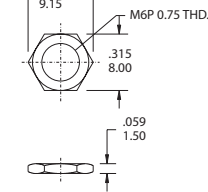
#### STD.



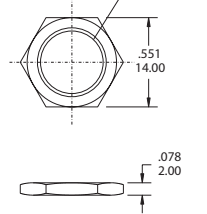
#### DRESS NUT



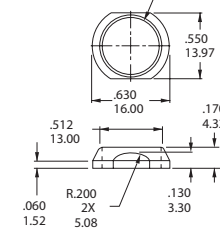
#### METRIC NUT



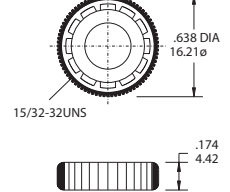
#### STD. FOR Z Z1



#### DRESS NUT FOR Z Z1

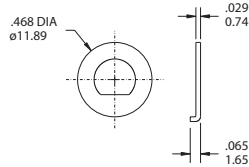
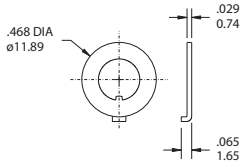


#### KNURLED NUT

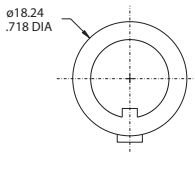


### LOCKING RING

#### STD

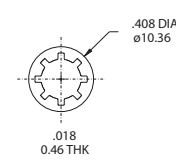


#### STD. FOR Z Z1

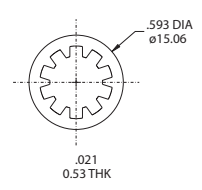


### LOCK WASHER

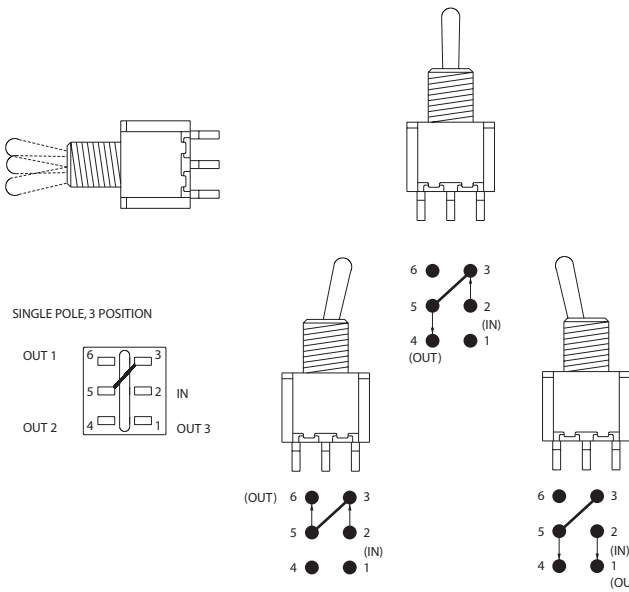
#### STD.



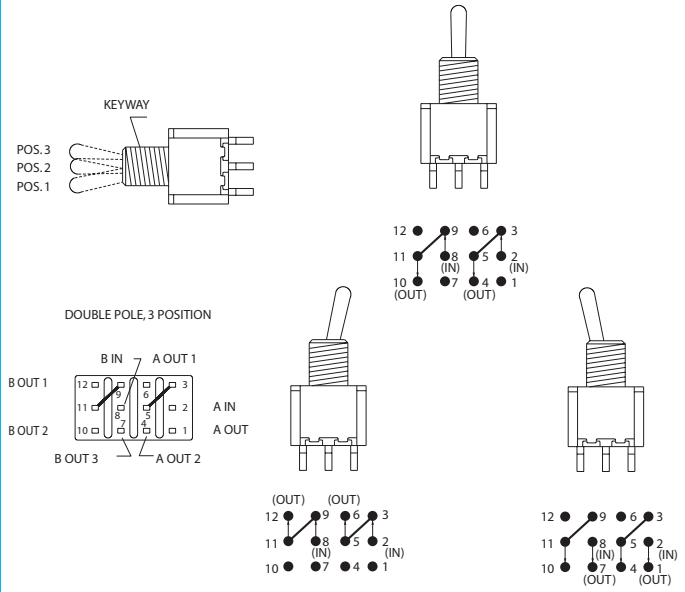
#### STD. FOR Z Z1



## The information of 3-way toggle switches



SP3T



DP3T

INDEX

TOGGLE

ROCKER

SLIDE

PUSHBUTTON

DIP

TACT