

## 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	N (non-thd)	7.10	D1	wire wrap(19.05)	S35	11.68	3	red
T8014B	SP on-off-(on)	V	16.26	F (non-thd)	7.10	D3	wire wrap(10.8)	S40	16.00	4	orange
T8011	DP on-none-on	Y	21.34	G	7.52			V20	snap-in 11.68	5	yellow
T8011A	DP on-none-(on)	<b>Flatted toggle</b>		H1 (non-thd)	8.00	<b>Contact Material</b>		V25	snap-in 16.00	6	green
T8012	DP on-off-on	U	11.43	H2 (metric)	8.00	Q	silver plated	V35	snap-in 11.68	7	blue
T8012A	DP (on)-off-(on)	U1	7.20	J (long)	9.60	R	gold plated	V40	snap-in 16.00	<b>O Ring</b>	
T8012B	DP on-off-(on)	U2	21.30	J1 (non-thd)	9.60	G	gold over silver	<b>Actuator Cap/ Rubber hood Sealing</b>		(none)	
T8301	3P on-none-on	<b>Large15/32 bushing</b>		L (splash-proof)	7.47	K	tin plated	<b>Rubber hood</b>		E6 for inch thd	
T8303	3P on-none-(on)	Z	11.68	<b>none</b>		<b>Epoxy seal</b>		<b>RoHS code</b>		H = RoHS Compliant	
T8305	3P on-off-on	Z1	17.45	the actuator: Z/Z1/Z3/Z4/LK/LK1 No requirement to choose the bushing unless the splash proof (L & W) ZL/Z1L/ZW/Z1W/LKL/LK1L and the non-thd (N) LKN/LK1N		(none)	none seal	E1	for E Bushing		
T8307	3P (on)-off-(on)	Z3	antirotation (17.45)			E	epoxy seal	E2	for Z/Z1 Bushing		
T8309	3P on-off-(on)	Z4	antirotation (11.68)					E3	for Z/Z1 Bushing		
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	7.56 (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 - -

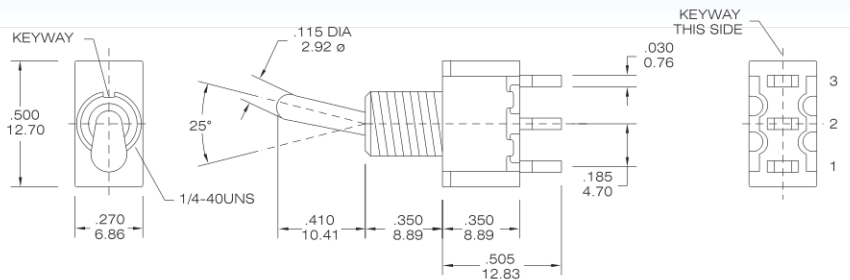
Horizon Right Angle	Vertical Right Angle	Switches Function	Actuator		Bushing		Contact Material		Actuator Cap		
T8019	T8019L	SP on-none-on	S	10.41	E (STD)	8.89	Q	silver plated	(none)		
T8019A	T8019LA	SP on-none-(on)	T	5.08	M (non-thd)	8.89	R	gold plated	T1	-10.58 ( actuator S)	
T8020	T8020L	SP on-off-on	X	13.97	K (metric)	8.89	G	gold over silver	T2	- 7.56 ( 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	F (non-thd)	7.10	<b>Epoxy seal</b>		0 transparent		
T8021	T8021L	DP on-none-on	<b>Flatted toggle</b>		G	7.52	(none)	none seal	1 white		
T8021A	T8021LA	DP on-none-(on)	U	11.43	H1 (non-thd)	8.00	E	epoxy seal	2 black		
T8022	T8022L	DP on-off-on	U1	7.2	H2 (metric)	8.00	<b>Support Bracket type</b>		3 red		
T8022A	T8022LA	DP (on)-off-(on)	U2	21.30	J (long)	9.60	(none)	std.	4 orange		
T8022B	T8022LB	DP on-off-(on)	<b>Locking Lever</b>		J1 (non-thd)	9.60	S	snap-in type	5 yellow		
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 blue		
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)							H = RoHS Compliant		
T8309P(A)	T8309P	3P on-off-(on)									
	T8401P	4P on-none-on									
	T8403P	4P on-none-(on)									
	T8405P	4P on-off-on									
	T8407P	4P (on)-off-(on)									
	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)									



## 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



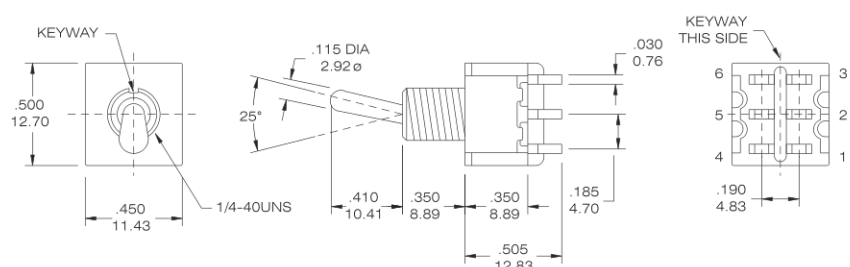
T8013 - SEBQ



## 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

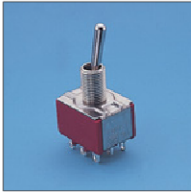


T8011 - SEBQ

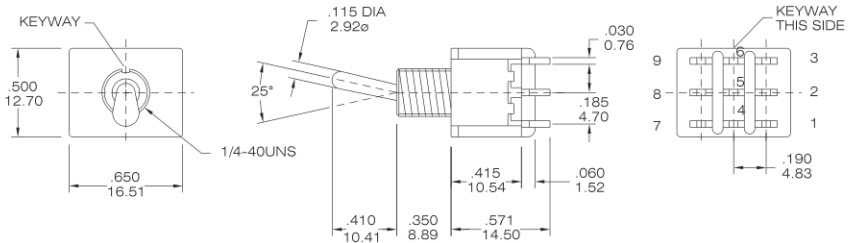
Please see page A18 to know more about T812 (3-way Switches)



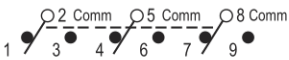
## 3PDT



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



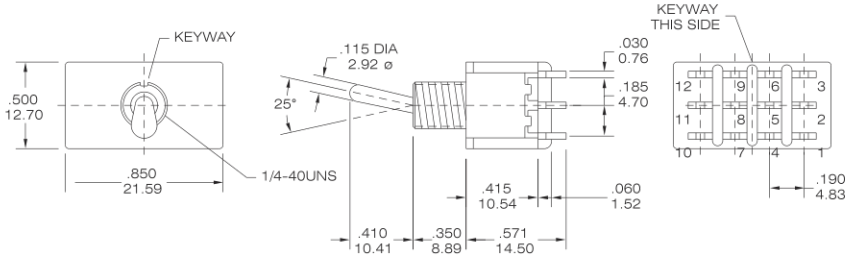
T8301- SEBQ



## 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 A18 to know more about T845 (3-way Switches)





## FEATURE

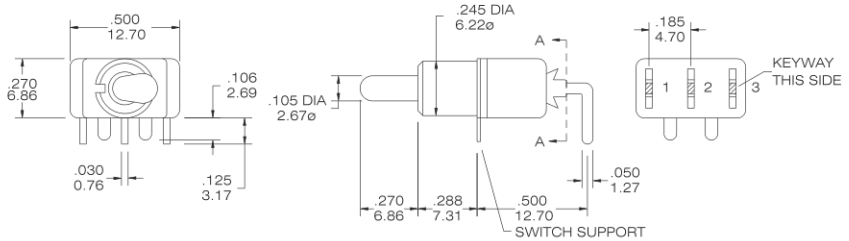
The T80-T series P.C.B Mounted Toggle Switches - Right Angle Type - are specially designed for P.C. Boards . Easy to mount and install securely with a vertical support rack . The toggle operates in the same direction as the print connectors . Customers' specifications of pitch are acceptable.

## 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

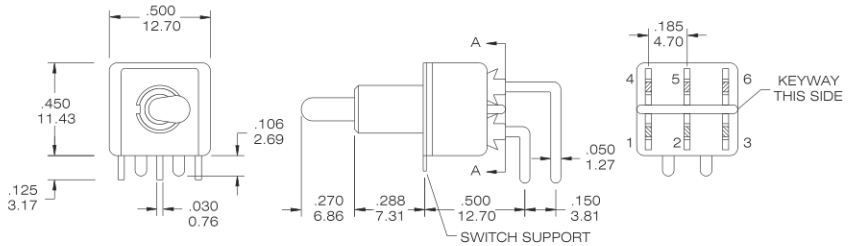


T8019 - TNQ

### DPDT



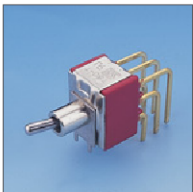
Model No.	Switching position		
T8021	ON	none	ON
T8021A	ON	none	(ON)
T8022	ON	OFF	ON
T8022A	(ON)	OFF	(ON)
T8022B	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T822	ON	ON	ON
T822A	(ON)	ON	(ON)
T822B	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



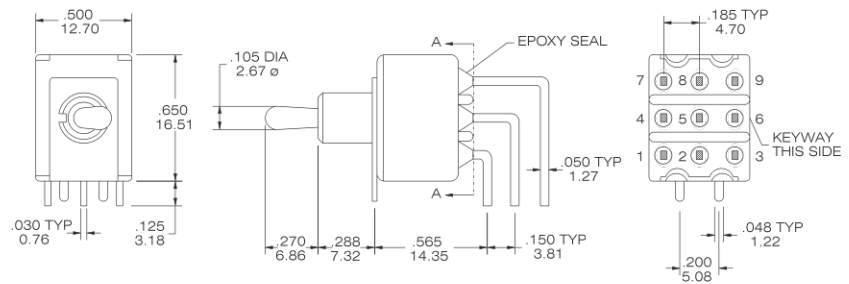
T8021 - TNQ

Please see page A18 to know more about T822 ( 3-way Switches)

### 3PDT



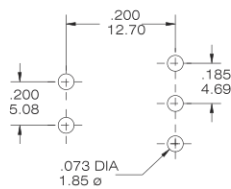
Model No.	Switching position		
T8301P(A)	ON	none	ON
T8303P(A)	ON	none	(ON)
T8305P(A)	ON	OFF	ON
T8307P(A)	(ON)	OFF	(ON)
T8309P(A)	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7



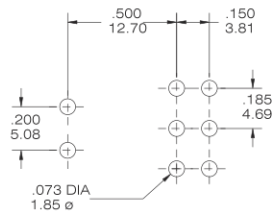
T8301P(A)- TNQ

## P.C.B MOUNTING DIMENSIONS

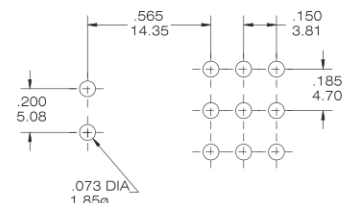
FOR T8019-T8020B



FOR T8021-T8022B



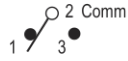
FOR T8301P(A)-T8309P(A)



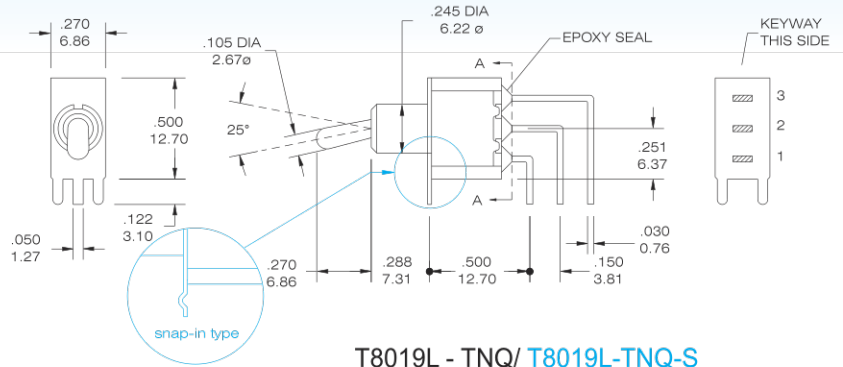


## VERTICAL RIGHT ANGLE

### SPDT



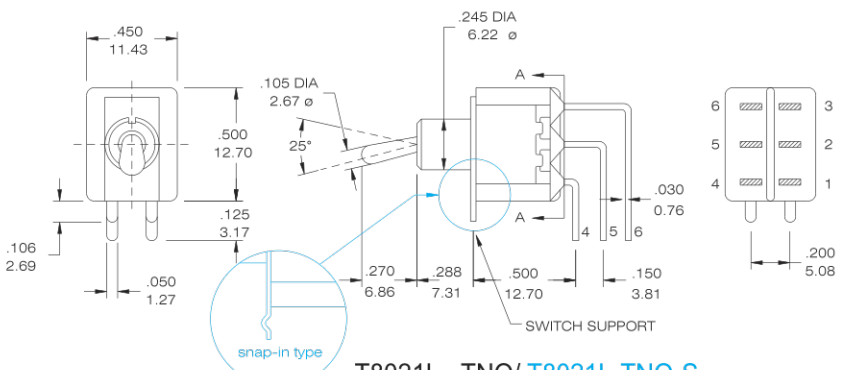
Model No.	Switching position		
T8019L	ON	none	ON
T8019LA	ON	none	(ON)
T8020L	ON	OFF	ON
T8020LA	(ON)	OFF	(ON)
T8020LB	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1



### DPDT

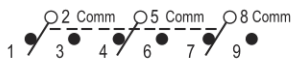


Model No.	Switching position		
T8021L	ON	none	ON
T8021LA	ON	none	(ON)
T8022L	ON	OFF	ON
T8022LA	(ON)	OFF	(ON)
T8022LB	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T822L	ON	ON	ON
T822LA	(ON)	ON	(ON)
T822LB	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4

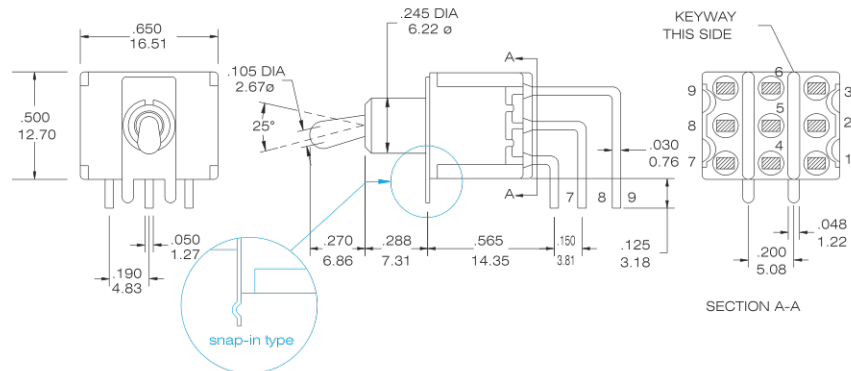


Please see page A18 to know more about T822L ( 3-way Switches)

### 3PDT



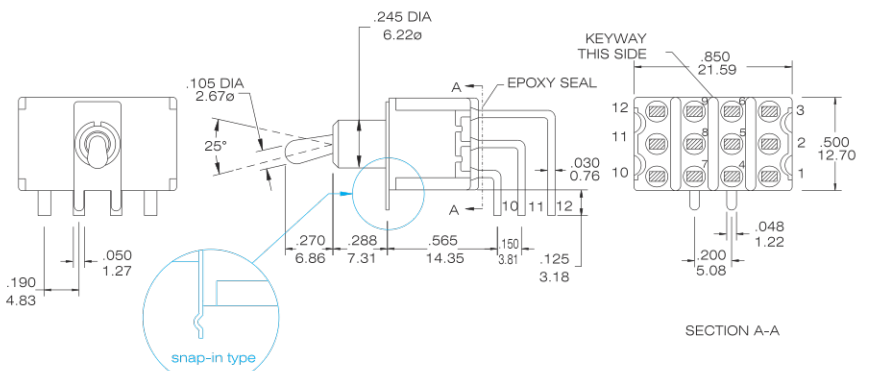
Model No.	Switching position		
T8301P	ON	none	ON
T8303P	ON	none	(ON)
T8305P	ON	OFF	ON
T8307P	(ON)	OFF	(ON)
T8309P	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7



### 4PDT



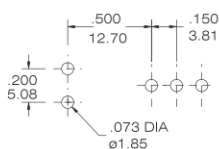
Model No.	Switching position		
T8401P	ON	none	ON
T8403P	ON	none	(ON)
T8405P	ON	OFF	ON
T8407P	(ON)	OFF	(ON)
T8409P	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	open	2-1,5-4 8-7,11-10
3 way switches (DP3T)			
T845P	ON	ON	ON
T847P	(ON)	ON	(ON)
T849P	ON	ON	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	2-3,5-4 8-9,11-10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



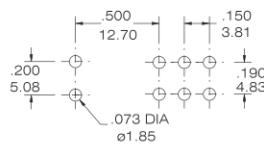
Please see page A18 to know more about T845P ( 3-way Switches)

### P.C.B MOUNTING DIMENSIONS

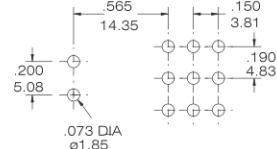
FOR T8019L-T8020LB



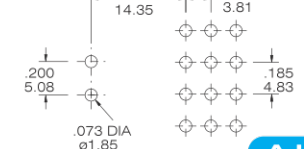
FOR T8021L-T8022LB



FOR T8301P-T8309P



FOR T8401P-T8409P





# T80-T

# Miniature Toggle Switches



## Actuator Option

S (STD)

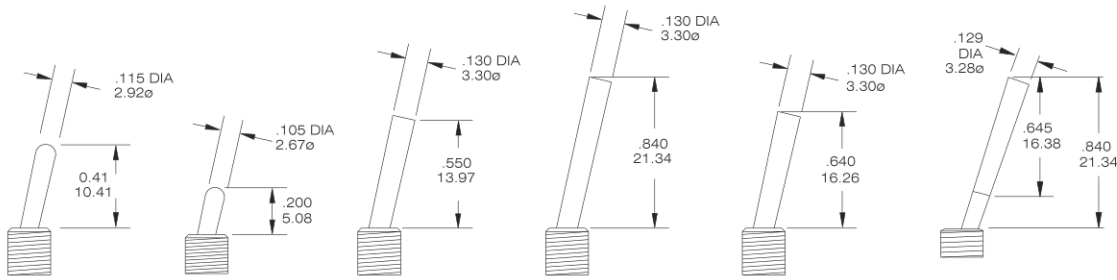
T (STD)

X LONG

W LONG

V LONG

Y PLASTIC



Y HANDLE COLOR NO.	COLOR
1	White
2	Black(std.)
3	Red

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

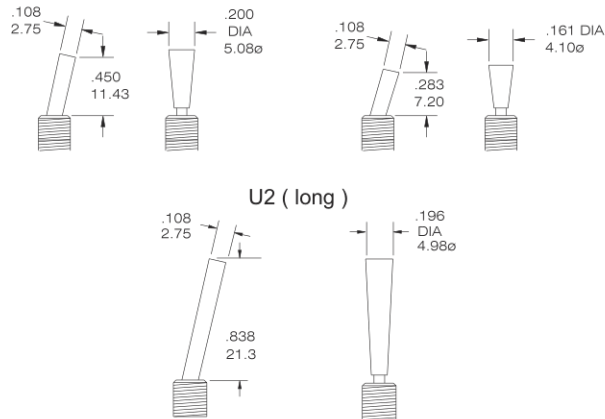
Now the available color is "2". If you need the others, please inquire first.

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

### Locking Lever

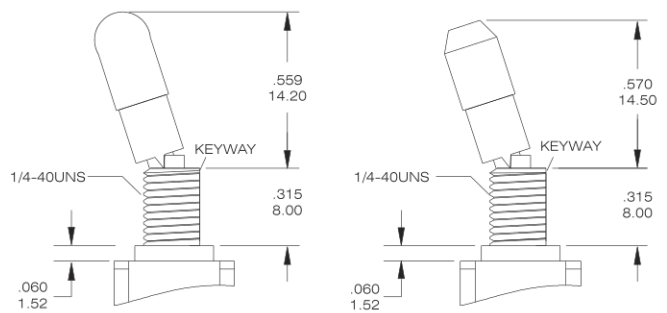
U (standard)

U1 ( short )



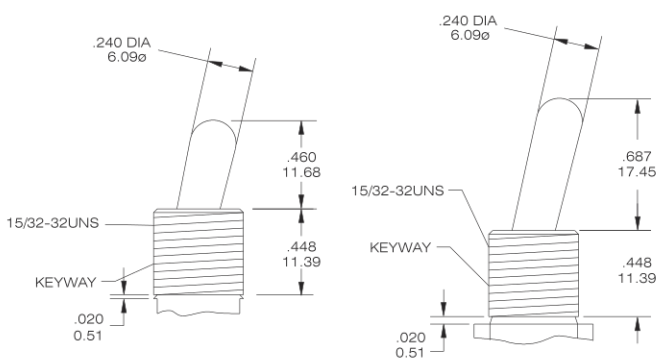
LK (round top)

LK1(flat top)



Z LARGE TOGGLE  
Z4 ANTIROTATION

Z1 LARGE TOGGLE  
Z3 ANTIROTATION



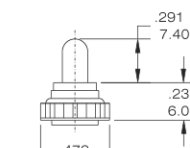
Bushing Option Code not required unless

(1) " L " splashproof bushing ordered --LKL / LK1L

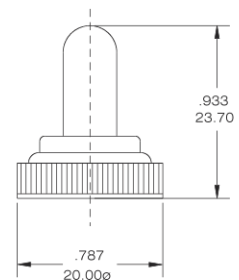
(2) non-thread ordered,choose the bushing code "N" -- LKN / LK1N

## Rubber Hood Sealing

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



K1=METRIC  
E1=INCH  
E1-L=INCH **NEW**

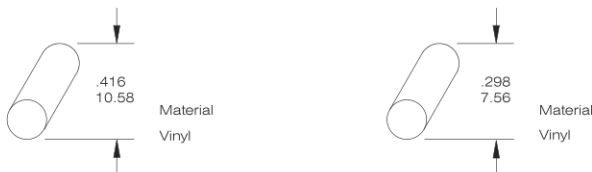


E2 for the large toggle  
(15/32-32UNS)

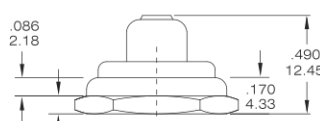
## Toggle Cap Option

T1 for actuator "S" only

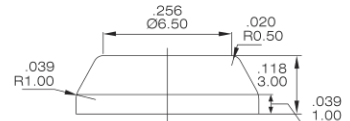
T2 for actuator "T"



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



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



E6 O RING



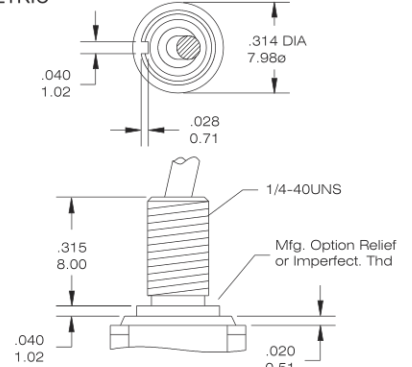
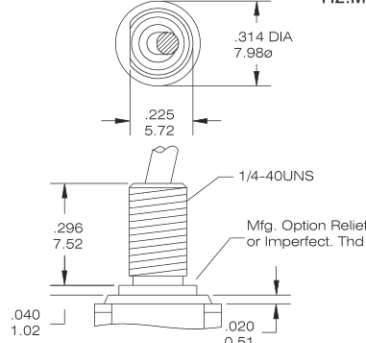
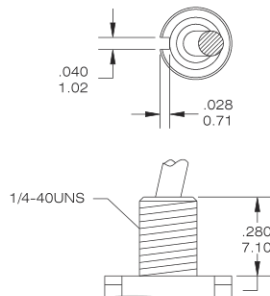
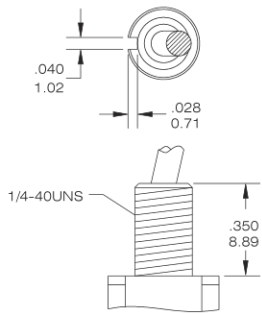
## Bushing Option

E THD STD. TYPE  
M NON-THD

F THD.  
N NON-THD

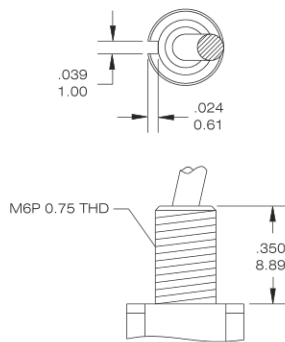
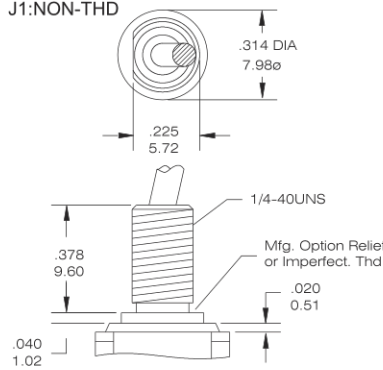
HIGH TORQUE  
G: THD STD. TYPE  
G1: NON-THD

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

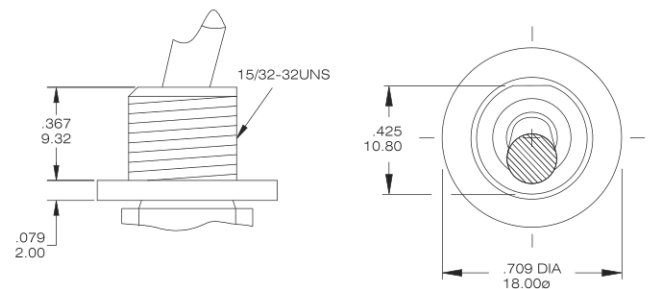
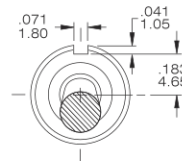
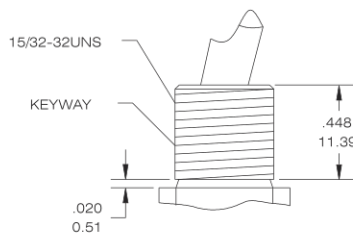
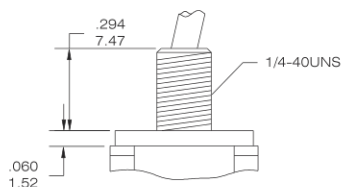
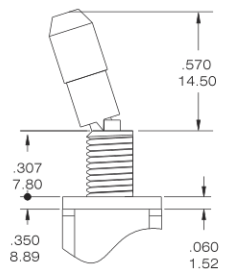
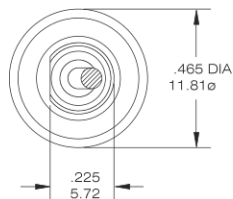
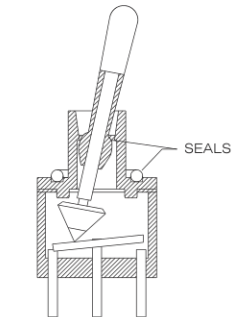


LONG  
J: THD STD. TYPE  
J1: NON-THD

K METRIC

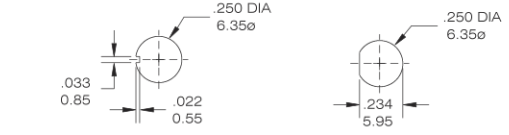


### Splash water proof Solution L SPLASH-PROOF

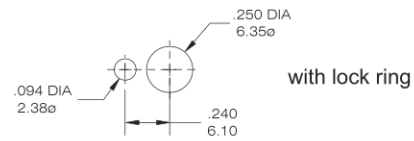


### Panel Mounting

#### 1/4 IN. BUSHING

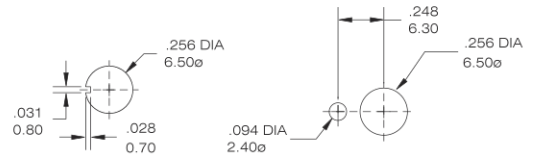


without lock ring

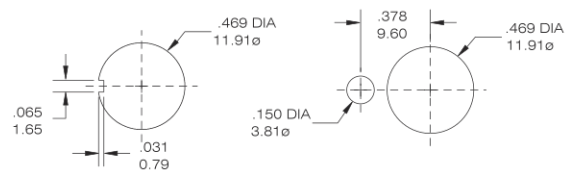


with lock ring

#### METRIC BUSHING



#### 15/32 IN. BUSHING



#### W SPLASH-PROOF

INDEX

TOGGLE

ROCKER

SLIDE

PUSH BUTTON / MICRO

DIP / ROTARY

KEY / TACT



# T80-T

# Miniature Toggle Switches

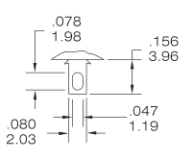


## TERMINAL OPTION (ONLY FOR THE STRAIGHT TYPE T8013~T8401)

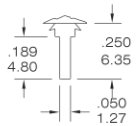
## TERMINAL SEAL OPTION

B SOLDER LUG C PRINTED CIRCUIT D QUICK CONNECT WIREWRAP

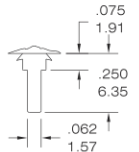
E TERMINAL SEAL



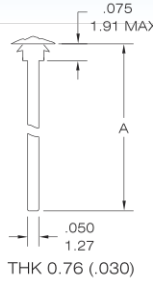
THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)

CODE	"A"dimension
D1	.750 (19.05)
D3	.425 (10.8)



EPOXY 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

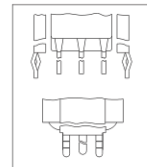
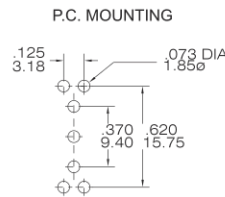
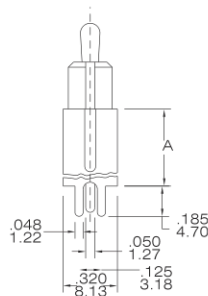
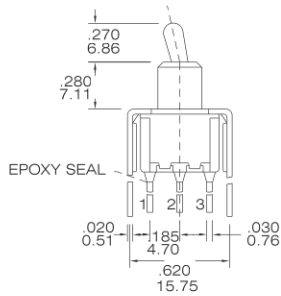
\* The K option is only for some special item. Please inquire first when you need the "K" option

## VERTICAL SUPPORT BRACKET OPTION

( only apply the straight type terminal -page A12. Please build the terminal option "c" code)

### SPDT

S20/S25/V20/V25



SNAP-IN V20/ V25

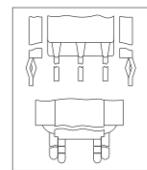
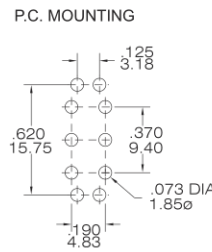
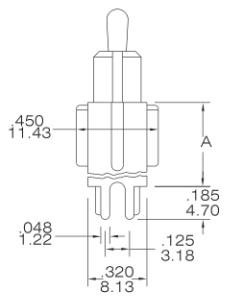
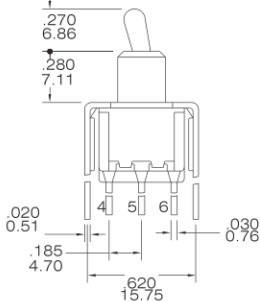
CODE	"A"dimension
S20/V20	.460 (11.68)
S25/V25	.630 (16.00)

V20/V25 : the snap-in type

T8013 - TNCQ-S20(S25)

### DPDT

S20/S25/V20/V25



SNAP-IN V20/ V25

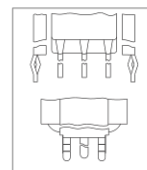
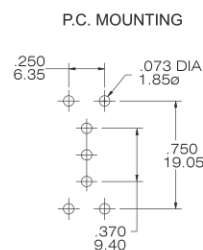
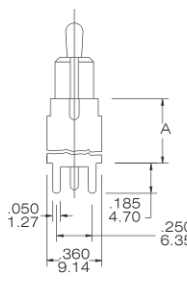
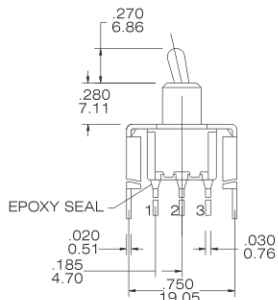
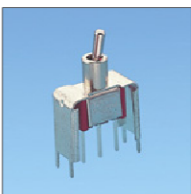
CODE	"A"dimension
S20/V20	.460 (11.68)
S25/V25	.630 (16.00)

V20/V25 : the snap-in type

T8011 - TNCQ-S20(S25)

### SPDT

S35/S40/V35/V40



SNAP-IN V35/ V40

CODE	"A"dimension
S35/V35	.460 (11.68)
S40/V40	.630 (16.00)

V35/V40 : the snap-in type

T8013 - TNCQ-S35(S40)

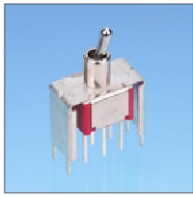


# T80-T

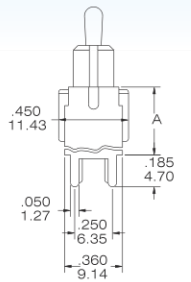
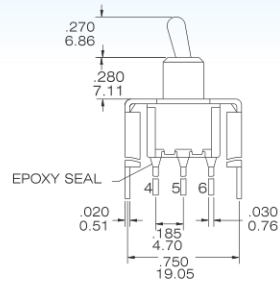
# Miniature Toggle Switches



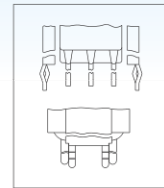
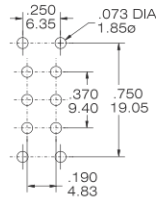
S35 / S40/ V35/V40



DPDT



P.C. MOUNTING



SNAP-IN  
V35/ V40

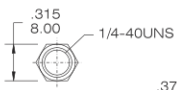
CODE	"A" dimension
S35/V35	.460 (11.68)
S40/V40	.630 (16.00)
V35/V40 : the snap-in type	

T8011 - TNCQ-S35(S40)

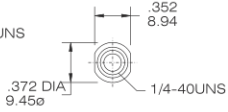
## The hardware of T80-T TOGGLE SWITCHES

NUT

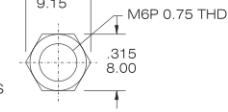
STD.



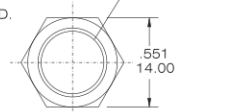
DRESS NUT



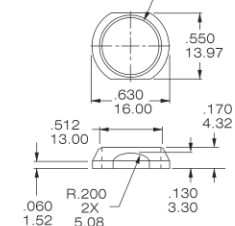
METRIC NUT



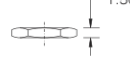
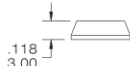
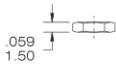
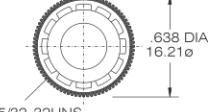
STD. FOR Z Z1



DRESS NUT FOR Z Z1

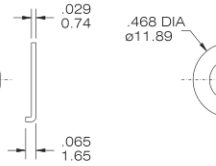
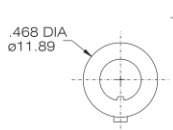


KNURLED NUT

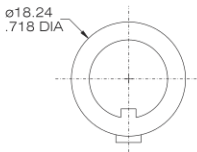


LOCKING RING

STD.

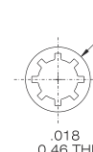


STD. FOR Z Z1

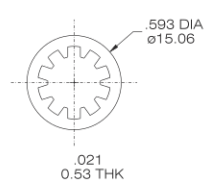


LOCK WASHER

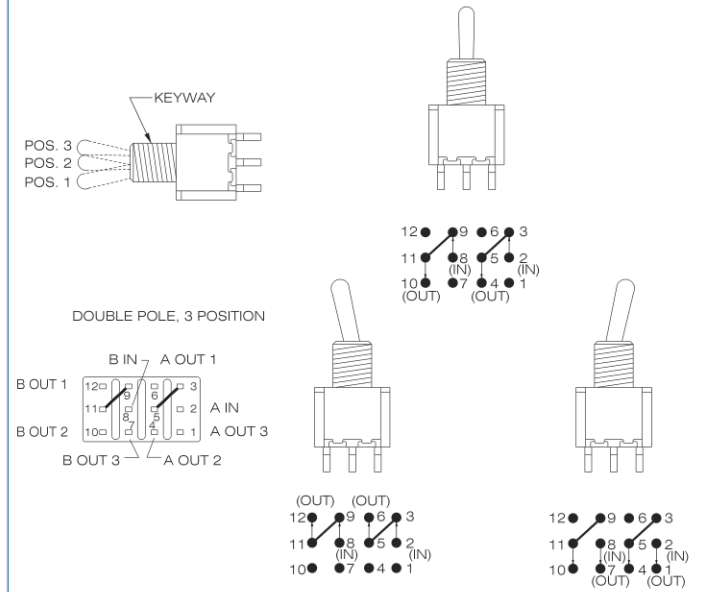
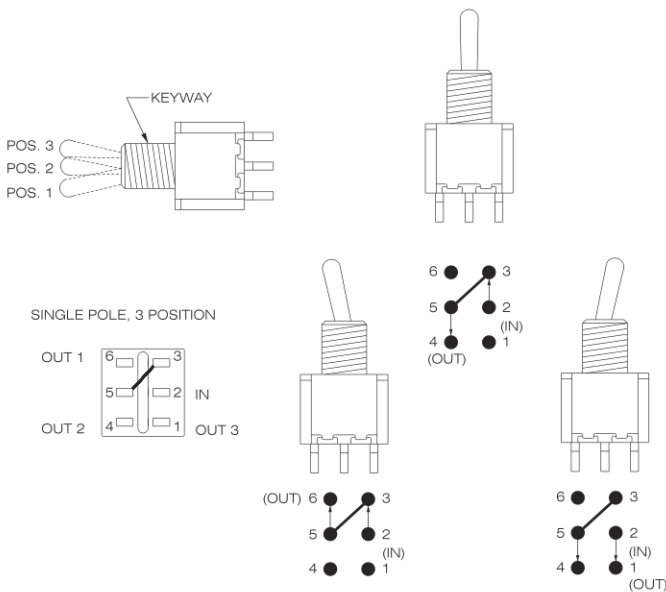
STD.



STD. FOR Z Z1



## The information of 3-way toggle switches



SP3T

DP3T