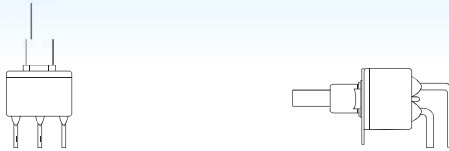




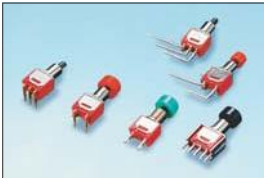
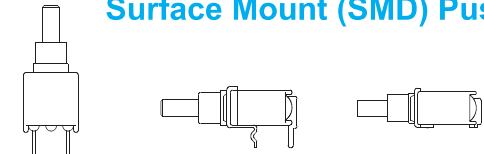
E80-P Sealed Snap-Acting Momentary Push Button Switches.....D01



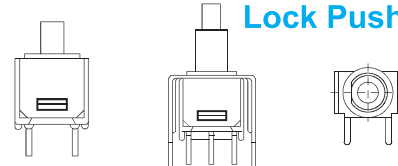
T80-P Snap-Acting Momentary Push Button SwitchesD05
T80-L Alternated Action and Momentary Pushbutton SwitchesD09



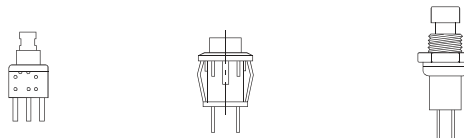
ES40-P Sealed Sub-miniature Pushbutton SwitchesD17
Surface Mount (SMD) Pushbutton SwitchesD15 (IP67)



TS40-P Sub-miniature Pushbutton SwitchesD21
Lock Pushbutton SwitchesD25



TS30-P Microminiature Pushbutton SwitchesD20
R 18 Pushbutton SwitchesD27



EPS11 Pushbutton SwitchesD29



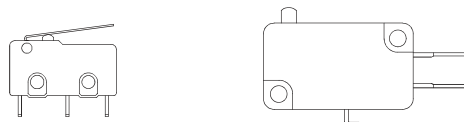
EPS12 Pushbutton SwitchesD30
EPS13 Metal Pushbutton SwitchesD31

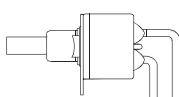
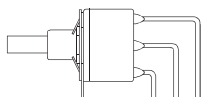
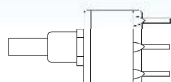
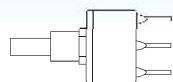


SP86 Illuminated Snap Acting Pushbutton SwitchesD32



MS Micro SwitchesD35





SPECIFICATIONS

CONTACT RATING: 1A @120 VAC or 28 VDC

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load

CONTACT RESISTANCE: 20 mΩ max. initial @2-4 VDC, 100 mA

INSULATION RESISTANCE: 1,000 MΩ min.

DIELECTRIC STRENGTH: 1,000 V RMS @ sea level.

OPERATING TEMPERATURE: -30°C to +85°C

MATERIALS

CASE & BUSHING - Glass filled nylon 6/6 or nylon 4/6 (UL94V-0)

PLUNGER - Glass filled nylon or glass filled polyester (UL94V-0), with internal o-ring seal standard

SWITCH SUPPORT - Copper alloy or steel, tin plated

CONTACT AND TERMINAL - Copper alloy, silver plated

TERMINAL SEAL - Epoxy

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) N E 8 7 0 1 - C V 1 - 2 - N - C Q - S 2 0 -

Switches Function	
NE8701	SPDT on-mon
NE8702	DPDT on-mon

Cap	
none	(none)
CV	5.08
CV1	7.70
CV2	9.53
CV4	dress nut
CV6	9.80

Cap color	
1	white
2	black
3	red
4	orange
5	yellow
6	green
7	blue
9	gray

Bushing		
E	Thd. Key-way	8.89
N	Non-thd/key-way	6.35

Termination	
B	solder lug
C	P.C 1.27width

Contact Material	
Q	silver plated
R	gold plated
G	gold over silver

RoHS code	
H	= RoHS Compliant

Vertical support Bracket	
(none)	
S20	11.68
V20	snap-in 11.68

(B) N E 8 7 0 1 - A 4 - C V 1 - 2 - N - Q -

Switches Function		Right Angle	
NE8701	SPDT on-mon	A4	Horizon
NE8702	DPDT on-mon	A5	Vertical

Cap	
none	(none)
CV	5.08
CV1	7.70
CV2	9.53
CV6	9.80

Cap color	
1	white
2	black
3	red
4	orange
5	yellow
6	green
7	blue
9	gray

Bushing	
N	(Std.) non-thd/key-way

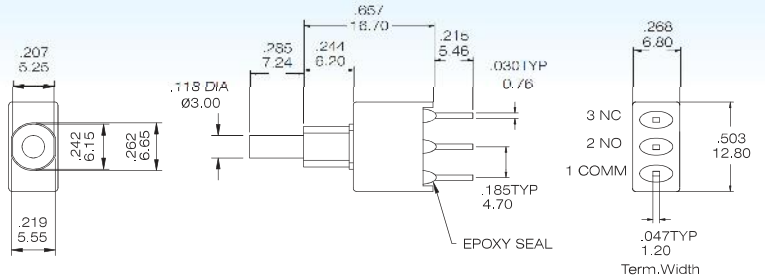
RoHS code	
H	= RoHS Compliant

Contact Material	
Q	silver plated
R	gold plated
G	gold over silver



SPDT

Model No.	Switching position	
NE8701	on	mom
Term. Comm.	1-3	1-2

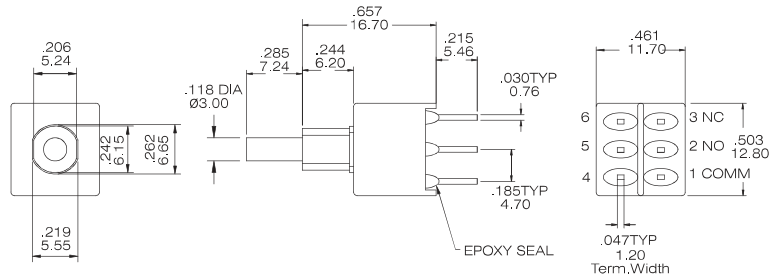


NE8701-NCQ

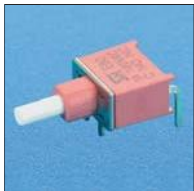


DPDT

Model No.	Switching position	
NE8702	on	mom
Term. Comm.	1-3	1-2
	4-6	4-5

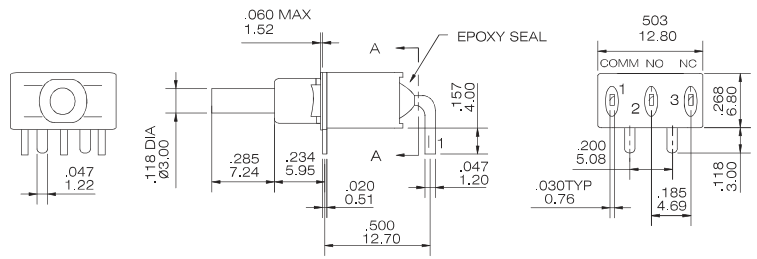


NE8702-NCQ



SPDT

Model No.	Switching position	
NE8701-A4	on	mom
Term. Comm.	1-3	1-2

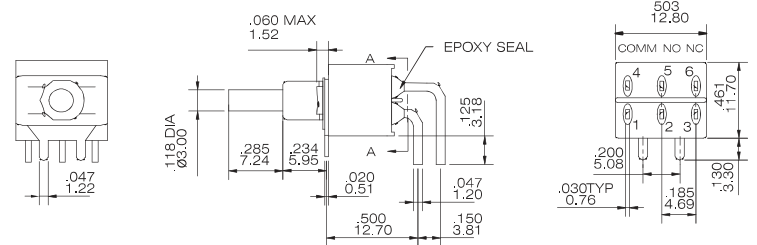


NE8701-A4-NQ

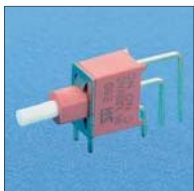


DPDT

Model No.	Switching position	
NE8702-A4	on	mom
Term. Comm.	1-3	2-2
	4-6	4-5

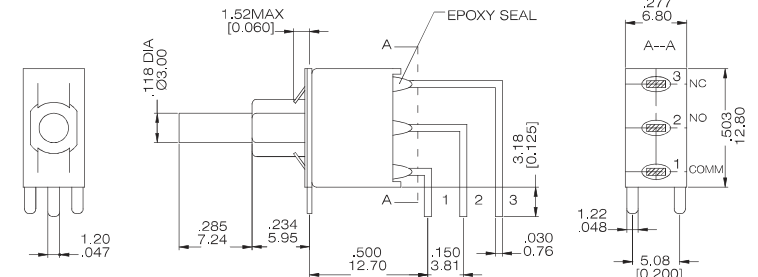


NE8702-A4-NQ

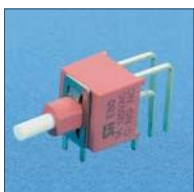


SPDT

Model No.	Switching position	
NE8701-A5	on	mom
Term. Comm.	1-3	1-2

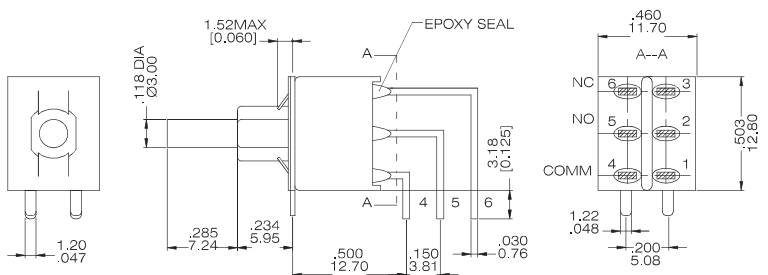


NE8701-A5-NQ



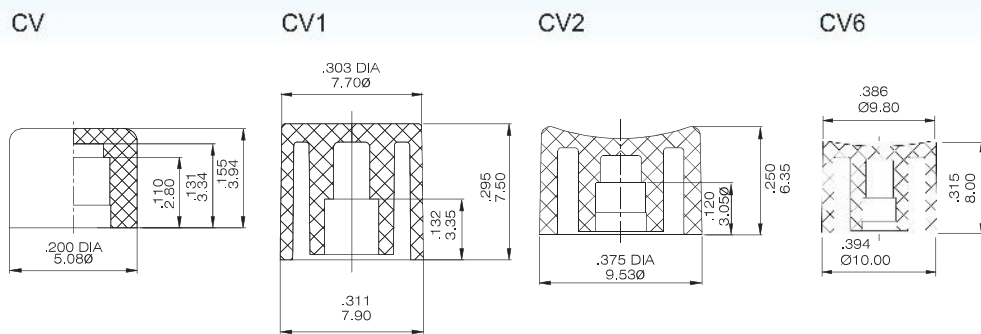
DPDT

Model No.	Switching position	
NE8702-A5	on	mom
Term. Comm.	1-3	2-2
	4-6	4-5



NE8702-A5-NQ

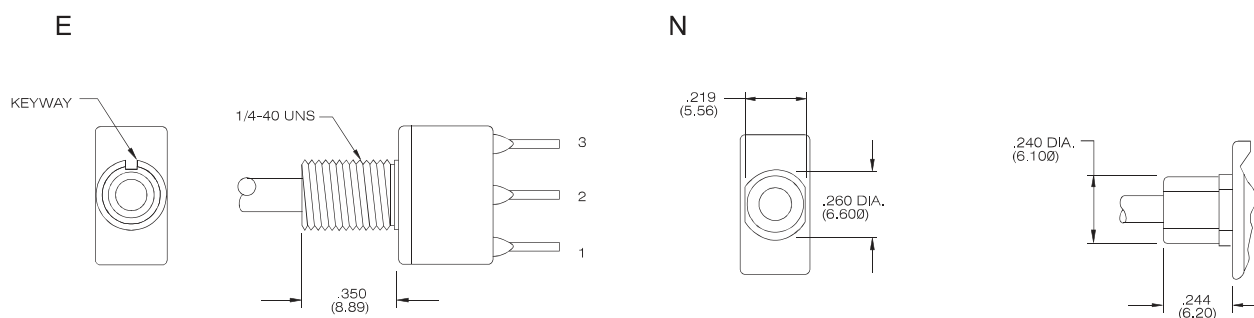
Cap Option



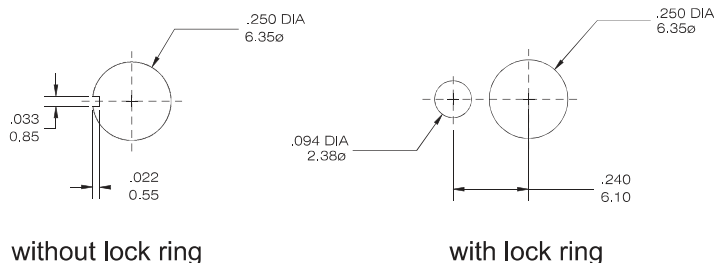
Cap color Option

CAP & ACTUATOR OPTIONS	
1	White
2	Black(Std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
9	Gray

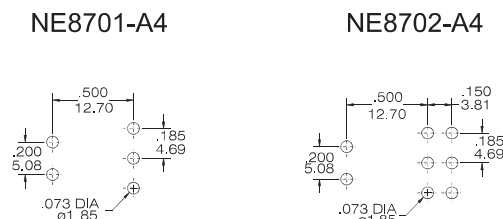
Bushing Option



Panel mounting Dimension

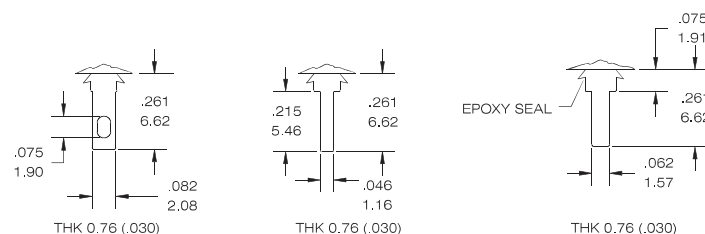


P.C.B. mounting Dimension



TERMINAL OPTION (only for the straight type)

B STD C PRINTED CIRCUIT D QUICK CONNECT



NE8701-A5

NE8702-A5

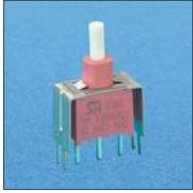


CONTACT MATERIAL OPTION

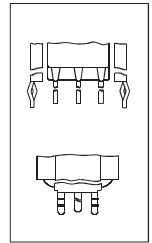
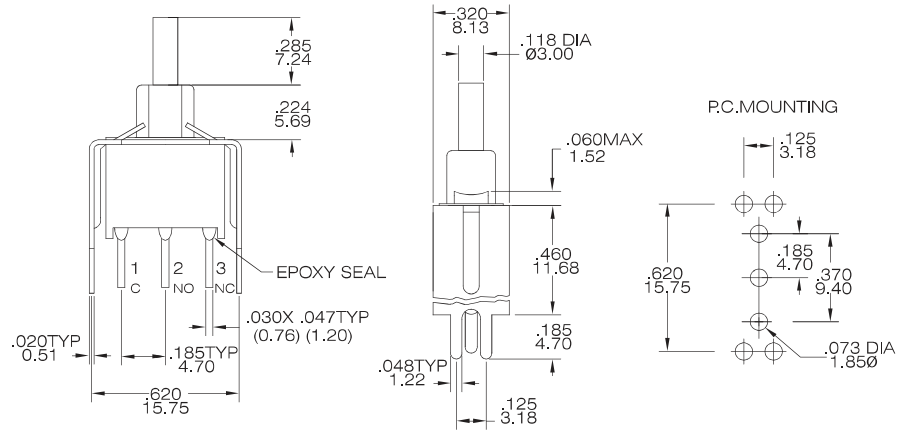
CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	1A @ 120V AC or 28 V DC;
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4 VA MAX@ 20V AC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 V AC or DC MAX or 1 A @ 120V AC or 28 V DC;

VERTICAL SUPPORT BRACKET OPTION

(only apply the straight type terminal. Please build the terminal option is "C" code)

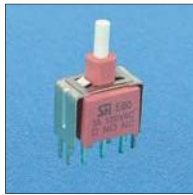


S20/V20 (SPDT)

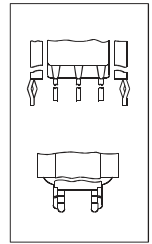
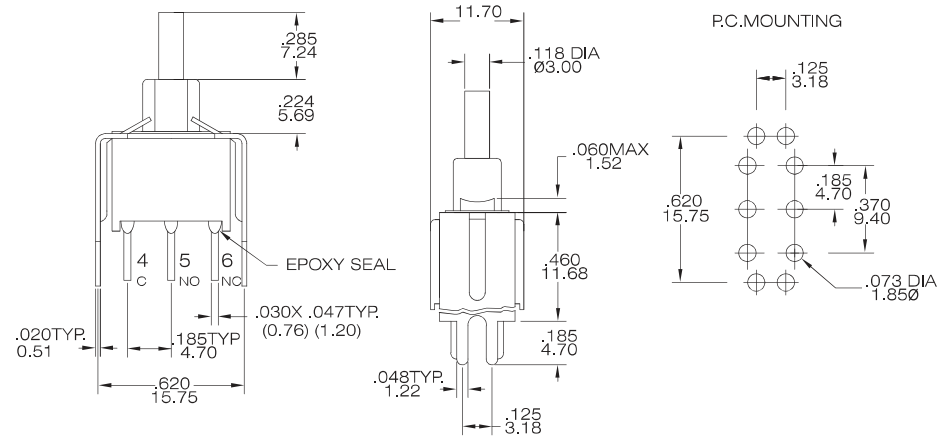


SNAP-IN
V 20

NE8701-NCQ-S20



S20/V20 (DPDT)

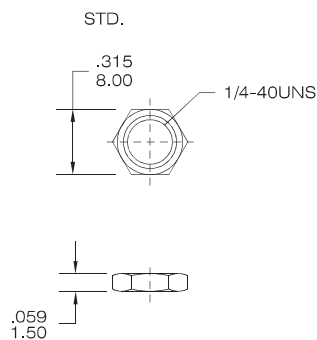


SNAP-IN
V 20

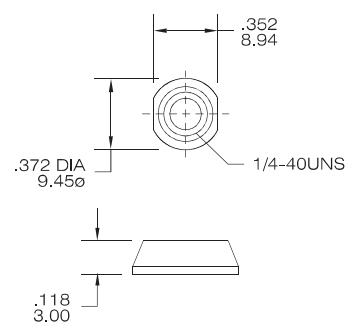
NE8702-NCQ-S20

The hard ware of E80-P push button switches

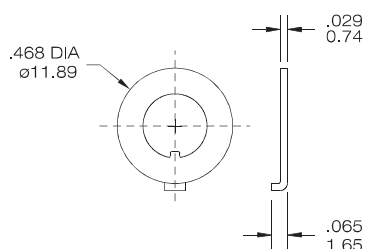
NUT



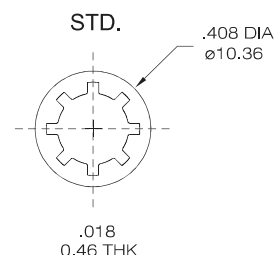
DRESS NUT

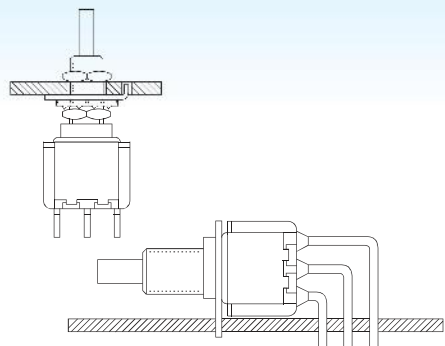


LOCKING RING



LOCK WASHER



c^{us}**SPECIFICATIONS**

CONTACT RATING: 1A @125 VAC or 28 VDC

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load

CONTACT RESISTANCE: 20 mΩ max. initial @2-4 VDC, 100 mA

INSULATION RESISTANCE: 1,000 MΩ min.

DIELECTRIC STRENGTH: 1,000 V RMS @ sea level.

OPERATING TEMPERATURE: -30°C to +85°C

MATERIALS

CASE - diallyl phthalate (DAP)

PLUNGER - Glass filled nylon or glass filled polyester (UL94V-0)

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) P 8 7 0 1 - C V 1 - 2 - C R - E - S 2 0 - -

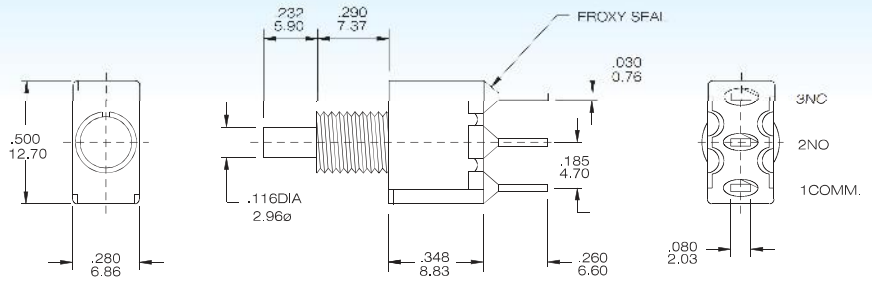
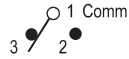
Switches Function		Cap or Actuator		Cap color		Bushing			Epoxy seal		Vertical support Bracket	
P8701	SPDT on-mom	none	(none)	1	white	F	thd /key-way	7.37	E	epoxy seal	(none)	
P8702	DPDT on-mom	CV	5.08	2	black	N	non-thd /key-way	7.37			S20	11.68
		CV1	7.70	3	red	F4	thd /key-way	6.35			V20	snap-in 11.68
		CV2	9.53	4	orange	N4	non-thd /key-way	6.35				
		CV4	dress nut	5	yellow	E	thd /key-way	8.89				
		CV6	9.80	6	green	E4	thd/key-way	7.87				
		F22A	With frame	7	blue	F8	thd /flat	7.37				
		F32A	With frame and LED	9	gray	N8	non-thd /flat	7.37				
						F9	thd /flat	6.35				
						N9	non-thd /flat	6.35				
						Termination					Rubber hood	
						B	solder lug				E4	for thd. bushing
						C	P.C 1.27width					
						D	Quick connect					
						Contact Material					RoHS code	
						Q	silver plated				H	RoHS Compliant
						R	gold plated					
						G	gold over silver					

(B) P 8 7 0 1 - A 4 - C V 1 - 2 - R - E - S -

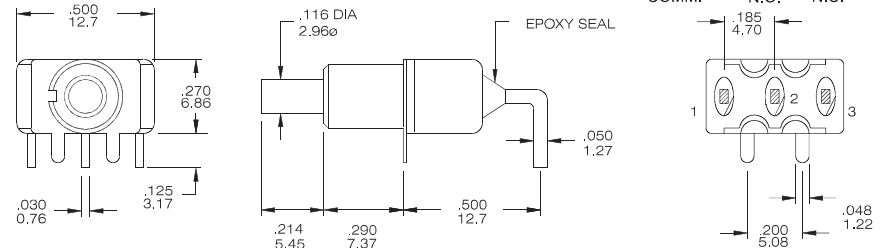
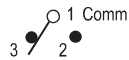
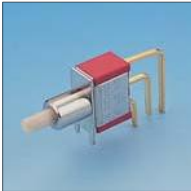
Switches Function		Right Angle		Cap		Cap color		Bushing			Contact Material	
P8701	SPDT on-mom	A4	Horizon	none	(none)	1	white	F	thd /key-way	7.37	Q	silver plated
P8702	DPDT on-mom	A5	Vertical	CV	5.08	2	black	N	non-thd /key-way	7.37	R	gold plated
				CV1	7.70	3	red	F4	thd /key-way	6.35	G	gold over silver
				CV2	9.53	4	orange	N4	non-thd /key-way	6.35		
				CV6	9.80	5	yellow	E	thd /key-way	8.89		
						6	green	E4	thd/key-way	7.87		
						7	blue	F8	thd /flat	7.37		
						9	gray	N8	non-thd /flat	7.37		
								F9	thd /flat	6.35		
								N9	non-thd /flat	6.35		
											Epoxy seal	
											E	epoxy seal
											Support Bracket	
											(none)	std.
											S	snap-in type
											RoHS code	
											H	RoHS Compliant

**T80-P****Snap Acting Momentary Pushbutton Switches****SPDT**

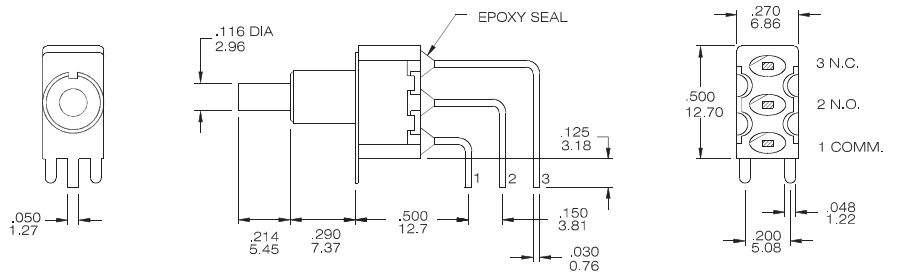
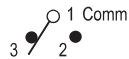
Model No.	Switching position	
P8701	on	Mom
Term. Comm.	1-3	1-2

**P8701-FBR-E****SPDT**

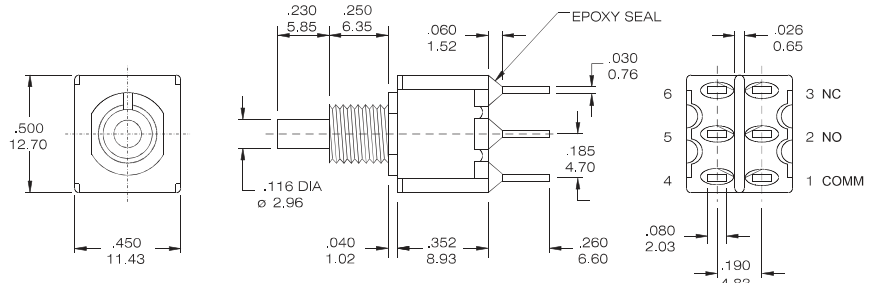
Model No.	Switching position	
P8701-A4	on	Mom
Term. Comm.	1-3	1-2

**P8701-A4-NR-E****SPDT**

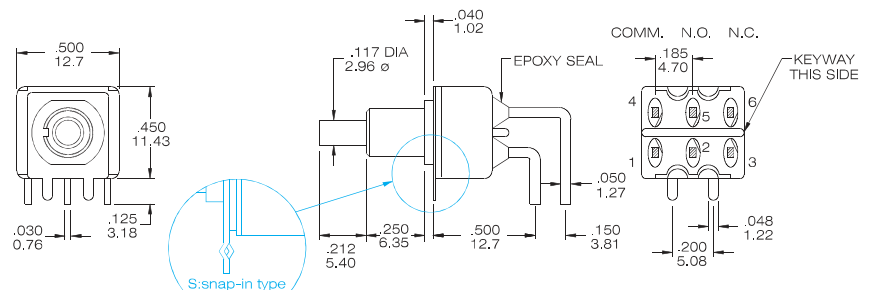
Model No.	Switching position	
P8701-A5	on	Mom
Term. Comm.	1-3	1-2

**P8701-A5-NR-E****DPDT**

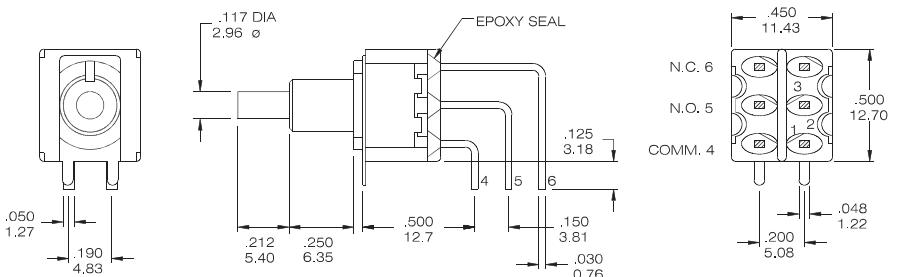
Model No.	Switching position	
P8702	on	Mom
Term. Comm.	1-3 4-6	1-2 4-5

**P8702-F4BR-E****DPDT**

Model No.	Switching position	
P8702-A4	on	Mom
Term. Comm.	1-3 4-6	1-2 4-5

**P8702-A4-N4R-E/ P8702-A4-N4R-E-S****DPDT**

Model No.	Switching position	
P8702-A5	on	Mom
Term. Comm.	1-3 4-6	1-2 4-5

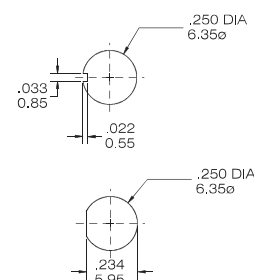
**P8702-A5-N4R-E**

**T80-P****Snap Acting Momentary Pushbutton Switches****Cap and Actuator Option****Cap color Option**

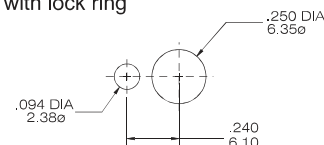
CAP & ACTUATOR OPTIONS	
1	White
2	Black(Std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
9	Gray

Panel Mounting

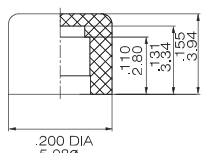
without lock ring



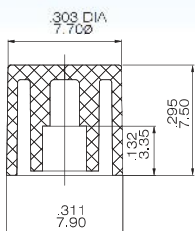
with lock ring



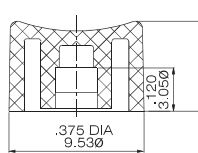
CV



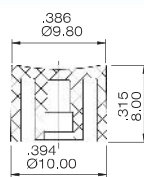
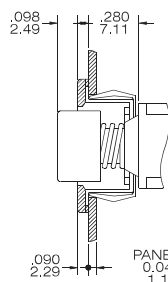
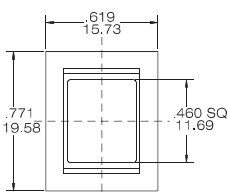
CV1



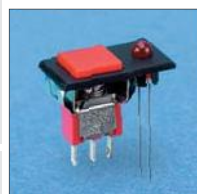
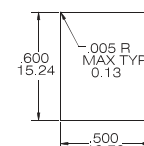
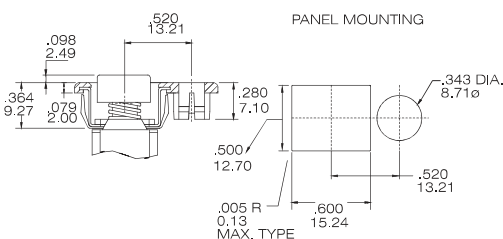
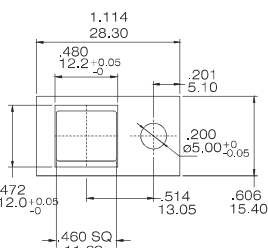
CV2



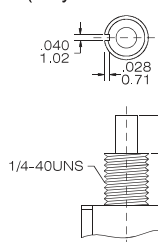
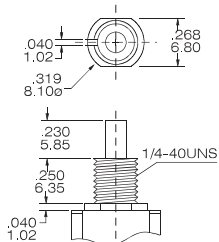
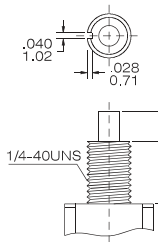
CV6

**F22A****P870 * -F22A- *-BR-E**

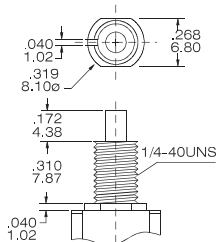
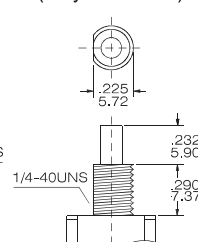
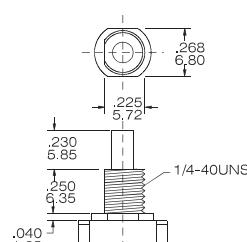
PANEL MOUNTING

**F32A****P870 * -F32A- *-BQ-E**

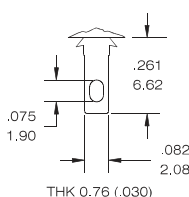
PANEL MOUNTING

Bushing OptionF thd.
N non-thd.
(only for SPDT)F4 thd.
N4 non-thd.E thd.
(only for SPDT)

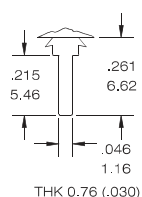
E4 thd.

F8 thd.
N8 non-thd.
(only for SPDT)F9 thd.
N9 non-thd.**TERMINAL OPTION (ONLY FOR THE STRAGT TYPE)****TERMINAL SEAL OPTION****RUBBER HOOD**

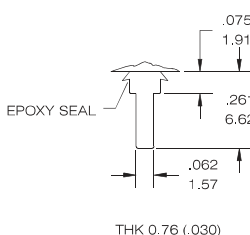
B STD



C PRINTED CIRCUIT



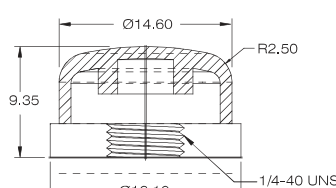
D QUICK CONNECT



E TERMINAL SEAL



E4

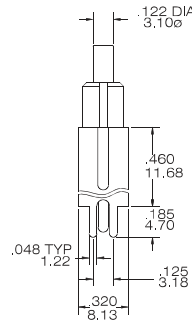
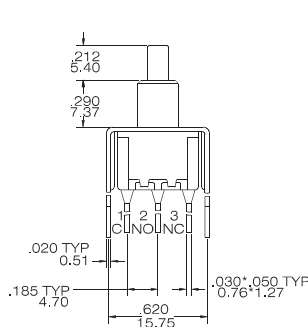
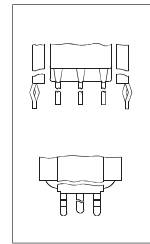
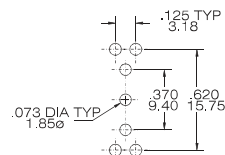
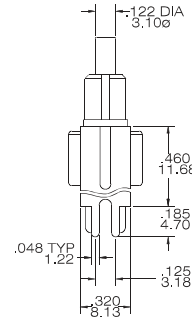
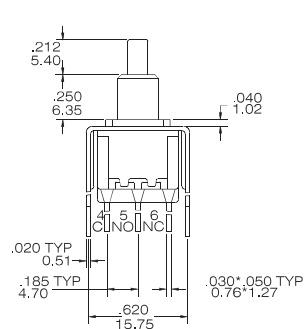
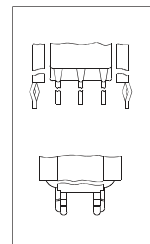
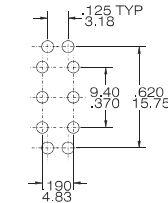
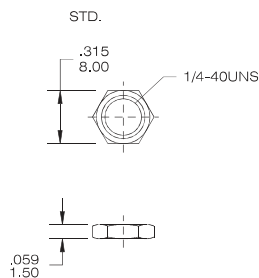
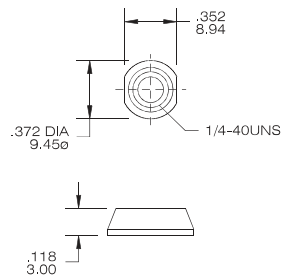
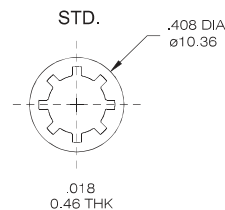
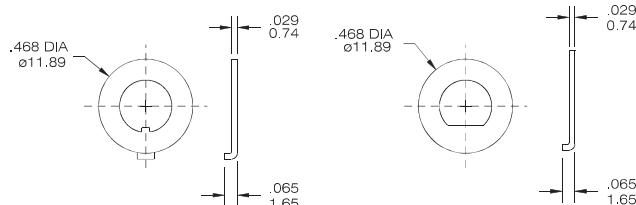
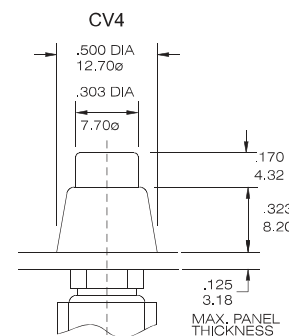


**T80-P****Snap Acting Momentary Pushbutton Switches****CONTACT MATERIAL OPTIONS**

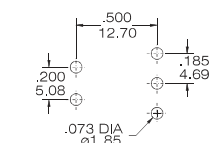
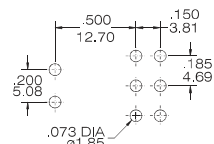
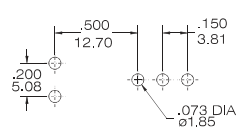
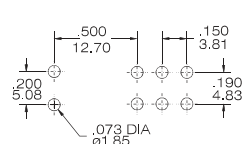
CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	1A @ 125V AC or 28 V DC;
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4 VA MAX@ 20V AC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 V AC or DC MAX or 1 A @ 125V AC or 28 V DC;

VERTICAL SUPPORT BRACKET OPTION

(only apply the straight type terminal-Please modify the terminal option is "c" code)

S20/V20**SPDT****P.C. MOUNTING****SNAP-IN
V 20****P8701-NCR-E-S20****S20/V20****DPDT****P.C. MOUNTING****SNAP-IN
V 20****P8702-N4CR-E-S20****The hard ware of T80-P push button switches****NUT****DRESS NUT****LOCK WASHER****LOCKING RING****DRESS NUT & CAP**

To order dress nut only.

The P.C.B mounting Dimension**P8701-A4****P8702-A4****P8701-A5****P8702-A5****D-08**

The dimensions in the catalogue and website are for reference only, not suitable for formal acknowledge.

INDEX

TOGGLE

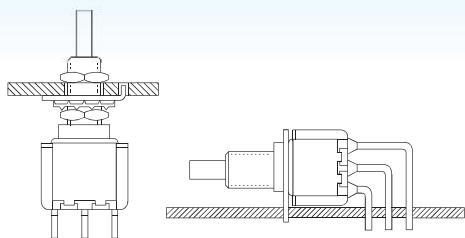
ROCKER

SLIDE

PUSH BUTTON

DIP

TACT

**T80-L (UL61058)****Alternate Action and Momentary Pushbutton Switches****UL**[®]
US
UL 61058**SPECIFICATIONS**CONTACT RATING: 6A @125 VAC or 28 VDC
3A @ 250VAC

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 +120°C

MATERIALS

CASE - diallyl phthalate (DAP)

PLUNGER - Glass filled nylon or glass filled polyester

BUSHING - Copper alloy , nickel plated

HOUSING - Stainless Steel

CONTACT AND TERMINAL - Copper alloy , silver plated

How do you build the switches you need!!(A) **L 9 6 0 1 - C V 1 - 2 - E B R - E - S 2 0 -**

Switches Function		
L9601	SPDT	on-on
L9602	DPDT	on-on
L9603	SPDT	on-mom

Cap or Actuator	
none	(none)
CV	5.08
CV1	7.70
CV2	9.53
CV4	dress nut
F22A	With frame

Cap color	
1	white
2	black
3	red
4	orange
5	yellow
6	green
7	blue
9	gray

Bushing	
E	Thd /key-way(Std.)
M	Non-thd / key-way
F	Thd / flat
N	Non-thd /flat

Epoxy seal	
(none)	none seal
E	epoxy seal

Vertical support Bracket	
(none)	
S20	11.68
S25	16.00
S35	11.68
S40	16.00
V20	snap-in 11.68
V25	snap-in 16.00
V35	snap-in 11.68
V40	snap-in 16.00

Termination	
B	solder lug
C	P.C 1.27width
D	Quick connect
D1	wire wrap 19.05
D3	wire wrap 10.8

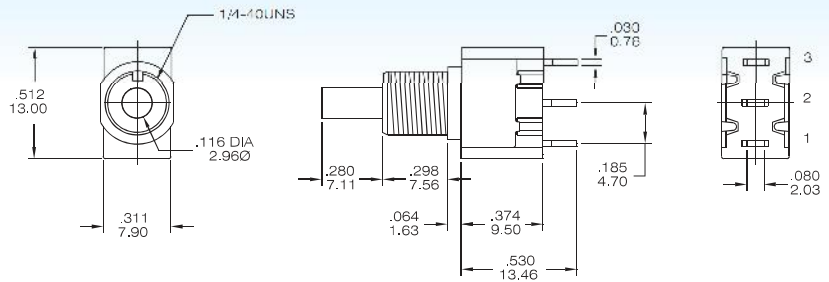
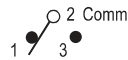
Contact Material	
Q	silver plated
R	gold plated
G	gold over silver

Plunger	
(none)	STD.
M	Metal

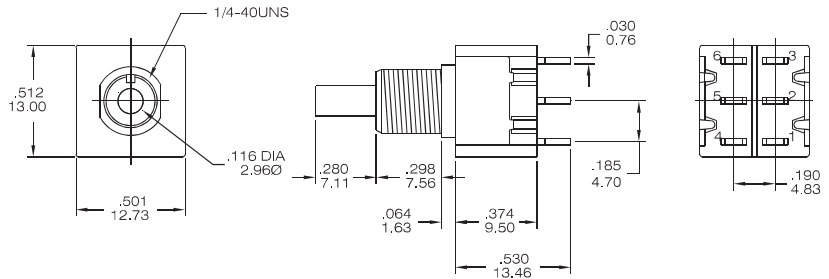
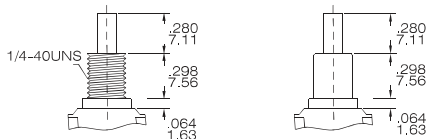
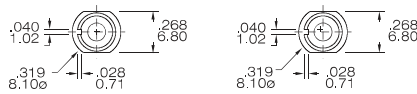
RoHS code	
H = RoHS Compliant	

**T80-L (UL61058)****Alternate Action and Momentary Pushbutton Switches****SPDT**

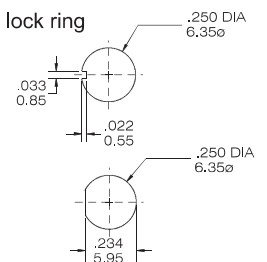
Model No.	Switching position	
L9601	on	on
L9603	on	mom
Term. Comm.	2-3	2-1

**L9601-EBR-E****DPDT**

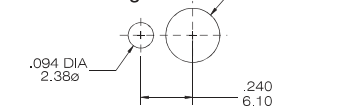
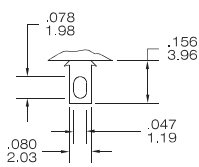
Model No.	Switching position	
L9602	on	on
Term. Comm.	2-3 5-6	2-1 5-4

**L9602-EBR-E****Bushing Option****Panel Mounting****E****M****F****N**

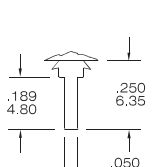
without lock ring



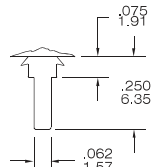
with lock ring

**Terminal Option****Terminal Seal Option****B SOLDER LUG****C PRINTED CIRCUIT****D QUICK CONNECT****WIREWRAP**

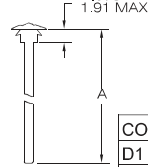
THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)

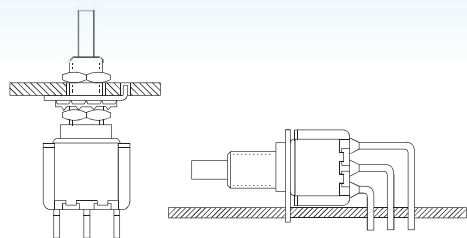
CODE	"A" dimension
D1	.750 (19.05)
D3	.425 (10.8)

E TERMINAL SEAL

EPOXY SEAL

Contact Material Options

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	6A @ 125VAC or 28 VDC ; 3A @ 250 VAC
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4 VA MAX@ 20VAC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 VAC or DC MAX or 6A @ 125VAC or 28 VDC ; 3A @ 250 VAC



SPECIFICATIONS

CONTACT RATING: 6A @125 VAC or 28 VDC
3A @ 250VAC

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)

PLUNGER - Glass filled nylon or glass filled polyester

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.B termination, please see the (B)

(A) L 8 6 0 1 - C V 1 - 2 - E B R - E - S 2 0 -

Switches Function		Cap or Actuator		Cap color		Bushing		Epoxy seal		Vertical support Bracket	
L8601	SPDT on-on	none	(none)	1	white	E	Thd /key-way(Std.)	(none)	none seal	(none)	
L8602	DPDT on-on	CV	5.08	2	black	M	Non-thd / key-way	E	epoxy seal	S20	11.68
L8603	SPDT on-mom	CV1	7.70	3	red	F	Thd / flat			S25	16.00
		CV2	9.53	4	orange	N	Non-thd /flat			S35	11.68
		CV4	dress nut	5	yellow					S40	16.00
		CV5	9.90	6	green					V20	snap-in 11.68
		CV6	9.80	7	blue					V25	snap-in 16.00
		F22A	With frame	9	gray					V35	snap-in 11.68
		F32A	With frame and LED							V40	snap-in 16.00
		Plunger				Termination					
		(none)	STD.			B	solder lug			RoHS code	
		M	Metal			C	P.C 1.27width			H = RoHS Compliant	
		M1	Metal (Snap - fitting)			D	Quick connect				
						D1	wire wrap 19.05				
						D3	wire wrap 10.8				
						Contact Material					
						Q	silver plated				
						R	gold plated				
						G	gold over silver				

(B) L 8 6 0 1 P - C V 1 - 2 - M R - E -

Horizon Right Angle	Vertical Right Angle	Switches Function	Cap		Cap color	Bushing	Epoxy seal
L8601P	L8601L	SPDT on-on	none	(none)	1 white	M Non thd./ key-way	(none) none seal
L8602P	L8602L	DPDT on-on	CV	5.08	2 black	N Non Thd / flat	E epoxy seal
L8603P	L8603L	SPDT on-mom	CV1	7.70	3 red	E Thd /key-way	
			CV2	9.53	4 orange	F Thd / flat	
			CV5	9.90	5 yellow		
			CV6	9.80	6 green		
					7 blue		
					9 gray		
			Plunger			Contact Material	
			(none)	STD.		Q silver plated	(none) std. straight type
			M	Metal		R gold plated	S snap-in type
			M1	Metal (Snap - fitting)		G gold over silver	
							RoHS code
							H = RoHS Compliant



T80-L (UL1054)

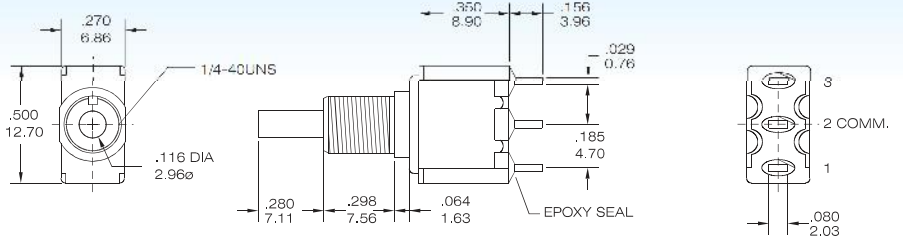
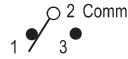
Alternate Action and Momentary Pushbutton Switches



SPDT



Model No.	Switching position	
L8601	on	on
L8603	on	mom
Term. Comm.	2-3	2-1

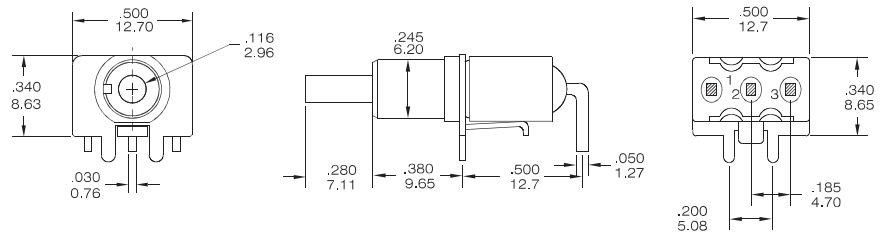


L8601-EBR-E

SPDT



Model No.	Switching position	
L8601P	on	on
L8603P	on	mom
Term. Comm.	2-3	2-1

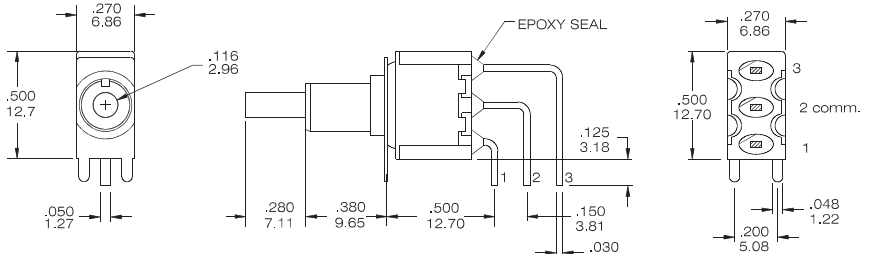
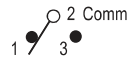


L8601P-MR-E

SPDT



Model No.	Switching position	
L8601L	on	on
L8603L	on	mom
Term. Comm.	2-3	2-1

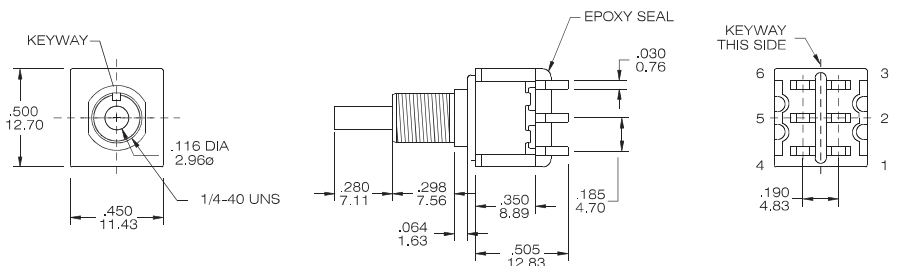


L8601L-MR-E

DPDT



Model No.	Switching position	
L8602	on	on
Term. Comm.	2-3 5-6	2-1 5-4

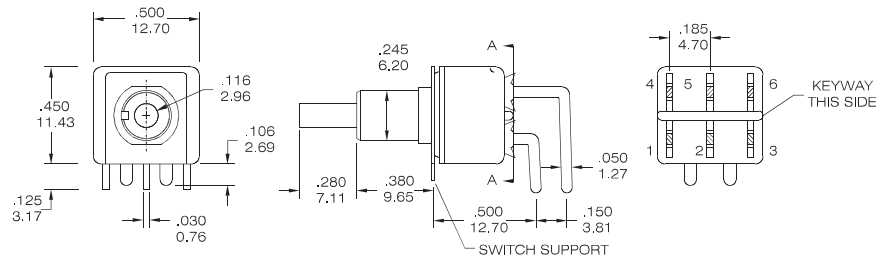
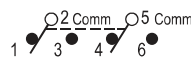


L8602-EBR-E

DPDT



Model No.	Switching position	
L8602P	on	on
Term. Comm.	2-3 5-6	2-1 5-4

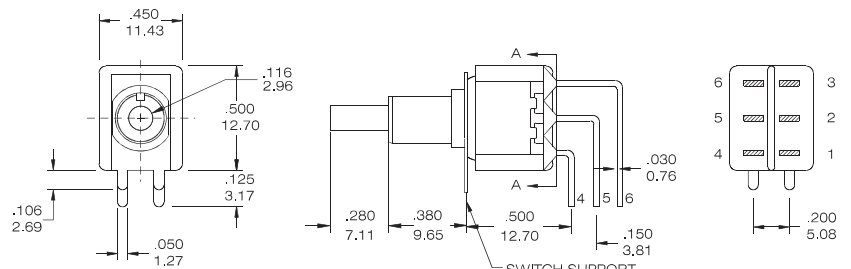


L8602P-MR-E

DPDT



Model No.	Switching position	
L8602L	on	on
Term. Comm.	2-3 5-6	2-1 5-4



L8602L-MR-E

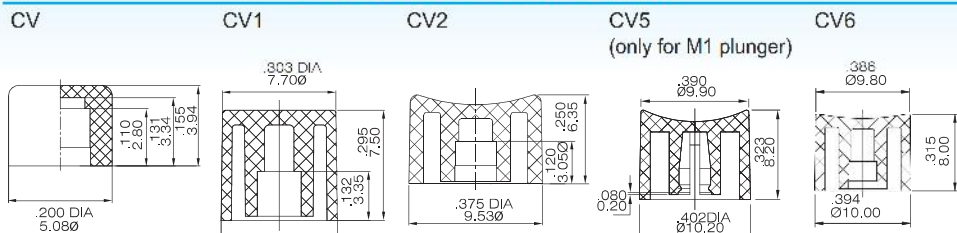


T80-L

Alternate Action and Momentary Pushbutton Switches



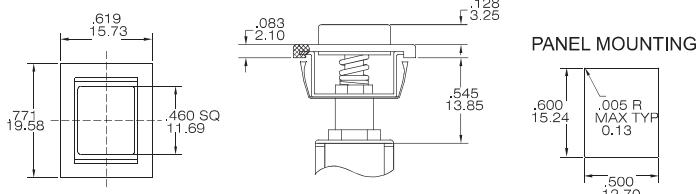
Cap and Actuator Option



F22A



F32A



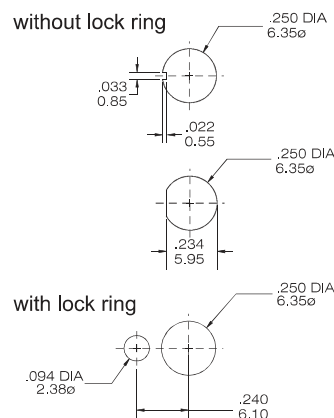
L860 *-F22A- *-BR-E

L860 *-F32A- *-BR-E

CAP & ACTUATOR OPTIONS

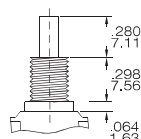
1	White
2	Black(Std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
9	Gray

Panel Mounting



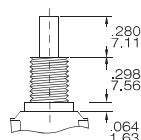
Plunger Option

Bushing Option



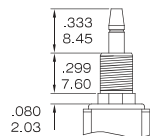
(none) STD.

Plunger material:
Glass filled nylon or
glass filled polyester.



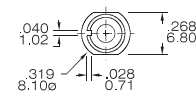
M

Plunger material:
Brass, chrome plated.

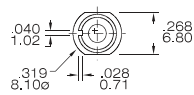


M1 Snap - fitting

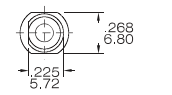
Plunger material:
Brass, chrome plated.



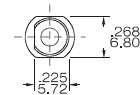
E



M



F



N

TERMINAL OPTION (ONLY FOR THE STRAIGHT TYPE L8601~L8602)

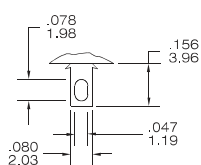
TERMINAL SEAL OPTION

B SOLDER LUG

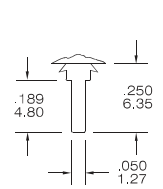
C PRINTED CIRCUIT

D QUICK CONNECT

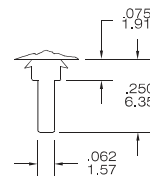
WIREWRAP



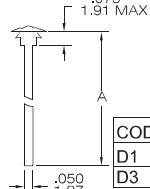
THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)

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

E TERMINAL SEAL



EPOXY SEAL

CONTACT MATERIAL OPTIONS

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	6A @ 125VAC or 28 VDC ; 3A @ 250 VAC
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4 VA MAX @ 20VAC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 VAC or DC MAX or 6A @ 125VAC or 28 VDC ; 3A @ 250 VAC

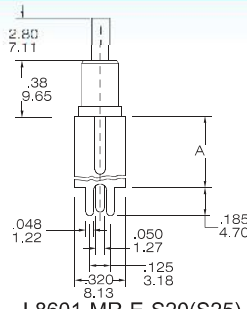
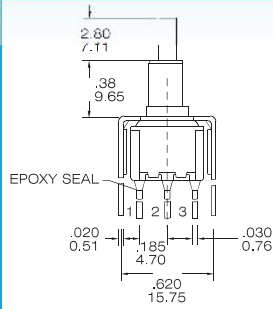
VERTICAL SUPPORT BRACKET OPTION

(only apply the straight type terminal . Please choose the terminal option in "c" code)

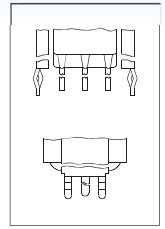
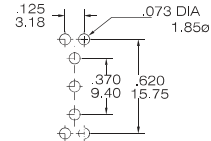
S20 / S25 / V20 / V25



option Code	A dimension
S20/V20	.460 11.68
S25/V25	.630 16.00
V20/V25: the snap-in type	

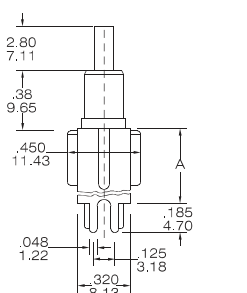
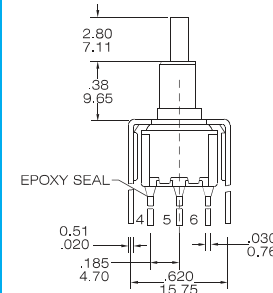


P.C. MOUNTING

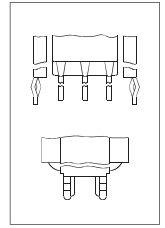
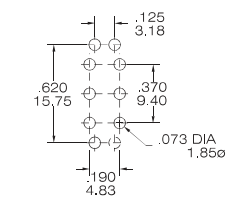


SNAP-IN
V20/ V25

L8601-MR-E-S20(S25)



P.C. MOUNTING



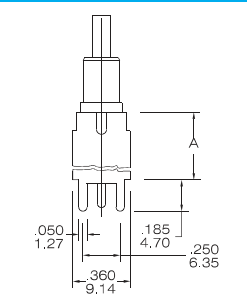
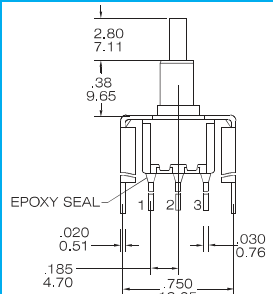
SNAP-IN
V20/ V25

L8602-MR-E-S20(S25)

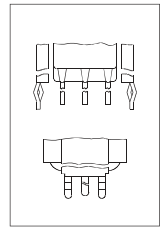
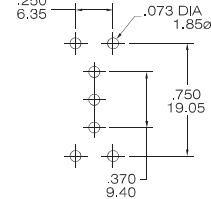
S35 / S40 / V35 / V40



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

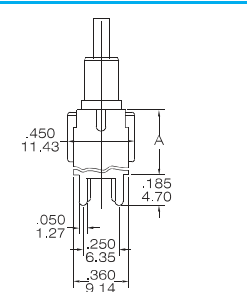
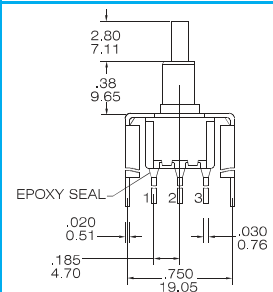


P.C. MOUNTING

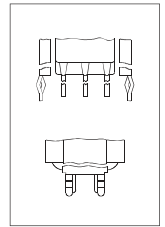
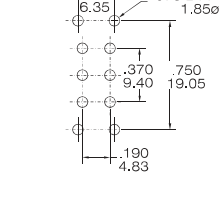


SNAP-IN
V35/ V40

L8601-MR-E-S35(S40)



P.C. MOUNTING

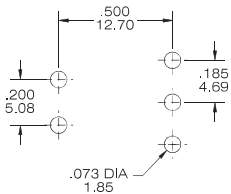


SNAP-IN
V35/ V40

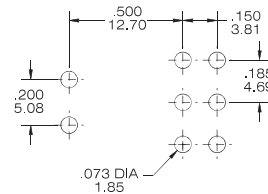
L8602-MR-E-S35(S40)

The P.C.B mounting Dimensions

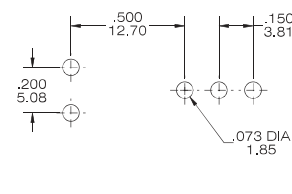
L8601P



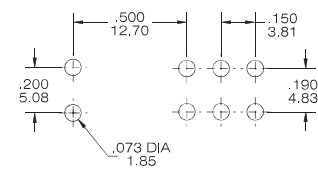
L8602P



L8601L

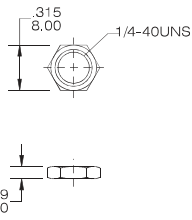


L8602L

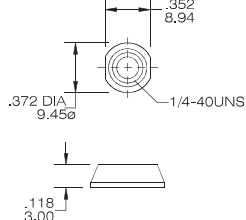


The hard ware of T80-L push button switches

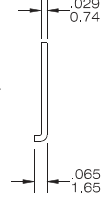
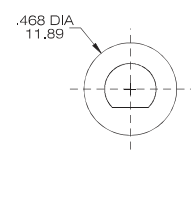
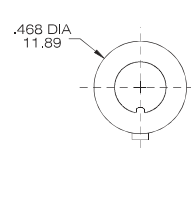
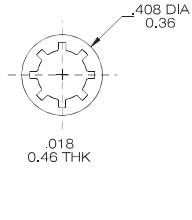
STD.



DRESS NUT



STD.



FEATURES:

1. Sealed construction - internal actuator o-ring and epoxy terminal seal standard
2. Carry the IP67 approvals
3. Surface mounting (SMT)
4. Tape and Reel package

c **UL** [®] **US**
UL 61058



SPECIFICATIONS

CONTACT RATING: R- 0.4 VA max @ 20 V AC or DC
ELECTRICAL LIFE: 30,000 make-and-break cycles at full load
CONTACT RESISTANCE: 20 mΩ max. initial @ 2-4 VDC, 100 mA
INSULATION RESISTANCE: 1,000 MΩ min.
DIELECTRIC STRENGTH: 1,500 V RMS @ sea level.
DEGREE OF PROTECTION : IP67
OPERATING TEMPERATURE: -30°C to +85°C

MATERIALS

CASE and BUSHING - glass filled nylon 4/6, flame retardant heat stabilized (UL94V-0)
PLUNGER - Thermoplastic polyester or glass filled nylon (UL94V-0)
CONTACT AND TERMINAL - Copper alloy, silver plated
SWITCH SUPPORT - Copper alloy, tin plated
TERMINAL SEAL - Epoxy



How do you modify the switches you need!!

(A) E S - 2 0 - C V - 1 - R - T/R -

Switches Function		
ES-20	SPST	off-mom. Sideward terminal
ES-20A	SPDT	on-mom. Sideward terminal
ES-26	SPST	off-mom. Backward terminal
ES-26A	SPDT	on-mom. Backward terminal
ES-27	SPST	off-mom. Backward terminal
ES-27A	SPDT	on-mom. Backward terminal

Cap	
CV	5.08
CV1	7.62

Cap color	
1	white
2	black
3	red
4	orange
5	yellow
6	green
7	blue
9	gray

Plunger	
(none)	5.46(std.)
SP	3.00
FP	flush type

Contact Material	
Q	silver plated
R	gold plated
G	gold over silver
K	gold / tin

Package	
(none)	polly bag
T/R	tape & reel

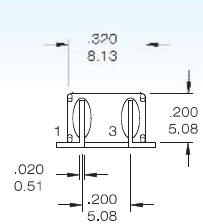
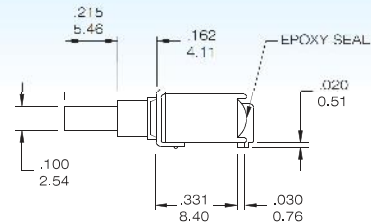
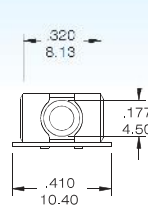
RoHS code	
H	= RoHS Compliant



SPST

Model No.	Switching position	
ES-20	Off	Mom
Term. Comm.	open	1-3

SCHEMATIC



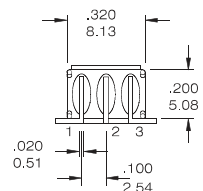
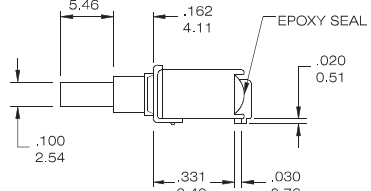
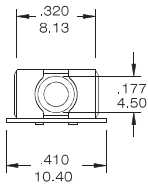
ES-20- R



SPDT

Model No.	Switching position	
ES-20A	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC



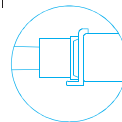
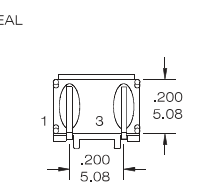
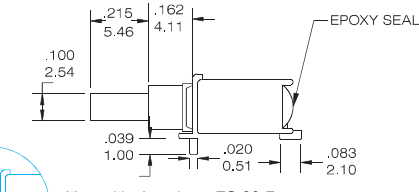
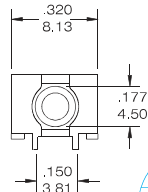
ES-20A- R



SPST

Model No.	Switching position	
ES-26	Off	Mom
ES-27	Off	Mom
Term. Comm.	open	1-3

SCHEMATIC



with positioning pings: ES-26-R
without positioning pings: ES-27-R

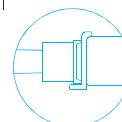
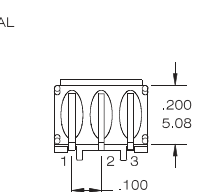
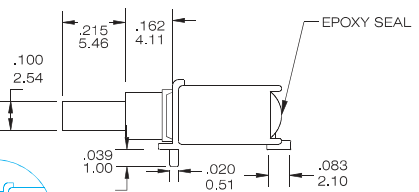
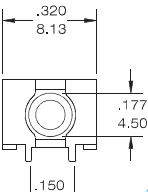
ES-26-R / ES-27-R



SPDT

Model No.	Switching position	
ES-26A	On	Mom
ES-27A	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

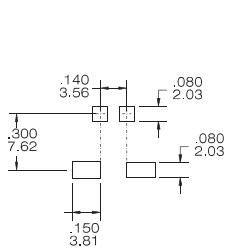


with positioning pings: ES-26A-R
without positioning pings: ES-27A-R

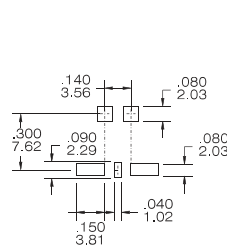
ES-26A-R / ES-27A-R

Cap and Actuator Option / Cap color Option / Plunger Option please see the page D19

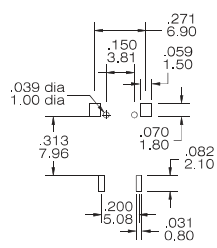
THE P.C.B MOUNTING



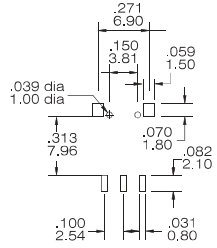
ES-20



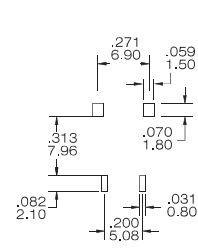
ES-20A



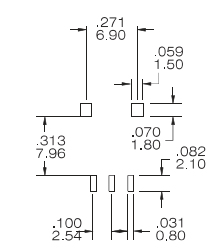
ES-26



ES-26A



ES-27



ES-27A

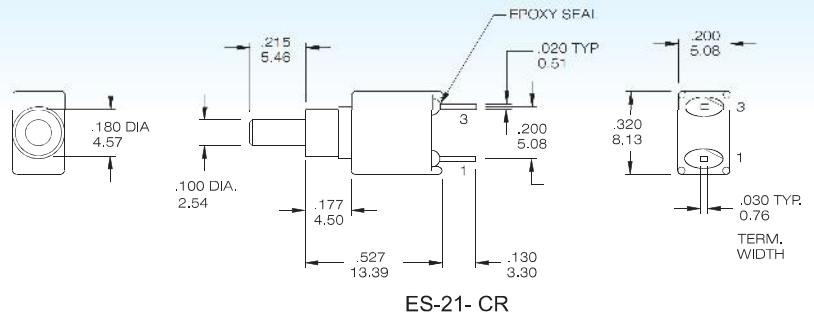
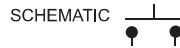
CONTACT MATERIAL OPTIONS

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	1 A @ 120V AC or 28 V DC;
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 1 A @ 120V AC or 28 V DC;
K	Gold plated over nickel plated	Tin over nickel plated	0.4VA MAX @ 20 V AC or DC MAX

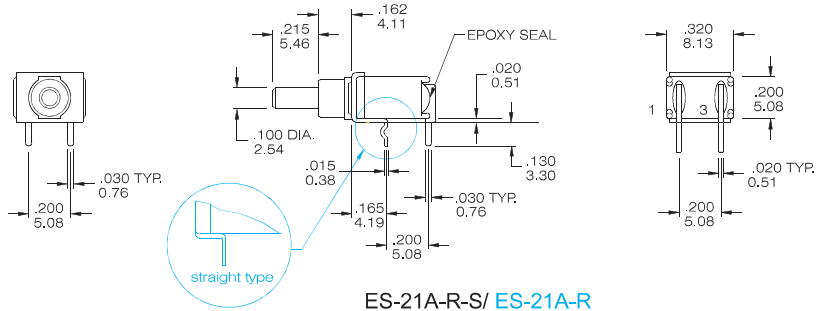


**ES40-P****Sealed Sub-Miniature Push button Switches****SPST**

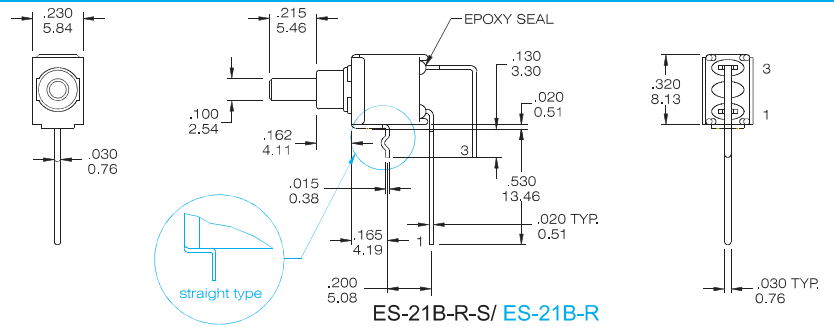
Model No.	Switching position	
ES-21	Off	Mom
Term. Comm.	open	1-3

**SPST**

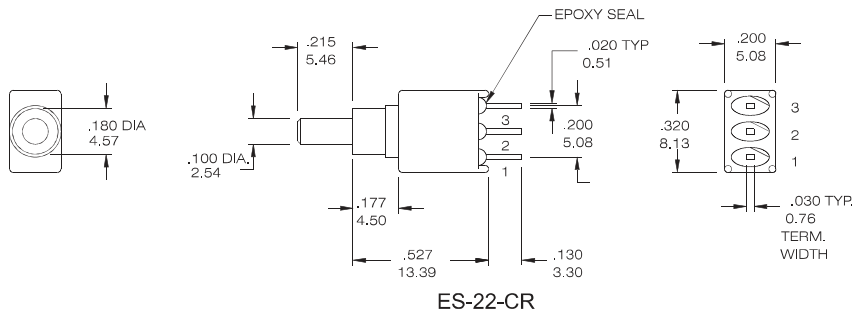
Model No.	Switching position	
ES-21A	Off	Mom
Term. Comm.	open	1-3

**SPST**

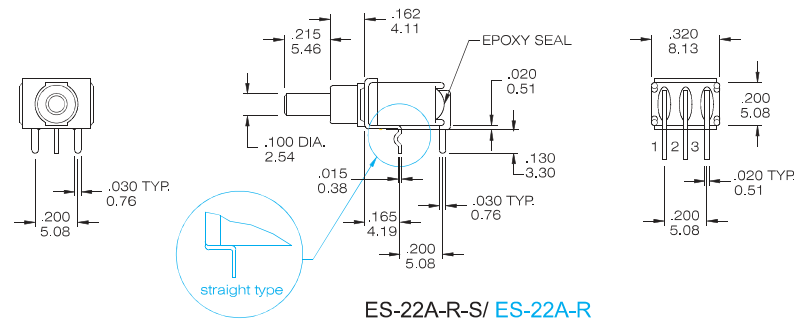
Model No.	Switching position	
ES-21B	Off	Mom
Term. Comm.	open	1-3

**SPDT**

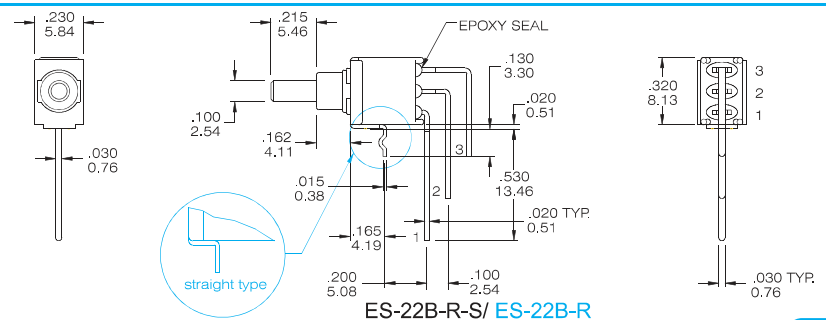
Model No.	Switching position	
ES-22	On	Mom
Term. Comm.	2-1	2-3

**SPDT**

Model No.	Switching position	
ES-22A	On	Mom
Term. Comm.	2-1	2-3

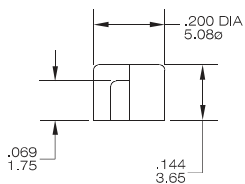
**SPDT**

Model No.	Switching position	
ES-22B	On	Mom
Term. Comm.	2-1	2-3

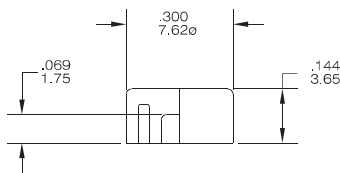


**ES40-P****Sealed Sub-Miniature Push button Switches****Cap Option**

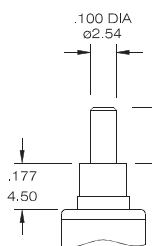
CV



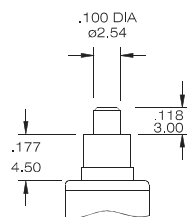
CV1

**Cap color Option**

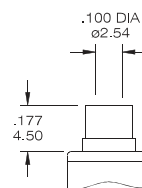
CAP & ACTUATOR OPTIONS	
1	White
2	Black(Std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
9	Gray

The Plunger Option

(none) std.



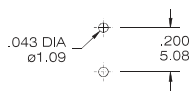
SP



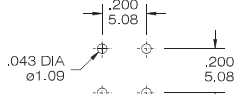
FP flush type

The P.C.B MOUNTING

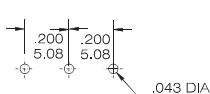
ES-21



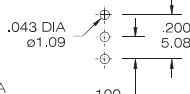
ES-21A



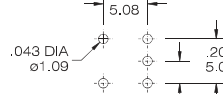
ES-21B



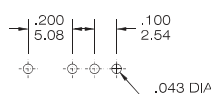
ES-22



ES-22A



ES-22B

**CONTACT MATERIAL OPTIONS**

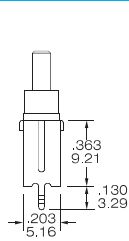
CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	1 A @ 120V AC or 28 V DC;
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4VA MAX @ 20 V AC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 V AC or DC MAX or 1 A @ 120V AC or 28 V DC;
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

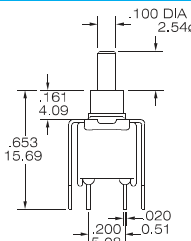
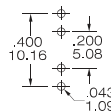
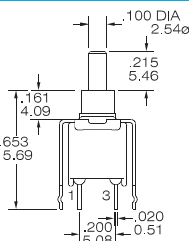
VERTICAL SUPPORT BRACKET OPTION

only for the ES-21/ES-22 .

A5S

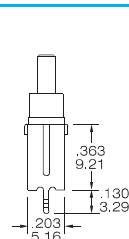


ES-21-CR-A5S (std.) snap-in type

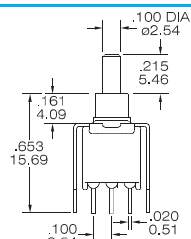
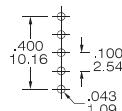
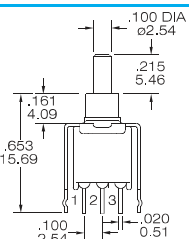


A5 straight type

A5S



ES-22-CR-A5S (std.) snap-in type



A5 straight type

**TS30-P****Micro-miniature Pushbutton Switches****SPECIFICATIONS**

CONTACT RATING: Q: 500mA @120 VAC or 28 VDC
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load
 CONTACT RESISTANCE: 20 mΩ max. initial @2-4 VDC, 100 mA
 INSULATION RESISTANCE: 1,000 MΩ min.
 DIELECTRIC STRENGTH: 500 V RMS @ sea level.
 OPERATING TEMPERATURE: -30°C to 85°C

MATERIALS

Base - diallyl phthalate (DAP) (UL94V-0)
 Plunger -Glass filled Nylon(UL94V-0)
 Bushing -Copper alloy , nickel plated
 CONTACT AND TERMINAL - Copper alloy , silver plated

How do you build the switches you need!!

T S - 3 1 - Z - R - E - 2 -

Switch Type	
TS-31	SPST short
TS-32	SPST long
TS-33	SPST click

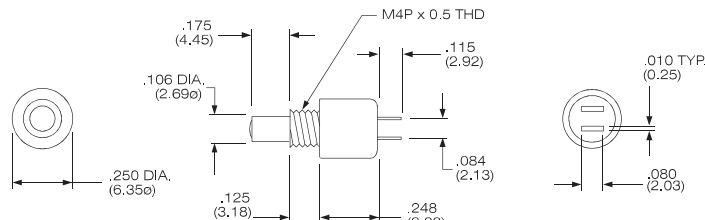
Terminal
Z
C

Contact material
Q silver plated
R gold plated
G Gold over silver

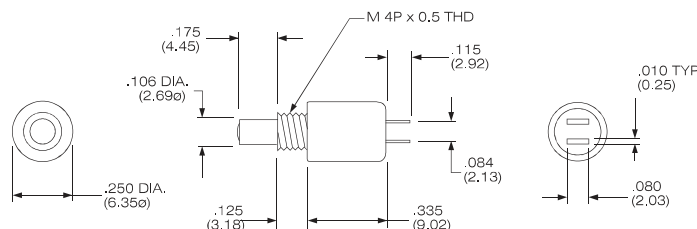
Epoxy seal
(none) none seal
E terminal seal

Plunger color
1 White
2 Black

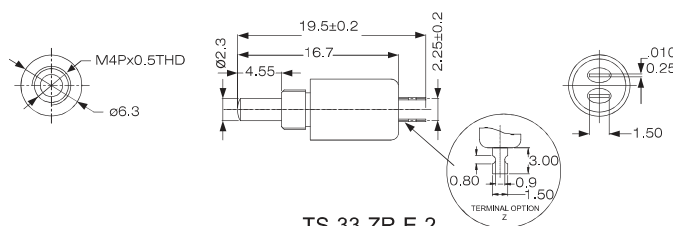
RoHS code
H = RoHS Compliant

**TS-31-ZR-E-2**

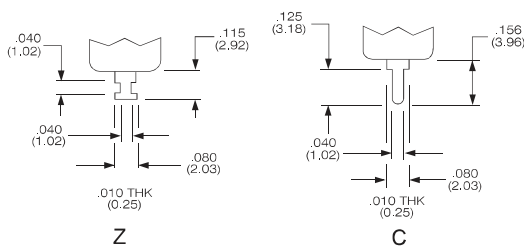
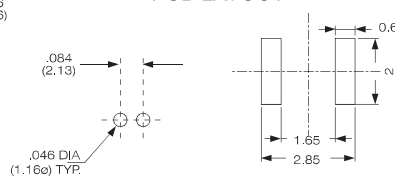
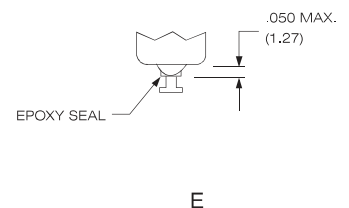
MODEL NO.	SWITCH FUNCTION	
	POS. 1	POS. 2
TS-31	OFF	MOM.
Schematic:		
N.O. Total Travel: .040 (1.02) typ. Actuation Force: 5 OZ. (140g) typ. MOM = Momentary		

**TS-32-ZR-E-2**

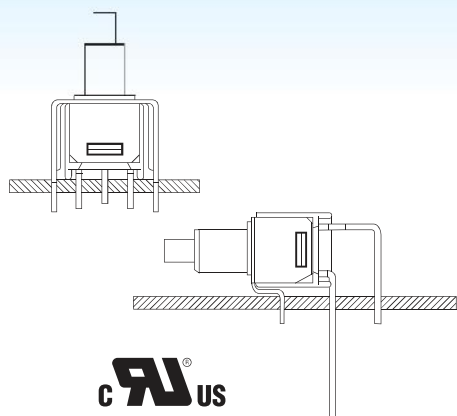
MODEL NO.	SWITCH FUNCTION	
	POS. 1	POS. 2
TS-32	OFF	MOM.
Schematic:		
N.O. w/Overtravel Total Travel: .059 (1.50) Overtravel: .024 (0.61) typ. Actuation Force: 6.25 OZ. (177g) typ. MOM = Momentary		

**TS-33-ZR-E-2**

MODEL NO.	SWITCH FUNCTION	
	POS. 1	POS. 2
TS-33	OFF	MOM.
TS-33A	ON	MOM.
Schematic:		
N.O. Total Travel: .071 (1.80) typ.		

TERMINAL OPTION**Z****C****PCB LAYOUT****TS-31 / TS-32****TS-33****TERMINAL SEAL OPTION****E****CONTACT MATERIAL OPTIONS**

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	500mA @ 120 V AC or 28 V DC
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4VA MAX @ 20V 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 500mA @ 120 V AC or 28 V DC



SPECIFICATIONS

CONTACT RATING:Q: 1A @120 VAC or 28 VDC

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load

CONTACT RESISTANCE: 20 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)

PLUNGER - thermoplastic polyester

BUSHING - Copper alloy , nickel plated

HOUSING - Stainless Steel

CONTACT AND TERMINAL - Copper alloy , silver plated

SWITCH SUPPORT - Copper alloy , tin plated

How do you build the switches you need!!

The TS-21 / TS-22 , please see the (A) :

The TS-21A/TS-21B/TS-22A/TS-22B, please see the (B)

(A) T S - 2 1 - C V - 2 - S B Q - E - A 5 -

Switches Function	
TS-21	SPST off-mom.
TS-22	SPDT on-mom.

Cap or Actuator	
(none)	none
CV	5.08
CV1	7.62
F22A	With frame

Cap color	
1	white
2	black
3	red
4	orange
5	yellow
6	green
7	Blue
9	Gray

Plunger		
(none) FP	std. flush type	

Bushing		
S	10-48 thd.(FLAT)	5.59
U	none thd.(FLAT)	5.59
T	none thd.(ROUND)	5.59
V	1/4-40 thd.	7.87
V1	none thd.	7.87
S9	flush	

Termination	
B	solder lug
C	P.C
D	wire wrap

Vertical support Bracket	
(none) A5 A5S	(std)straight type snap-in type

Contact Material	
R	silver plated
Q	gold plated
G	gold over silver
K	gold / tin

Epoxy seal	
(none) E	none seal epoxy seal

RoHS code	
H = RoHS Compliant	

(B)

T	S
---	---

 -

2	1
---	---

A

 -

C	V	1
---	---	---

 -

2

 -

--	--

U

Q

 -

E

 -

--

 -

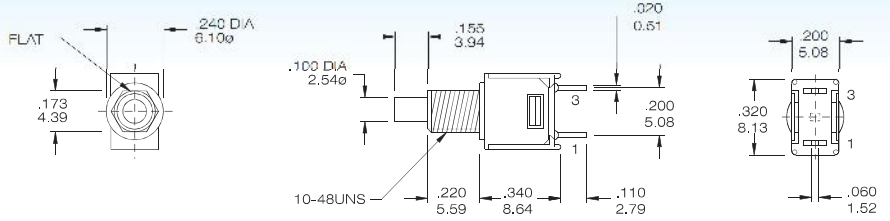
--

Horizon Right Angle	Vertical Right Angle	Switches Function	Cap		Plunger		Epoxy seal		
TS-21A TS-22A	TS-21B TS-22B	SPST off-mom. SPDT on-mom.	(none) CV CV1	none 5.08 7.62	(none) FP	std. flush type	(none) E	none seal epoxy seal	
			Cap color		Bushing		Support Bracket		
			1	white	S	10-48 thd.(FLAT)	5.59	(none)	Std. straight type
			2	black	U	none thd.(FLAT)	5.59	S	snap-in type
			3	red	T	none thd.(ROUND)	5.59		
			4	orange	S9	flush			
			5	yellow	Contact Material				
			6	green	Q	silver plated			
			7	Blue	R	gold plated			
			9	Gray	G	gold over silver			
					K	gold / tin			
							RoHS code		
							H = RoHS Compliant		

**TS40-P****Sub-Miniature Push button Switches****SPST**

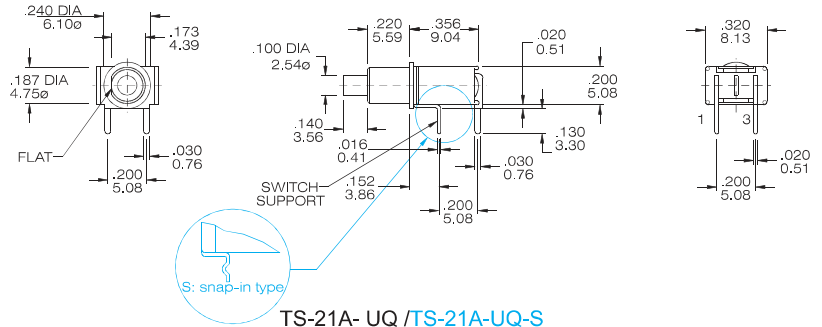
Model No.	Switching position	
TS-21	Off	Mom
Term. Comm.	open	1-3

SCHEMATIC

**TS-21- SBQ****SPST**

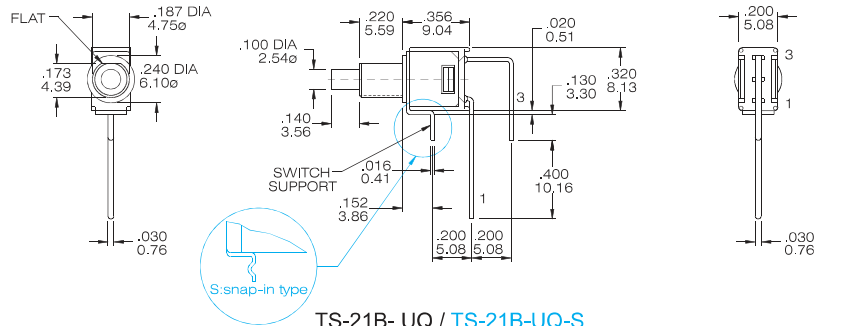
Model No.	Switching position	
TS-21A	Off	Mom
Term. Comm.	open	1-3

SCHEMATIC

**TS-21A- UQ /TS-21A-UQ-S****SPST**

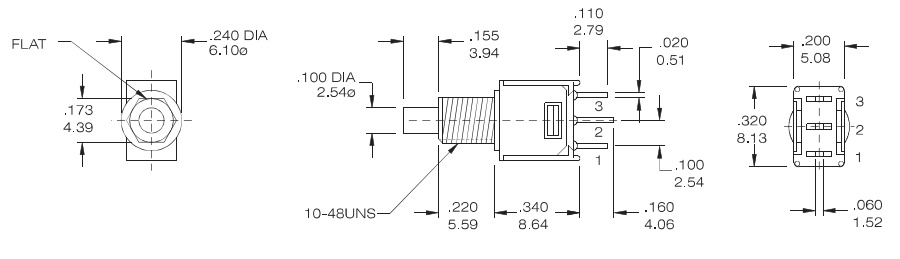
Model No.	Switching position	
TS-21B	Off	Mom
Term. Comm.	open	1-3

SCHEMATIC

**TS-21B- UQ / TS-21B-UQ-S****SPDT**

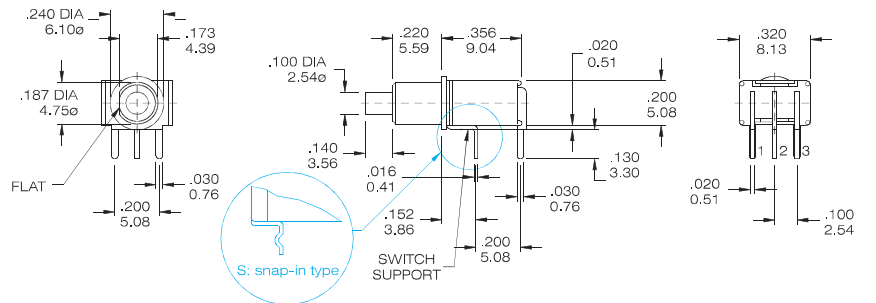
Model No.	Switching position	
TS-22	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TS-22- SBQ****SPDT**

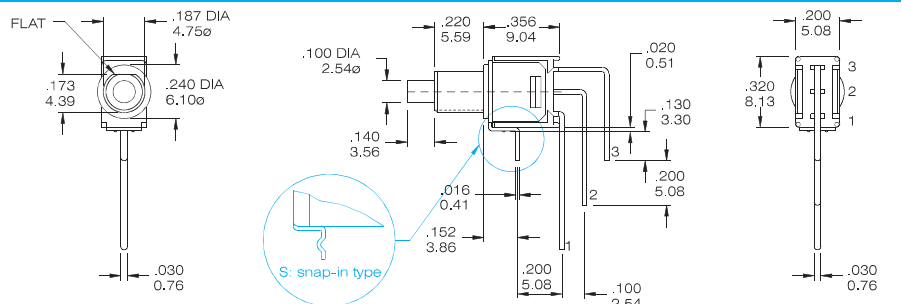
Model No.	Switching position	
TS-22A	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TS-22A- UQ / TS-22A-UQ-S****SPDT**

Model No.	Switching position	
TS-22B	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TS-22B- UQ / TS-22B-UQ-S**

The dimensions in the catalogue and website are for reference only, not suitable for formal acknowledge.



TS40-P

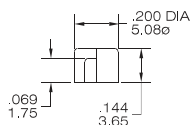
Sub-Miniature Push button Switches



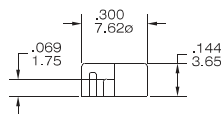
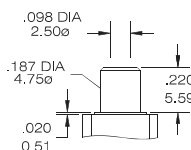
Cap and Actuator Option

Cap color Option

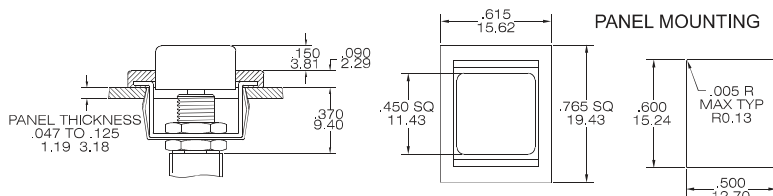
CV



CV1

Plunger:
FP flush type

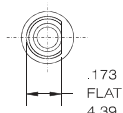
F22A

CAP & ACTUATOR
OPTIONS

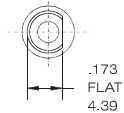
1	White
2	Black(Std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
9	Gray

Bushing Option

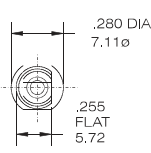
S



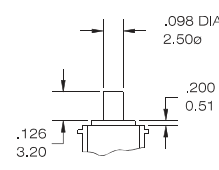
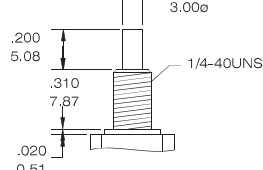
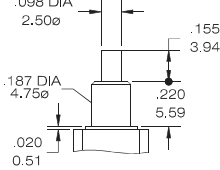
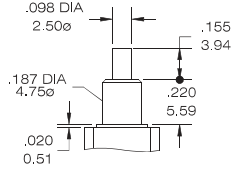
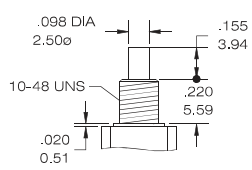
U



T

V : Thd.
V1 : Non Thd.

S9



TERMINAL OPTION (ONLY FOR THE TS-21 / TS-22)

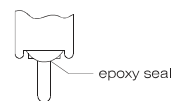
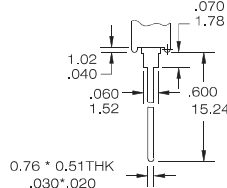
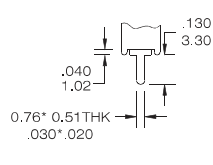
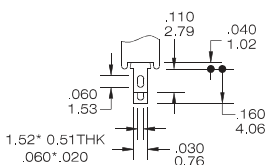
Terminal Seal Option

B Solder Lug(STD)

C PRINTED CIRCUIT

D Wire Wrap

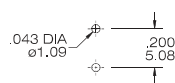
-E Terminal Seal



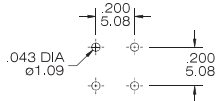
P.C.B MOUNTING DIMENSION

PANEL MOUNTING DIMENSION

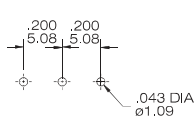
TS-21 (PC terminal)



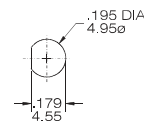
TS-21A



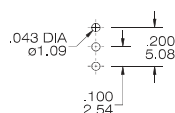
TS-21B



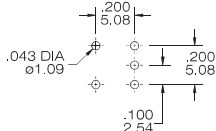
10-48 BUSHING



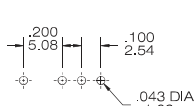
TS-22 (PC terminal)



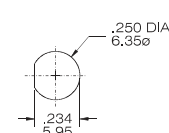
TS-22A



TS-22B



1/4 IN. BUSHING



CONTACT MATERIAL OPTIONS

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	1A @ 120V AC or 28 V DC
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 1A @ 120V AC or 28 V DC
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

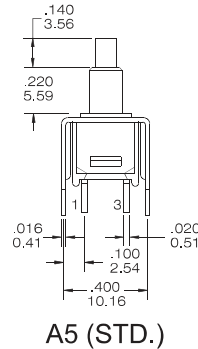
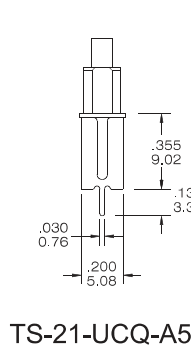
VERTICAL SUPPORT BRACKET OPTION

Only for the TS21/TS22 . If you need the vertical support bracket , Choose the terminal option in "C" code

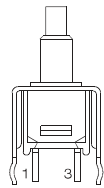
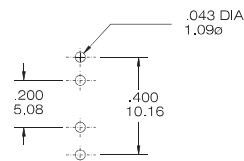
A5/ A5S



SPST



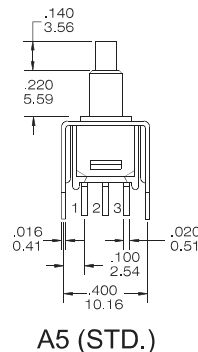
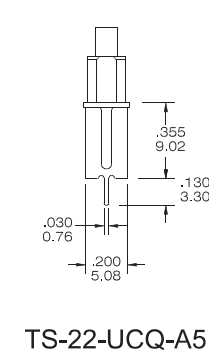
P.C. MOUNTING



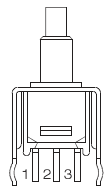
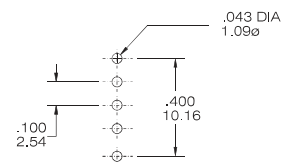
A5/ A5S

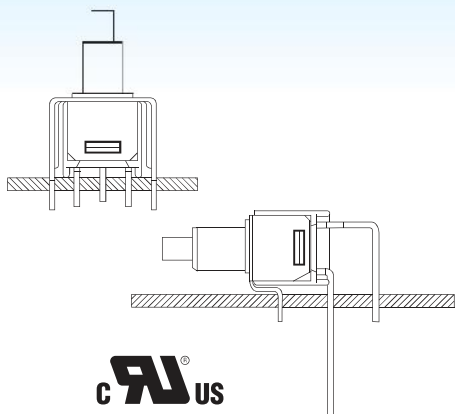


SPDT



P.C. MOUNTING





SPECIFICATIONS

CONTACT RATING:Q: 1.5A @250 VAC or 28 VDC
 ELECTRICAL LIFE: 6,000 make-and-break cycles at full load
 CONTACT RESISTANCE: 20 mΩ max. initial
 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)
 PLUNGER - Nylon
 BUSHING - Copper alloy , nickel plated
 HOUSING - Stainless Steel
 CONTACT AND TERMINAL - Copper alloy , silver plated
 SWITCH SUPPORT - Copper alloy , tin plated

How do you build the switches you need!!

The TL-22 , please see the (A) ;

The TL-22A/TL-22B, please see the (B)

(A) T L - 2 2 - S C Q - E - A 5 -

Switches Function		Bushing		Termination	Epoxy seal		Vertical support Bracket	
TL-22	SPDT on-mom.	S	10-48 thd.(FLAT)	C	(none)	none seal	(none)	(std)straight type
		U	none thd.(FLAT)		E	epoxy seal	A5	snap-in type
		T	none thd.(ROUND)				A5S	
				Contact Material			RoHS code	
				Q silver plated			H = RoHS Compliant	
				R gold plated				
				G gold over silver				
				K gold / tin				

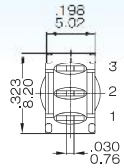
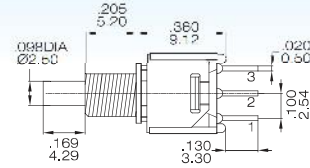
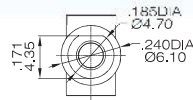
(B) T L - 2 2 A - U Q - E - -

Horizon Right Angle	Vertical Right Angle	Switches Function	Bushing		Contact Material		Epoxy seal	
TL-22A	TL-22B	SPDT on-mom.	S U T	10-48 thd.(FLAT)	Q R G K	silver plated	(none)	none seal
		none thd.(FLAT)		gold plated		E	epoxy seal	
		none thd.(ROUND)		gold over silver				
				gold / tin				
							Support Bracket	
							(none) S	Std. straight type snap-in type
							RoHS code	
							H = RoHS Compliant	

**TS40-P (Lock)****Sub-Miniature Push button Switches****SPDT**

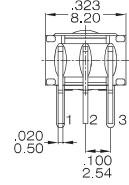
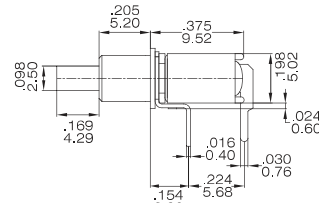
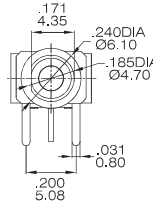
Model No.	Switching position	
TL-22	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TL-22- SCQ****SPDT**

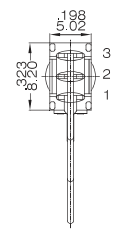
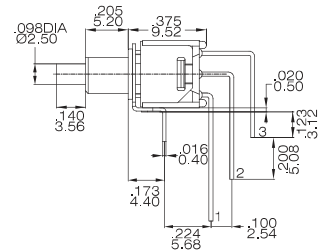
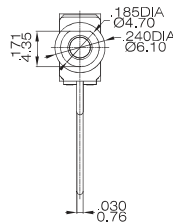
Model No.	Switching position	
TL-22A	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TL-22A-UQ****SPDT**

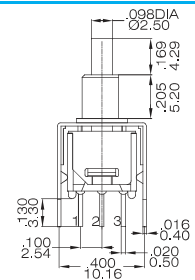
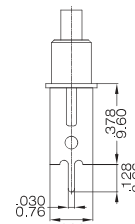
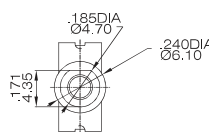
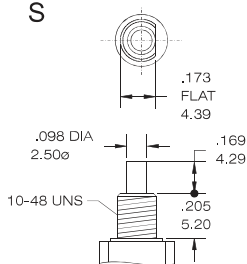
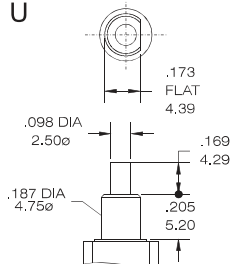
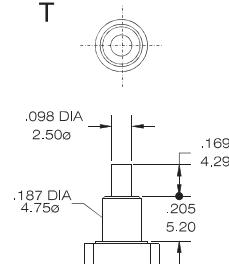
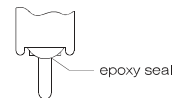
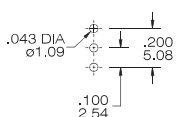
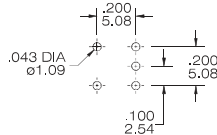
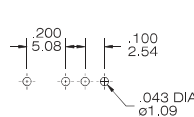
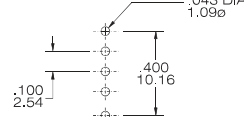
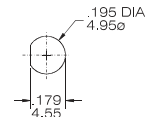
Model No.	Switching position	
TL-22B	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TL-22B- UQ****SPDT**

Model No.	Switching position	
TL-22-A5	On	Mom
Term. Comm.	2-1	2-3

SCHEMATIC

**TL-22-UCQ-A5****Bushing Option****Terminal Seal Option****S****U****T****-E Terminal Seal****P.C.B MOUNTING DIMENSION****PANEL MOUNTING DIMENSION****TL-22 (PC terminal)****TL-22A****TL-22B****TL-22-A5****10-48 BUSHING****CONTACT MATERIAL OPTIONS**

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	1.5 A @ 250VAC or 28 VDC;
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4VA MAX @ 20 VAC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 VAC or DC MAX or 1.5 A @ 250 VAC or 28 VDC;
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

SPECIFICATIONS

CONTACT RESISTANCE: 30mΩ max
 INSULATION RESISTANCE: DC 500V 100MΩ min
 DIELECTRIC STRENGTH: AC 1000V 1 minute
 ELECTRICAL LIFE: 30,000 cycles min
 MECHANICAL LIFE: 50,000 cycles min
 TERMINAL MATERIAL: Copper alloy,
 silver or gold plated

BUTTON COLOR CHART:

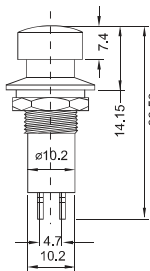
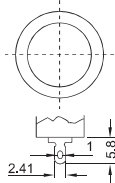
COLOR NO.	COLOR	COLOR NO.	COLOR
1	White	5	Yellow
2	Black	6	Green
3	Red (Std.)	7	Blue

*RoHS Compliant: Please add a code "H" to part number.
 For example: R18-25A-3-H

3A 125V AC



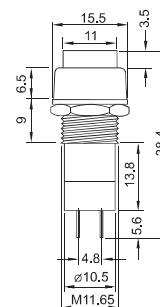
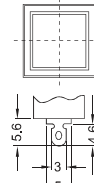
Model No.	TYPE
R18-21A	OFF-ON
R18-21B	OFF-(ON)
R18-21C	ON-(OFF)



3A 125V AC



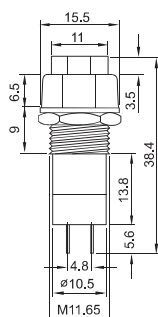
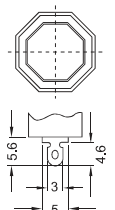
Model No.	TYPE
R18-23A	OFF-ON
R18-23B	OFF-(ON)
R18-23C	ON-(OFF)



3A 125V AC



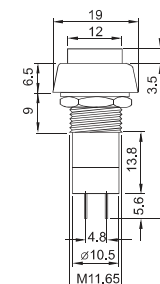
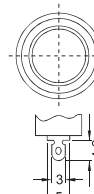
Model No.	TYPE
R18-24A	OFF-ON
R18-24B	OFF-(ON)



3A 125V AC



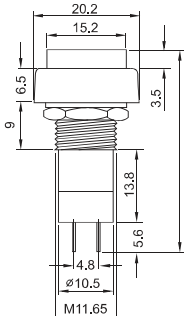
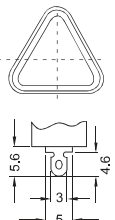
Model No.	TYPE
R18-25A	OFF-ON
R18-25B	OFF-(ON)
R18-25C	ON-(OFF)



3A 125V AC



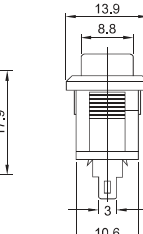
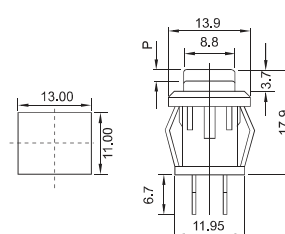
Model No.	TYPE
R18-26A	OFF-ON
R18-26B	OFF-(ON)



1A 125V AC



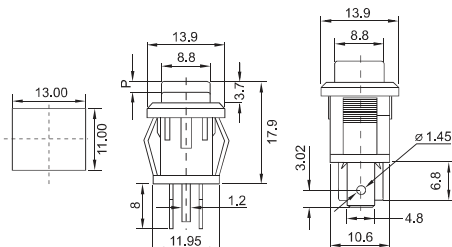
Model No.	TYPE
R18-27A	OFF-(ON)
R18-27B	ON-(OFF)



1A 125V AC



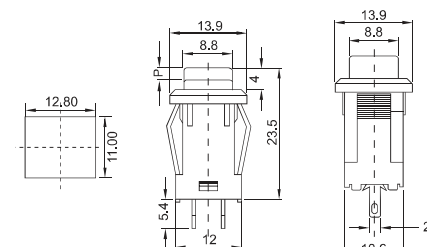
Model No.	TYPE
R18-28A	OFF-(ON)



3A 125V AC



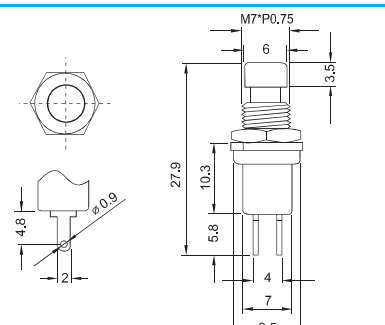
Model No.	TYPE
R18-27C	ON-OFF



1A 125V AC



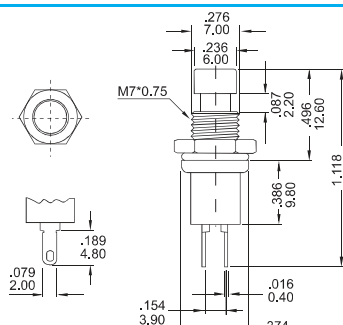
Model No.	TYPE
R18-29A	OFF-(ON)
R18-29C	ON-OFF



1A 125V AC



Model No.	TYPE
R18-29B	ON-(OFF)



SPECIFICATIONS

CONTACT RESISTANCE: DC 5V 1A 30mΩ max
 INSULATION RESISTANCE: DC 500V 100MΩ min
 DIELECTRIC STRENGTH: AC 500V 1 minute
 ELECTRICAL LIFE: 30,000 cycles
 MECHANICAL LIFE: 50,000 cycles
 OPERATION FORCE: 500 ± 150g

SPECIFICATIONS

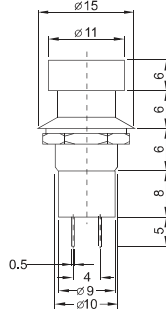
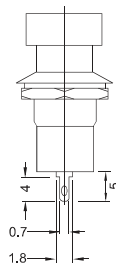
INSULATION RESISTANCE : >100mΩ DC250V
 WITH VOLTAGE : AC250V 1 minute
 CONTACT RESISTANCE : <50mΩ
 SOLDERING TEMPER. : 250°C max. 3 sec
 MECHANICAL LIFE : 100,000 cycles
 ELECTRICAL LIFE : 10,000 cycles
 OPERATION FORCE : 160 ± 80g
 MODELS: 807*-H : Non-Lock
 809*-H : Lock with click sound

*RoHS Compliant: Please add a code "H" to part number. For example: 807-H

S18-21



Model No.	TYPE
S18-21A	OFF-ON
S18-21B	OFF-(ON)

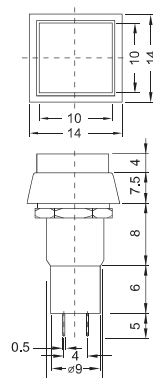
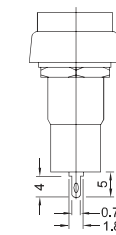


1A 125V AC

S18-23



Model No.	TYPE
S18-23A	OFF-ON
S18-23B	OFF-(ON)

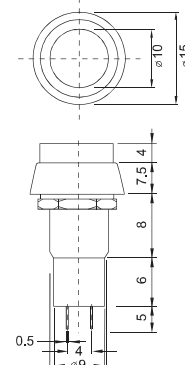
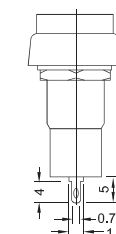


1A 125V AC

S18-25

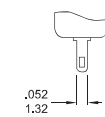
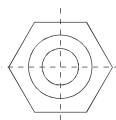
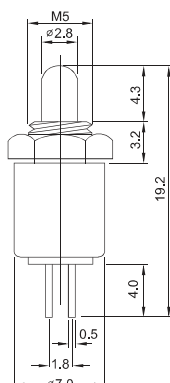


Model No.	TYPE
S18-25A	OFF-ON
S18-25B	OFF-(ON)



1A 125V AC

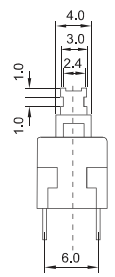
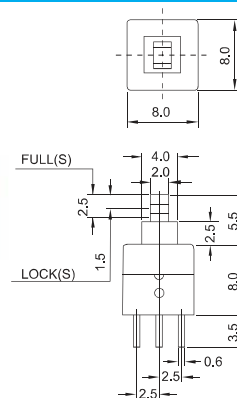
R18-36A



Model No.	TYPE
R18-36A	OFF-(ON)

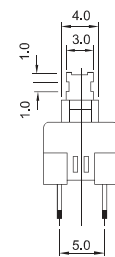
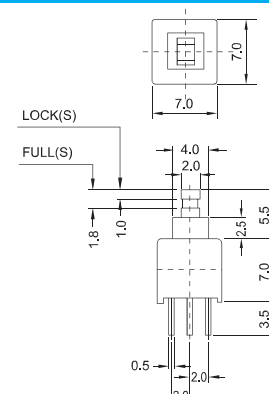
0.5A 125V AC

807 / 809



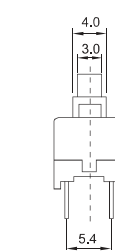
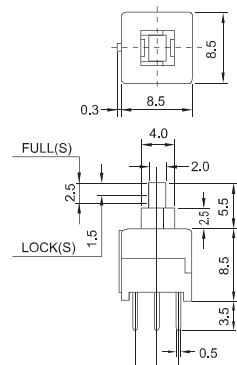
DC 30V 0.1A

807A / 809A



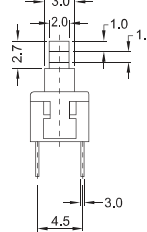
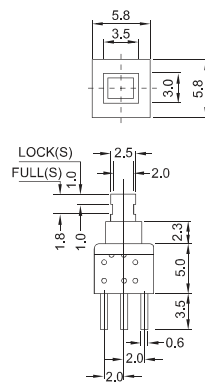
DC 30V 0.1A

807B / 809B



DC 30V 0.3A, DC 16V 0.5A

807C / 809C



DC 30V 0.1A

EPS11



SPECIFICATIONS

CONTACT RATING: 0.2A, 36 VDC

ELECTRICAL LIFE: 50,000 cycles

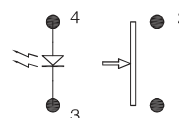
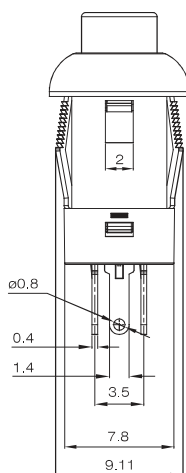
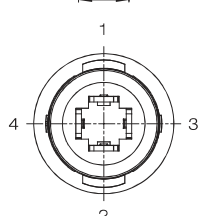
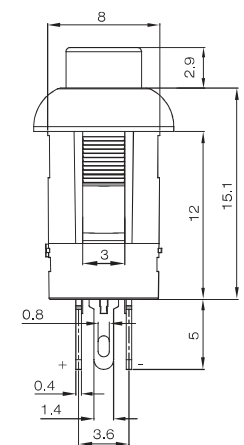
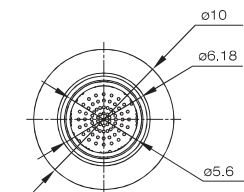
CONTACT RESISTANCE: 50 mΩ max. (initial)

INSULATION RESISTANCE: 100 MΩ min. 500 VDC

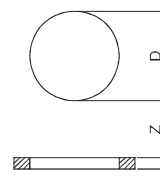
DIELECTRIC STRENGTH: 500 VAC/1 min.

OPERATING TEMPERATURE: 0°C to +85°C

DIMENSIONS



CIRCUIT



CUT-OUT

HOW TO ORDER

EPS11
Model

Terminal type
1 = Solder
2 = P.C.B
3 = SMT

Pole
1 = Single pole
2 = Double pole

Function
0 = Momentary
1 = Self-Lock

Cap
0 = Without cap
1 = With cap

RoHS code:
H = RoHS Compliant

LED color
N = None
R = Red
Y = Yellow
U = Blue
G = Green

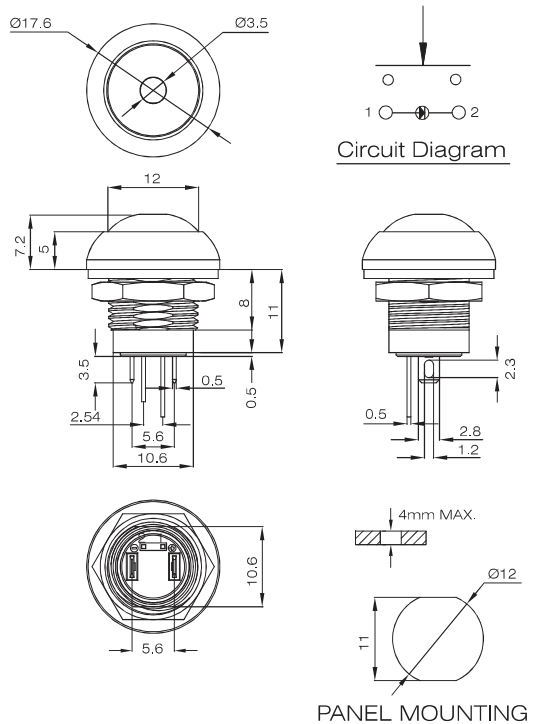
EPS12



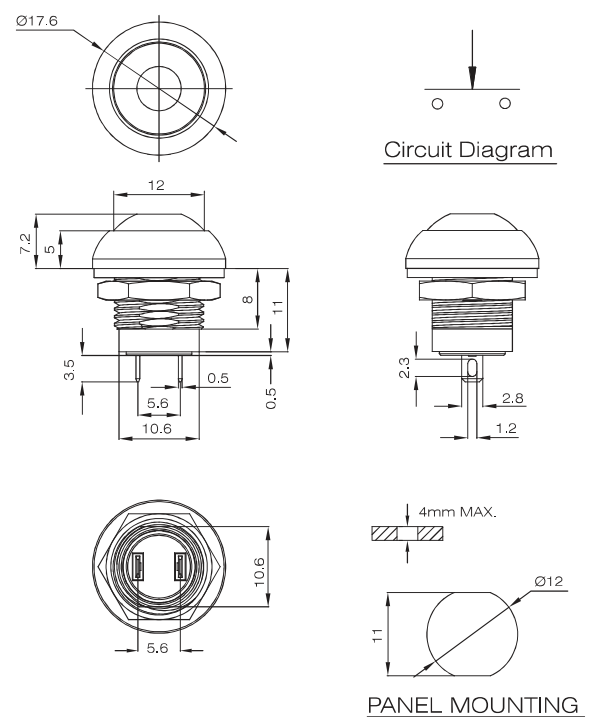
SPECIFICATIONS

CONTACT RATING: 0.2A, 250 VDC
 OPERATING LIFE: 200,000 cycles
 CONTACT RESISTANCE: 50 mΩ max.
 INSULATION RESISTANCE: 100 MΩ min. 100 VDC
 DIELECTRIC STRENGTH: 1000 VAC/1 min.
 OPERATING TEMPERATURE: -20°C to +85°C

DIMENSIONS



With LED



Without LED

HOW TO ORDER

EPS12 - 1 - M - 1 - R - W - N - H

Model

House
 - = Screw
 1 = Snap

Function
 M = Momentary
 A = Alternate

Button Type
 1 =
 2 =
 3 =
 4 =

Cap Color
 R = Red
 G = Green
 B = Black
 U = Blue

RoHS code:
 H = RoHS Compliant

Laser Pattern
 N = None
 1 =
 2 =

LED color
 N = None
 R = Red
 W = White
 G = Green
 Y = Yellow

EPS13



SPECIFICATIONS

CONTACT RATING: 2A, 36 VDC

ELECTRICAL LIFE: 200,000 cycles

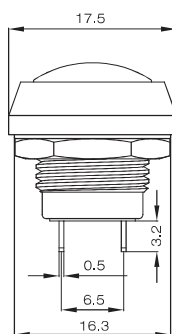
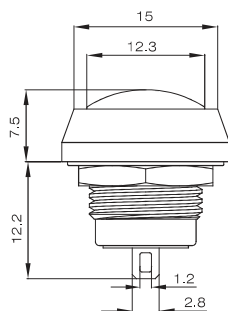
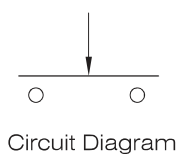
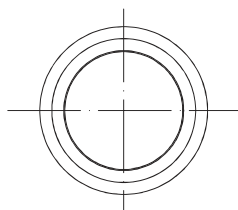
CONTACT RESISTANCE: 50 mΩ max.

INSULATION RESISTANCE: 100 MΩ min. 100 VDC

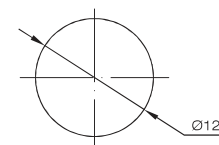
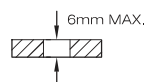
DIELECTRIC STRENGTH: 1000 VAC/1 min.

OPERATING TEMPERATURE: -20°C to +70°C

DIMENSIONS



CUT-OUT



PANEL MOUNTING

HOW TO ORDER

EPS13 - 11M - RG - N - S4 - S - H

Series

Function			
Switch Assemble	Operation type		
11	2P	M	Momentary
13	3P	Z	Lock
		I	Indicator

Button Type			
Button Type	Button Color		
F Flat	S	Natural	
R Round	W	White	
H High	R	Red	
S Square	G	Green	
	U	Blue	
	Y	Yellow	
	B	Black	

Lamp Type	
N	None

RoHS Code	
H	RoHS Compliant

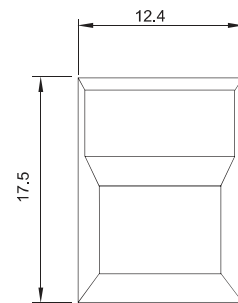
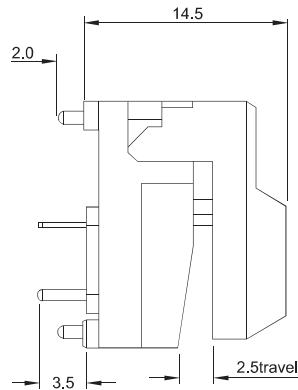
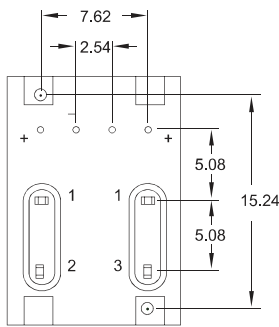
Terminal Shape	
S	Solder Terminal
L	Connection Column

Body Type			
Body Material		Surface Plated	
B	Brass	1	Mirror Chrome plated
S	SUS	2	Mirror Nickel plated
Z	Zn Alloy	3	Mirror Gold plated
A	Al Alloy	4	Velour Chrome plated
		5	CD Pattern
		6	Black oxide

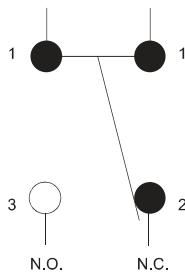


SPECIFICATIONS

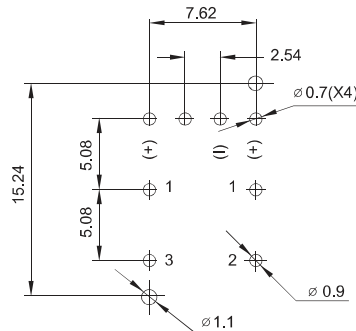
CIRCUIT	: SPDT
CURRENT RATING	: 12mA
VOLTAGE RATING	: 24 VDC
TEST VOLTAGE	: 150V
CONTACT RESISTANCE	: 50 mΩ Max (initial)
INSULATION RESISTANCE	: 100 MΩ min.
OPERATING FORCE	: 170gf ± 50gf
TOTAL TRAVEL	: 2.5mm ± 0.5mm
OPERATING LIFE	: 1, 000,000 cycles min.
SOLDER SPECIFICATION	: 260°C for 3 seconds
FUNCTION	: Momentary
OPERATING TEMPERATURE	: -10°C ~ +60°C



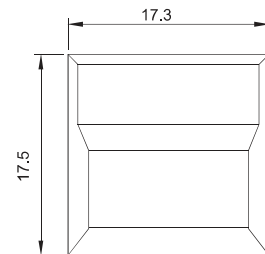
(SP86-A)



SPDT
CONTACT CONFIGURATION



P.C.B. Mounting Holes

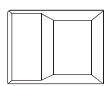
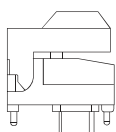


(SP86-B)

HOW TO ORDER

S P 8 6

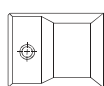
CAP STYLES



A1



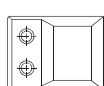
B1



A2



B2



A3



B3

CAP COLORS

- 1 = RED
- 2 = YELLOW
- 3 = GREEN
- 4 = WHITE
- 5 = BLACK
- 6 = ORANGE
- 7 = BLUE
- 9 = GREY
- 10 = TRANSPARENT

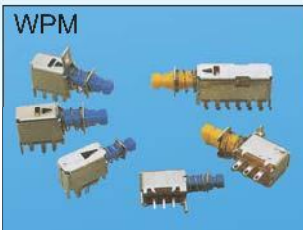
LEFT LED

- LED COLORS
- 0 = WITHOUT LED
- 1 = RED
- 2 = YELLOW
- 3 = GREEN
- 7 = BLUE

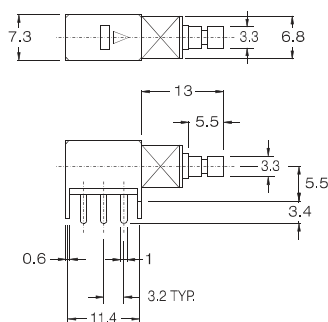
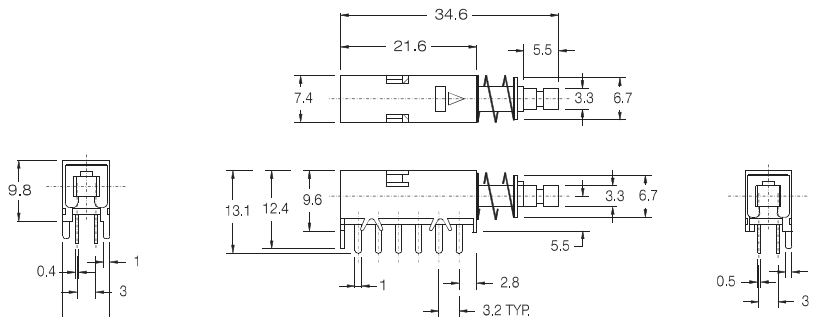
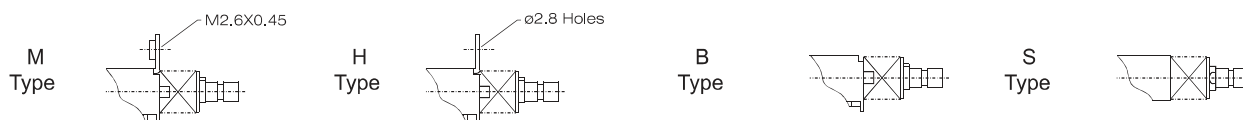
RIGHT LED

RoHS code

H = RoHS Compliant

WPM

SPECIFICATIONS

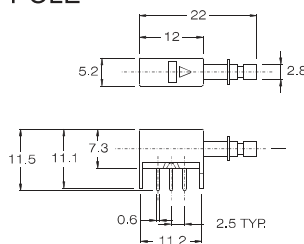
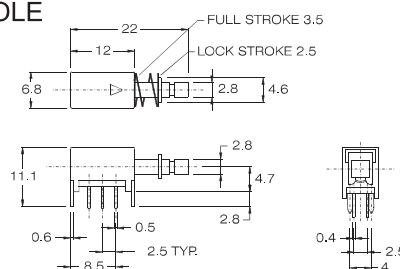
RATING : 30V DC, 0.3A
CONTACT RESISTANCE : 50mΩ max. (WPM), 30mΩ max. (WPMS)
INSULATION RESISTANCE : 500V DC-100MΩ min
WITH STANDARD VOLTAGE: 500V AC-1minute
LIFE CYCLE: 10,000 cycles
OPERATING TEMPERATURE RANG: -20°C~+70°C

POLE
2 POLE

4 POLE

FRAME TYPE

TERMINAL TYPE

Terminal for lead wiring	Terminal for printed circuit	Shaft end style
W Type 	P Type 	

OPERATION:
L = LOCK
N = NON LOCK

WPMS

POLE
1 POLE

2 POLE

HOW TO ORDER

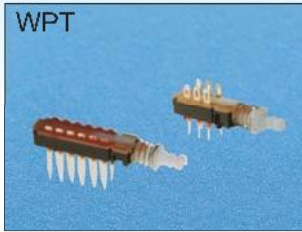
SERIES **FRAME** **POLE** **TERMINAL** **OPERATION** **KNOB** **RoHS code**

H = RoHS Compliant



WP

WPT SERIES Pushbutton Switch



SPECIFICATIONS

RATING : AC 0.2A/125V DC 1A/25V

CONTACT RESISTANCE : 40mΩ max

INSULATION RESISTANCE : 100MΩ min at 500V DC

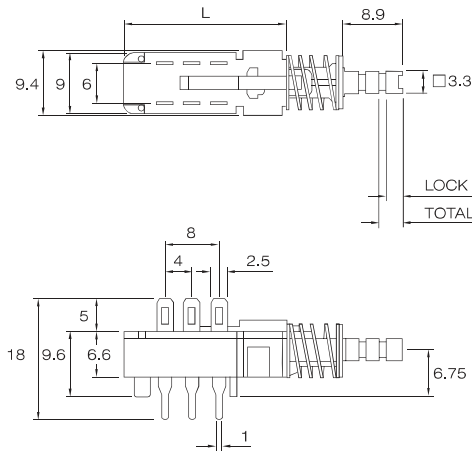
OPERATING FORCE: 350 ± 150gf (2P2T~8P2T)

600 ± 150gf (10P2T, 16P2T)

OPERATING TEMPERATURE RANGE : -20°C ~ +70°C

OPERATING LIFE:10,000 cycles.

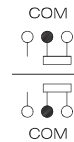
DIMENSION



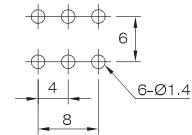
POLE	2	4	6	8	10	16
L(mm)	24.5	36.5	48.5	60.5	72.5	108.5

LOCK TRAVEL 2.5 mm
TOTAL TRAVEL 4 mm

SCHEMATIC

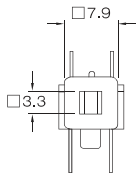


P.C.B. LAYOUT

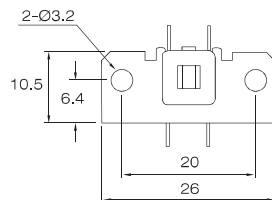


FRAME TYPE

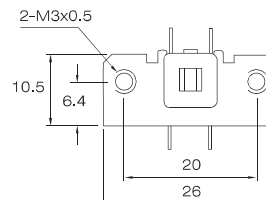
S TYPE



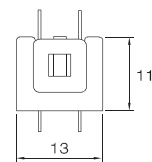
H TYPE



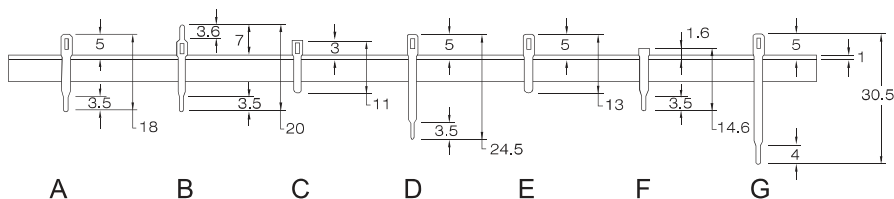
M TYPE



C TYPE



TERMINAL TYPE



OPERATION	L: LOCK	IL: INTERLOCK	TIMING	S: SHORTING	TRAVEL	2: 2.5mm
	N: NONLOCK	R: RESET		N: NONSHORTING		4: 4mm

HOW TO ORDER

SERIES	FRAME	POLE	TERMINAL	OPERATION	TIMING	TRAVEL	KNOB	RoHS code

H = RoHS Compliant



SPECIFICATIONS

CONTACT RATING: 10A 125/250VAC
6(3)A 125/250VAC

ELECTRICAL LIFE: 10,000 cycles

CONTACT RESISTANCE: 30 mΩ max. (initial)

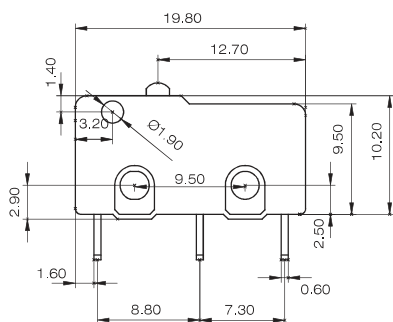
INSULATION RESISTANCE: 100 MΩ min.

DIELECTRIC STRENGTH: 1,000 VAC

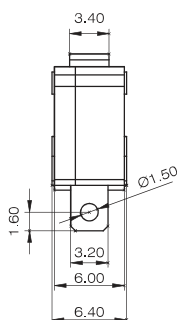
OPERATING TEMPERATURE: -40°C to +85°C



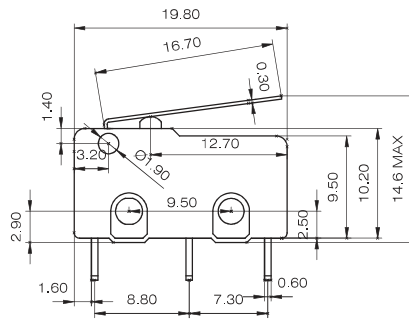
DIMENSIONS



MS1-D*T1-B1



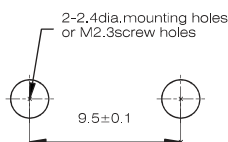
MS1-D*T1-B2



MS1-D*T1-B3

Mounting hole dimensions

Contact configuration



HOW TO ORDER

MS1 - ☐ ☐ ☐ ☐ - ☐ ☐ - ☐

Micro switch

1) circuit arrangement

D : SPDT

O : SPST(NO : normal open)

C : SPST(NC : normal close)

2) Ratings Level

A : 0.1A 125/250V AC

B : 1A 125/250V AC

C : 3A 125/250V AC

D : 6A 125/250V AC

6(2)A 125/250V AC

E : 10A 125/250V AC

6(3)A 125/250V AC

3) Temperature Level

T1 : 85°C

RoHS Code

H = RoHS compliant

5) Actuator type

1 : Push-button

2 : Lever

3 : Lever

4 : Lever

5 : Lever

4) Terminal type

B : Solder terminal

C : PCB terminal


SPECIFICATIONS

CONTACT RATING: 20A 125/250VAC
16(4)A 125/250VAC

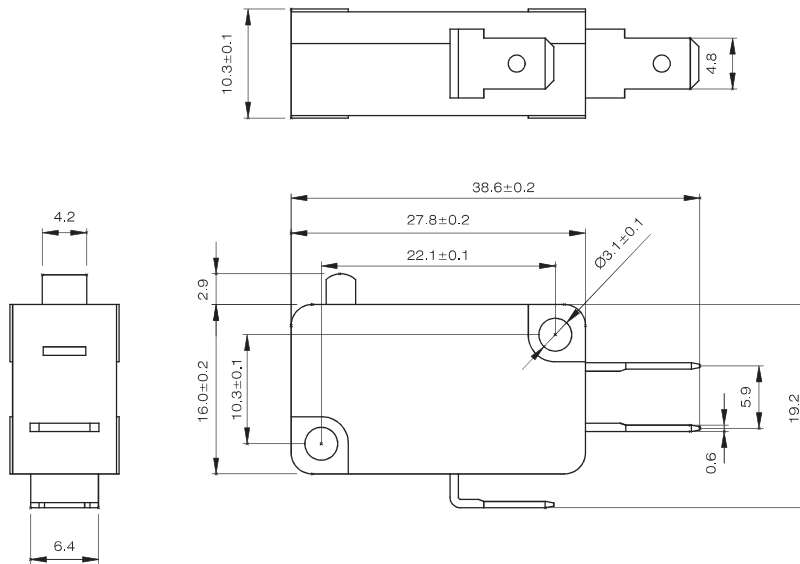
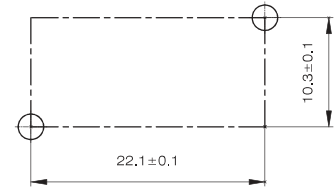
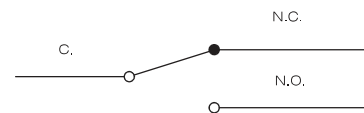
ELECTRICAL LIFE: 10,000 cycles

CONTACT RESISTANCE: 30 mΩ max. (initial)

INSULATION RESISTANCE: 100 MΩ min.

DIELECTRIC STRENGTH: 1,000 VAC

OPERATING TEMPERATURE: -40°C to +85°C


DIMENSIONS

Mounting hole dimensions

Contact configuration

HOW TO ORDER
