

# Toggle Switches

## FX Series Toggle Type

### Common Specifications

#### Ratings

Voltage	Ratings	Load	Remarks
AC125V	6A	Resistive	Resistive load is the load that contains only resistive element and its Power Factor (PF) is 1.
AC250V			
DC30V	3A		

#### Main Specifications

Contact Resistance	Max. 10 mΩ (@DC2V 1A)
Dielectric Strength Voltage	AC1,000V 1 minute
Insulating Resistance	Min. 1,000MΩ (@DC500V)
Electrical Life	5,000~50,000 cycles
Temp. Range for Operation	-20°C~+70°C
Temp. Range for Storage	-20°C~+70°C
Hand Soldering Conditions	350 +/- 3 degC within 3 second

\* The value differs according to the conditions. Inquire us for the details.

Quantity per Package
Excluding 4P 100 pcs
4P 50 pcs

### Product Designation

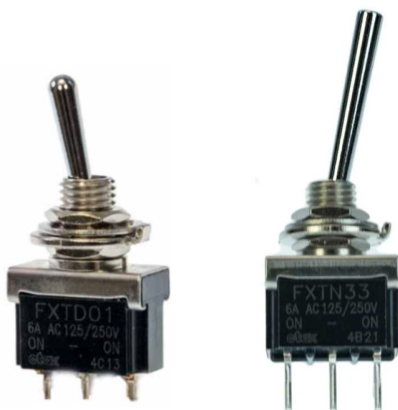
F	X		T	D	0	1
Series Name						
1,2P:none 3P:3 4P:4						
Symbol	Type	SP 3P	2P 4P	Circuits	Symbol	Bat
T	Toggle	D	N	ON - ON	0	Standard Bat
H	PWB Mounting Toggle	E	P	ON OFF ON	1	Large Bat
		F	R	ON - <ON>	2	Short Bat
		G	S	<ON> OFF <ON>	3	Long Bat
		H	T	ON OFF <ON>	4	Flat Lever
			PA	ON ON ON	5	Lock Lever

< > indicates Momentary

\*PWB Mounting Type is available only for Bat: 0 and Terminal: 3.

F X ☐ ☐ ☐ ☐ ☒

Gold Plating Contact for Logic Level Current



The contact material of the FX series uses silver contacts, which exhibit excellent properties with low electrical resistance under normal usage conditions. However, when used with low current (e.g., 0.4 VA AC/DC, 20V MAX), the contact surfaces may be affected by gases such as sulfur dioxide and hydrogen sulfide in the air, leading to the formation of oxide or sulfide films. These films can increase the contact resistance. In circuits other than low-current ones, these films are removed by the arc generated between the contacts, so they do not pose a problem. However, if you plan to use the switch in low-current circuits, we recommend using gold-plated contacts.

## Characteristics

### 1. Versatile Operation Designs

Offers six types of operational shapes to suit panel designs and specific applications.

### 2. Built-in Stopper

Equipped with an internal stopper to prevent lever sinking.

### 3. Independent Springs

Uses independent springs for each circuit to ensure stable and reliable contact.

### 4. High Insulation and Safety

Minimizes the metal parts of the frame to achieve high insulation and enhanced safety.

### 5. Flame-Retardant Resin

Made with UL94 V-0 flame-retardant resin, offering excellent heat resistance, electrical insulation, and mechanical strength.

### 6. Reliable Contact Support Mechanism

Adopts a highly reliable support mechanism for the movable and fixed contacts.

### 7. Standard Terminal Spacing

Features a terminal spacing that matches the standard hole pitch of printed circuit boards (200 mils = 5.08 mm).

### 8. Silver Alloy Contacts

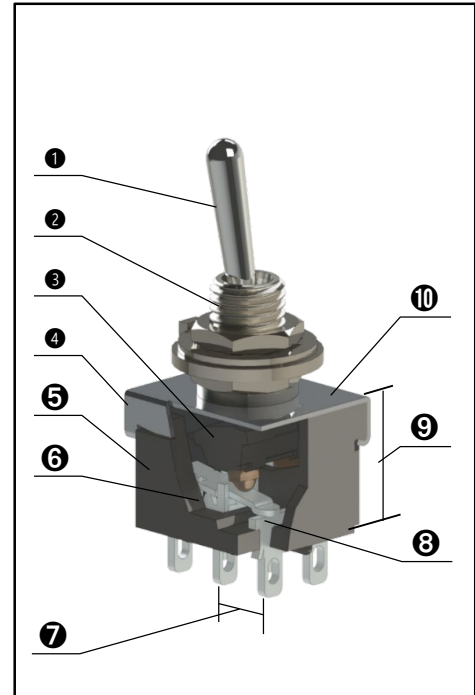
Utilizes silver alloy for the contacts, ensuring high contact reliability and long life.

### 9. Uniform Switch Height

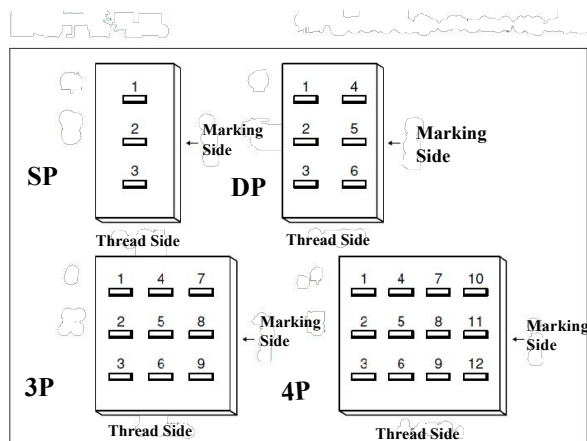
Maintains a uniform height across single-pole to four-pole switches for user convenience.

### 10. Stainless Steel Frame

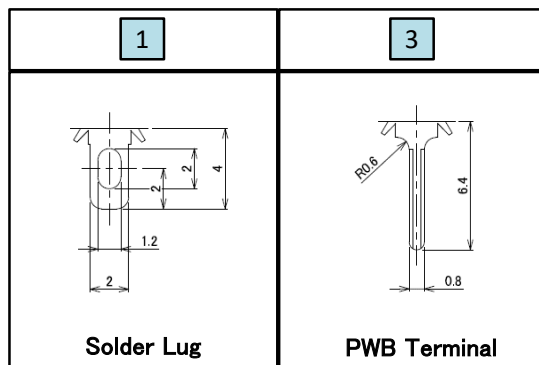
The frame is made of stainless steel for durability.



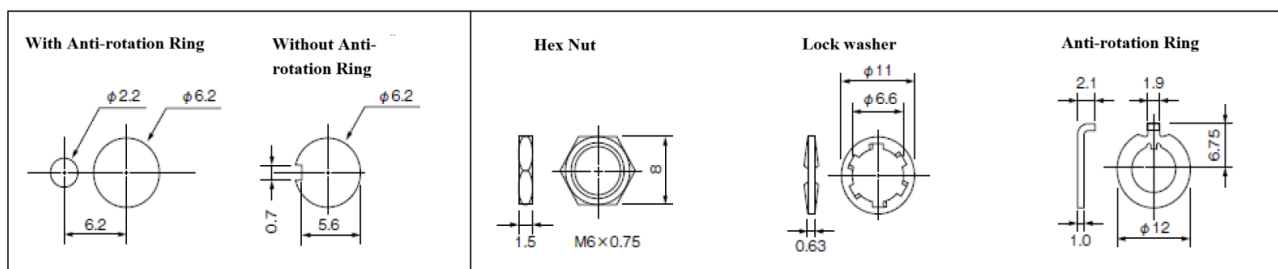
**Terminal Diagrams** The number of each terminal is not displayed on the case.



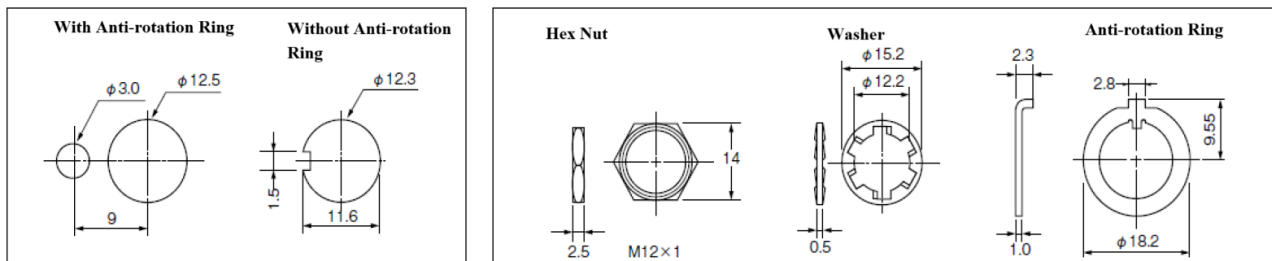
### ■ Terminals



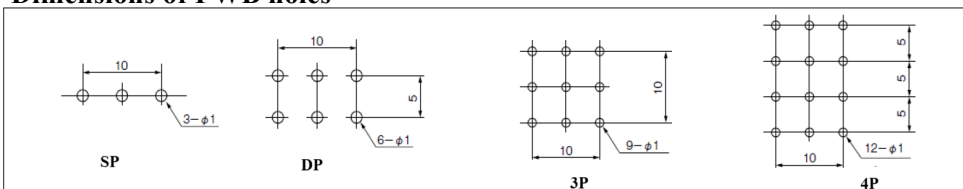
## Mounting Parts for M6 Busing (Excluding Large Toggle)



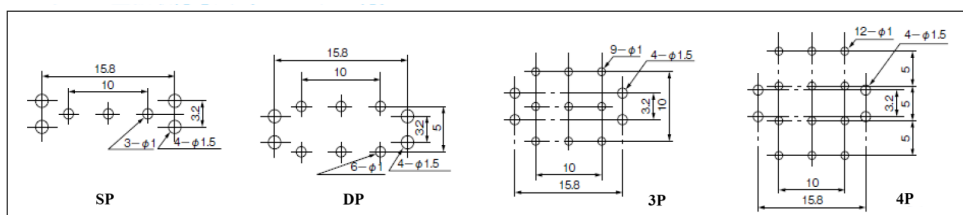
## Mounting Parts for M12 Busing (Large Toggle)



## Dimensions of PWB holes









## Dimensions of PWB holes with Brackets




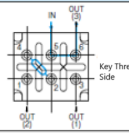
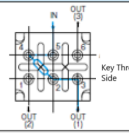
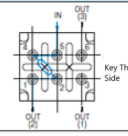



SP	Circuit	Position < > indicates Momentary		
FX□D□□	SPDT	ON 2-3	—	ON 2-1
FX□E□□	“	ON 2-3	OFF	ON 2-1
FX□F□□	“	ON 2-3	—	<ON>2-1
FX□G□□	“	<ON>2-3	OFF	<ON>2-1
FX□H□□	“	ON 2-3	OFF	<ON>2-1




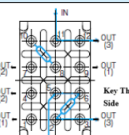
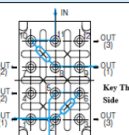
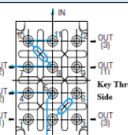

DP	Circuit	Position < > indicates Momentary		
FX□N□□	DPDT	ON 2-3 5-6	—	ON 2-1 5-4
FX□P□□	“	ON 2-3 5-6	OFF	ON 2-1 5-4
FX□R□□	“	ON 2-3 5-6	—	<ON>2-1 5-4
FX□S□□	“	<ON>2-3 5-6	OFF	<ON>2-1 5-4
FX□T□□	“	ON 2-3 5-6	OFF	<ON>2-1 5-4
FX□PA□□	SP3T	ON 2-3 5-6	ON 2-3 4-5	ON 2-1 5-4

3P	Circuit	Position < > indicates Momentary		
				
FX3TD01	3PDT	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 \end{smallmatrix}$	—	ON $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 \end{smallmatrix}$
FX3TE01	"	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 \end{smallmatrix}$	OFF	ON $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 \end{smallmatrix}$
FX3TF01	"	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 \end{smallmatrix}$	—	<ON> $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 \end{smallmatrix}$
FX3TG01	"	<ON> $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 \end{smallmatrix}$	OFF	<ON> $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 \end{smallmatrix}$
FX3TH01	"	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 \end{smallmatrix}$	OFF	<ON> $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 \end{smallmatrix}$

4P	Circuit	Position < > indicates Momentary		
				
FX4TN01	4PDT	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 & 11-12 \end{smallmatrix}$	—	ON $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 & 11-10 \end{smallmatrix}$
FX4TP01	"	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 & 11-12 \end{smallmatrix}$	OFF	ON $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 & 11-10 \end{smallmatrix}$
FX4TR01	"	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 & 11-12 \end{smallmatrix}$	—	<ON> $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 & 11-10 \end{smallmatrix}$
FX4TS01	"	<ON> $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 & 11-12 \end{smallmatrix}$	OFF	<ON> $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 & 11-10 \end{smallmatrix}$
FX4TT01	"	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 & 11-12 \end{smallmatrix}$	OFF	<ON> $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 & 11-10 \end{smallmatrix}$
FX4TPA01	DP3T	ON $\begin{smallmatrix} 2-3 & 8-9 \\ 5-6 & 11-12 \end{smallmatrix}$	ON $\begin{smallmatrix} 1-2 & 8-9 \\ 5-6 & 11-10 \end{smallmatrix}$	ON $\begin{smallmatrix} 2-1 & 8-7 \\ 5-4 & 11-10 \end{smallmatrix}$

Switch Operation			
Wiring Diagram			
Symbol	Switch Properties		
	ON	ON	ON
Connected Terminals	5 - 6	5 - 3	5 - 1

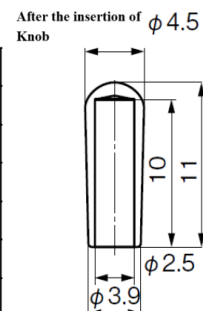
Terminal numbers are not indicated on the case.

Switch Operation			
Wiring Diagram			
Symbol	Switch Properties		
	ON	ON	ON
Connected Terminals	5 - 3 11 - 12	5 - 1 11 - 9	5 - 4 11 - 7

\* The above numbers from 1 through 12 are not indicated on the case.

### Other Parts

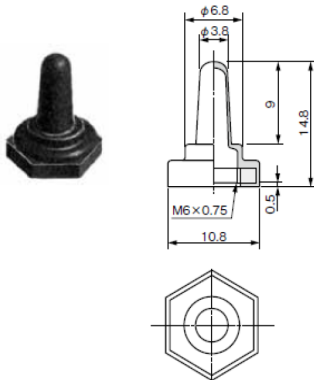
Caps	
Color	Type Number
Yellow	6595-0475
White	6595-0471
Red	6595-0472
Black	6595-0473
Blue	6595-0474
Green	6595-0477



## Wiring Diagram for SP3T and DP3T (ON-ON-ON) Types

Splash-proof Boot and Other Parts

Hexagonal Splash-proof Boot

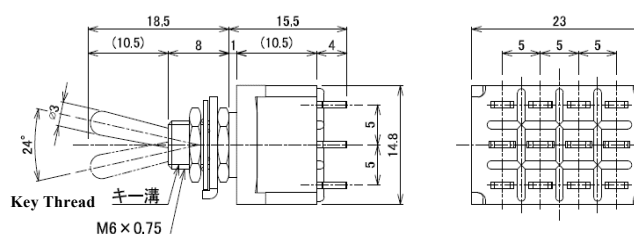
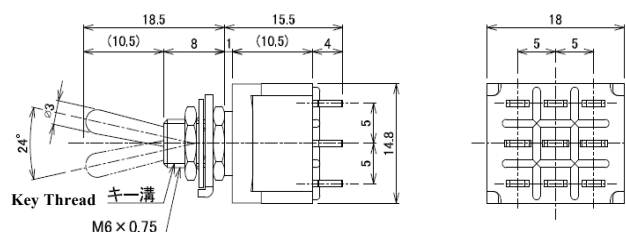
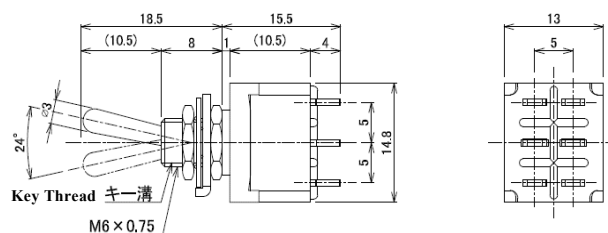
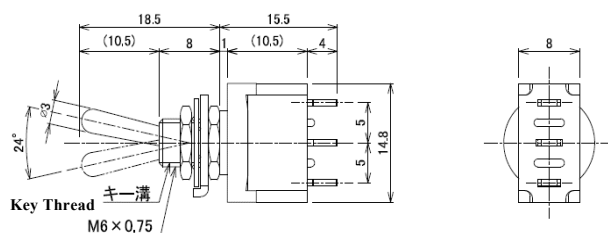


Materials	Color	Type Name
Chloroprene Rubber	Black	6547-0750

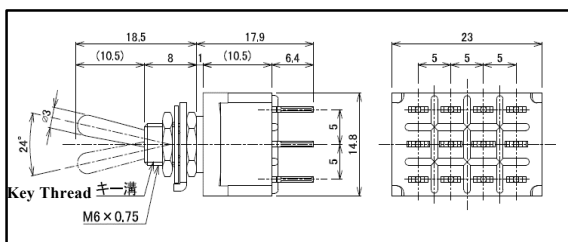
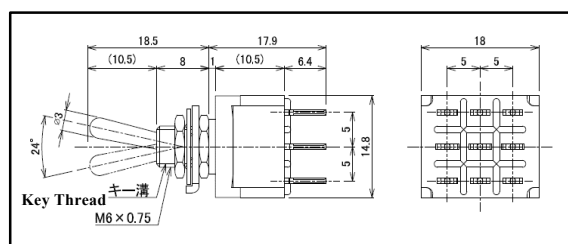
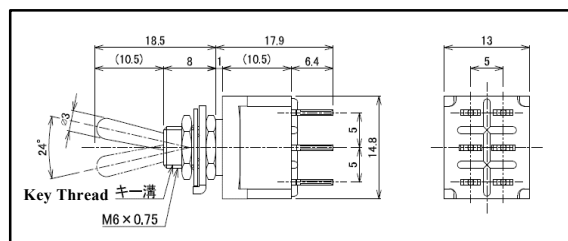
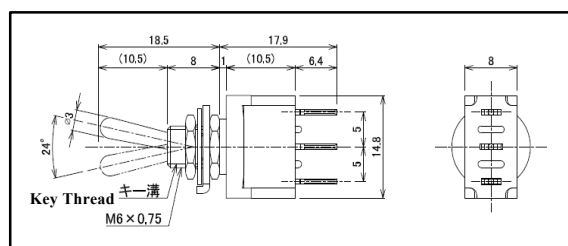


## Standard Bat Solder Lug

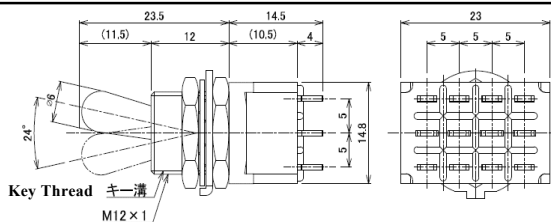
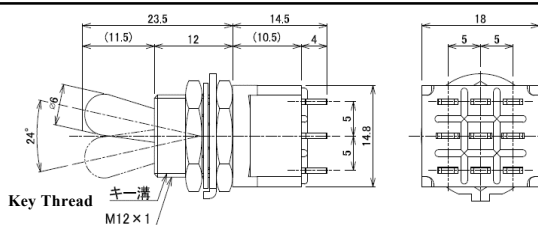
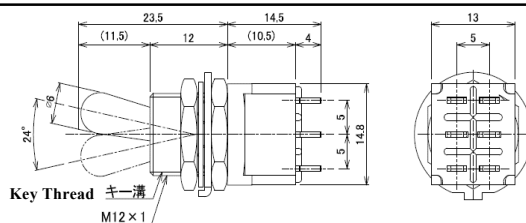
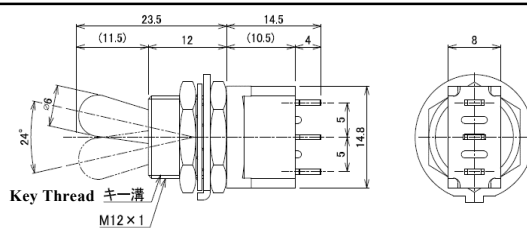
### Key Thread



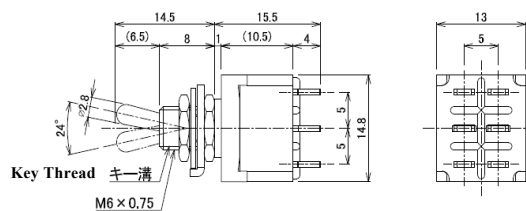
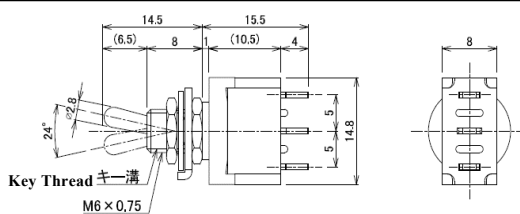
## Standard Bat PWB Straight

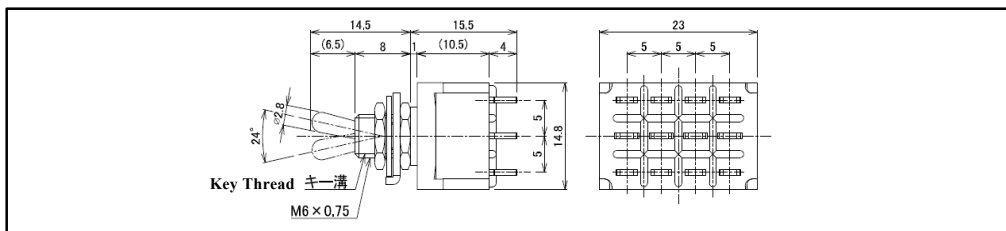
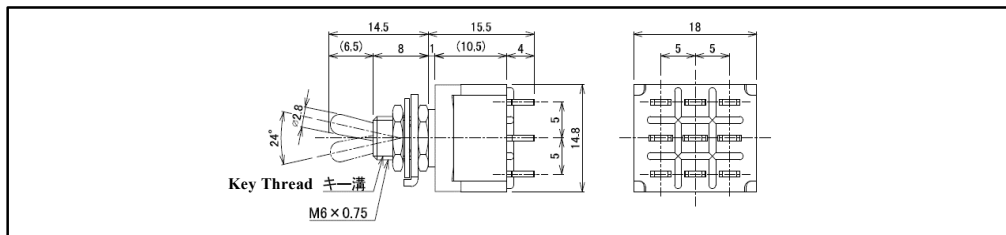


## Large Bat Solder Lug/ PWB Straight

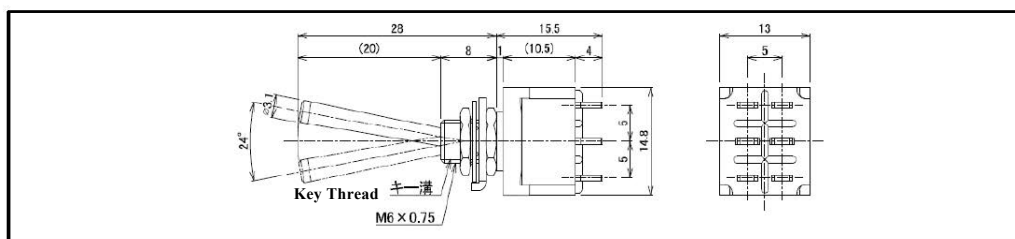
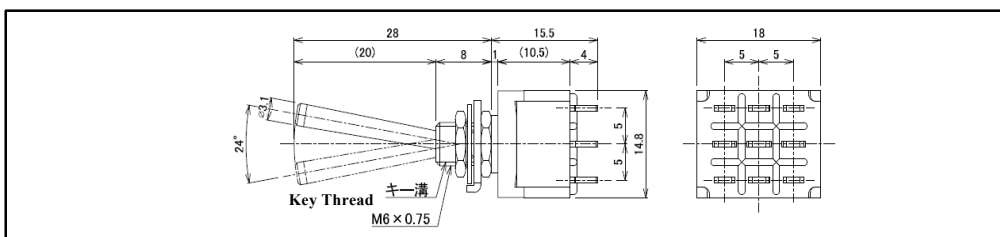
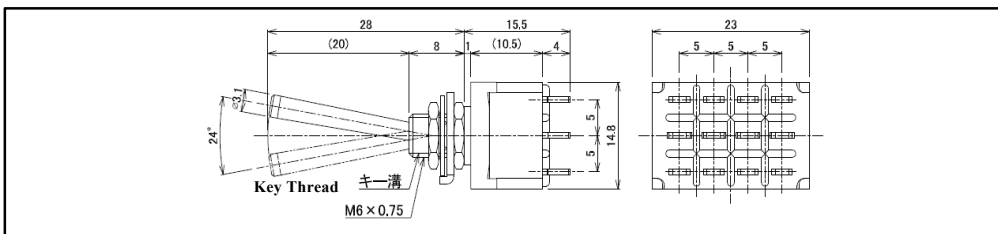
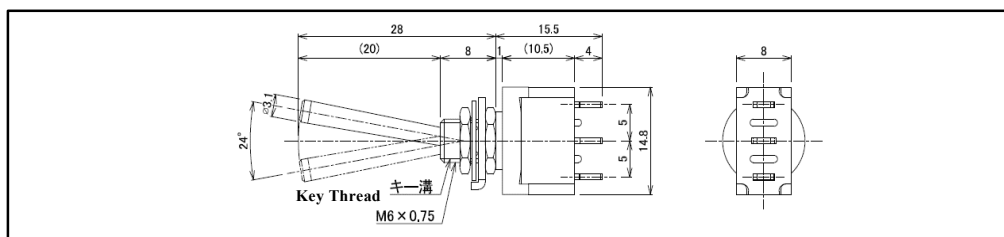


## Short Bat Solder Lug/ PWB Straight

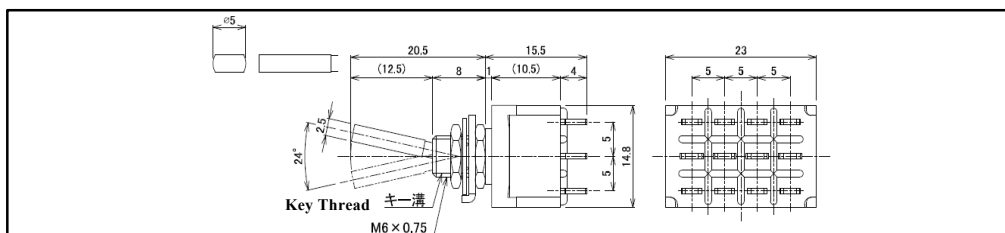
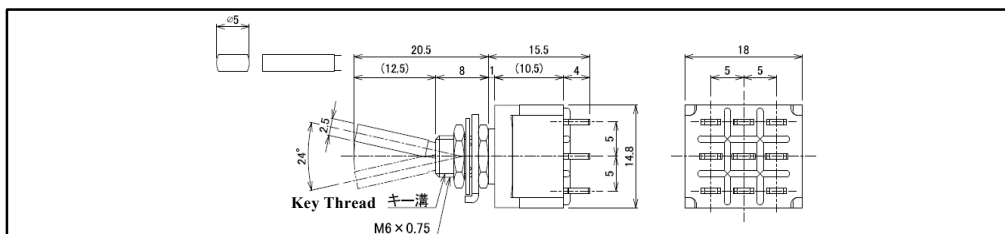
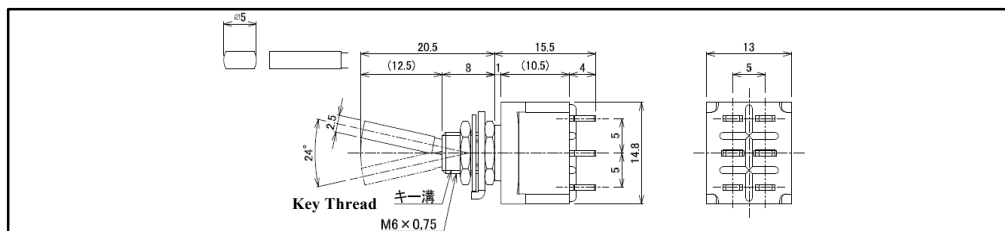
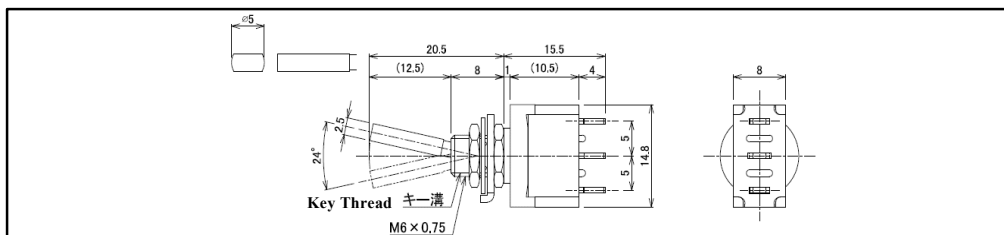




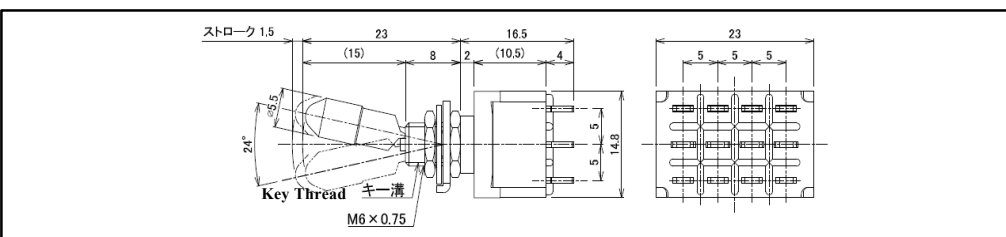
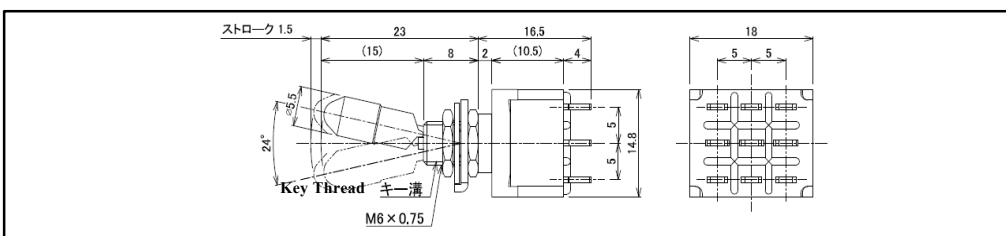
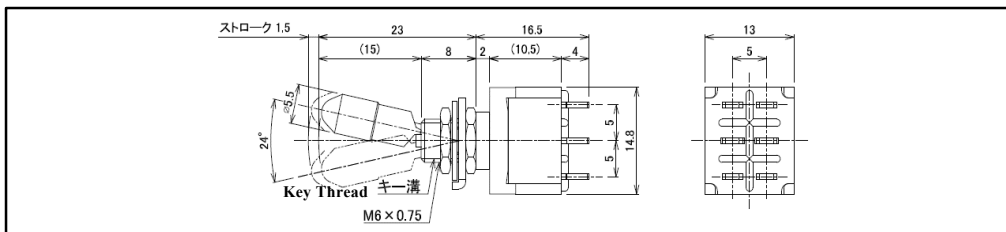
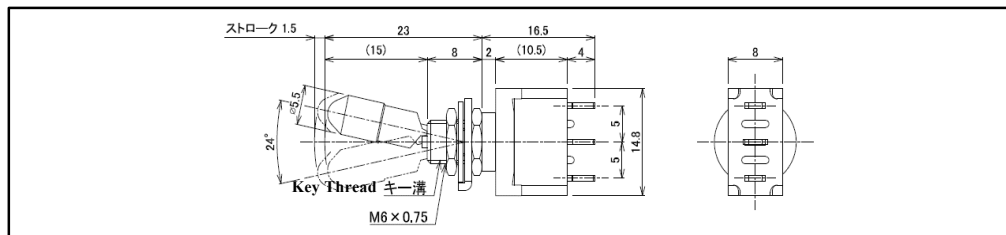
### Long Bat Solder Lug/ PWB Straight



# Flat Lever Solder Lug/ PWB Straight



## Lock Lever Solder Lug/ PWB straight

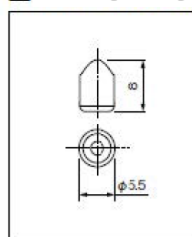


## FX□T□5□ Lock Lever Toggle

### Features

Lock lever-type switches can be operated by pulling the lever. They feature a locking mechanism at the bottom of the lever. This mechanism prevents the switches from being operated accidentally. These switches are most suitable for telecommunication devices, computers, measuring equipment, etc.

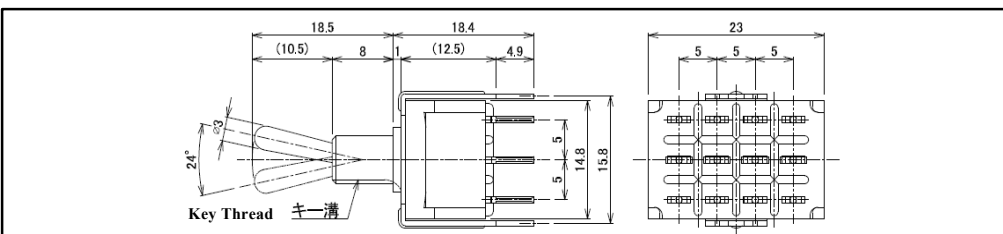
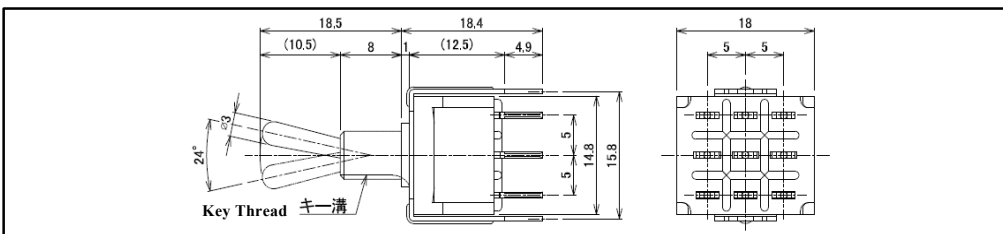
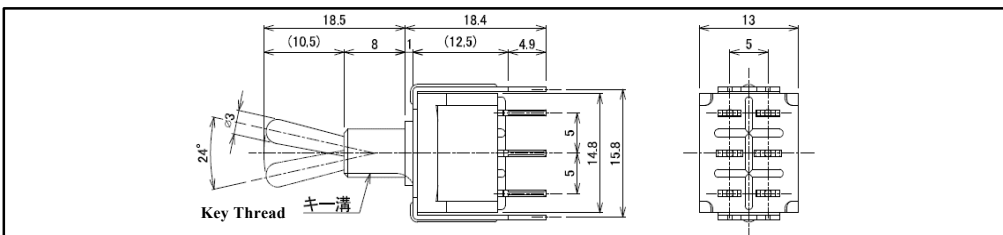
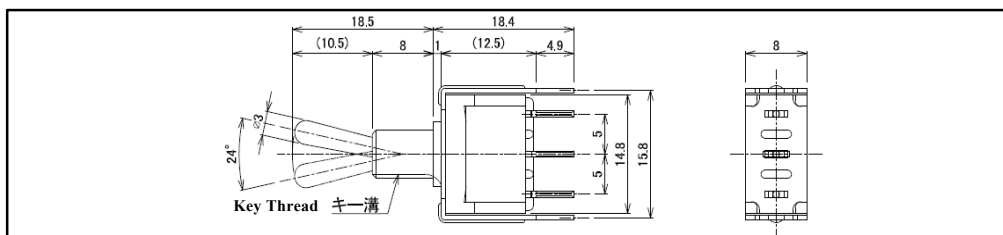
### ■ The Shape of cap



Types	Shapes
D.N	Key Thread
E. P	Key Thread
F. R	Key Thread
G. S	Key Thread
H. T	Key Thread

● The standard type is made of Nickel/ Chrome.

## PWB Mount Toggle PWB Straight



❖ Inquire us about those except above and customized products.

❖ The described products in this data sheet are subject to change without prior notices.

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