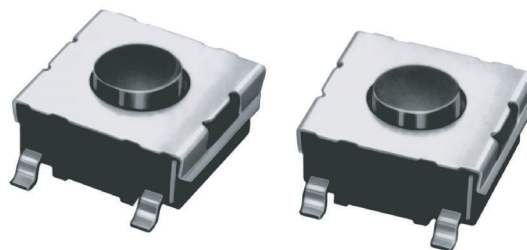





# Tactile Switch (SMD) B3FS

## Surface-mounting Switches Ideal for High-density Mounting

- Tape packing style also available
- Allows reflow soldering
- Incorporates a snap-action contact mechanism that ensures sharp switching operations
- 3 actuator heights for design flexibility
- RoHS Compliant



## Ordering Information

Type	Item			Model	
	Plunger	Height x pitch	Operating force (OF)	Bag (See Note 1.)	Embossed tape (See Note 2.) (qty./reel)
Standard 6 x 6 mm	Flat 	3.1 x 8.0 mm	General-purpose: 100 gf	<b>B3FS-1000</b>	<b>B3FS-1000P (3000)</b>
			High-force: 150 gf	<b>B3FS-1002</b>	<b>B3FS-1002P (3000)</b>
	Flat 	4.3 x 8.0 mm	General-purpose: 100 gf	<b>B3FS-1010</b>	<b>B3FS-1010P (1000)</b>
			High-force: 150 gf	<b>B3FS-1012</b>	<b>B3FS-1012P (1000)</b>
	Projected 	7.3 x 8.0 mm	General-purpose: 100 gf	<b>B3FS-1050</b>	<b>B3FS-1050P (1000)</b>
			High-force: 150 gf	<b>B3FS-1052</b>	<b>B3FS-1052P (1000)</b>

**Note: 1.** Orders must be made in units of 100 pieces.

**2.** Orders must be made in units of 3,000 pieces. For the packing style, refer to *Key Switch Packing* under Precautions section.

**Important Note:** Switches cannot be water-washed.

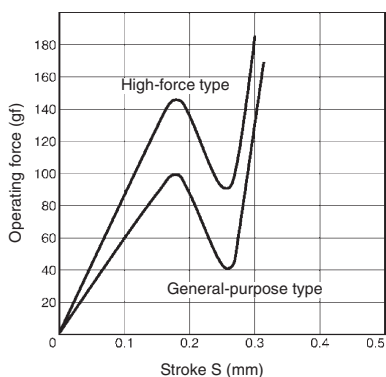
# Specifications

## ■ Characteristics

<b>Switching capacity</b>		50 mA, 24 VDC (resistive load)
<b>Contact form</b>		SPST-NO
<b>Contact material</b>		Silver plating
<b>Contact resistance</b>		100 mΩ max. (initial value) (rated: 1 mA, 5 VDC)
<b>Insulation resistance</b>		100 MΩ min. (at 100 VDC)
<b>Dielectric strength</b>		250 VAC, 50/60 Hz for 1 min.
<b>Bounce time</b>		5 ms max.
<b>Vibration resistance</b>		Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
<b>Shock resistance</b>		Destruction: 1,000 m/s <sup>2</sup> min. {approx. 100G min.}
<b>Life expectancy</b>	<b>General-purpose</b>	1,000,000 operations min.
	<b>High-force type</b>	300,000 operations min.
<b>Ambient temperature</b>	<b>Operating</b>	-25° C to +70° C
<b>Ambient humidity</b>	<b>Operating</b>	35% to 85%
<b>Weight</b>		Approx. 0.2 g

## Engineering Data

### ■ Operating Force vs Stroke (Typical Example)



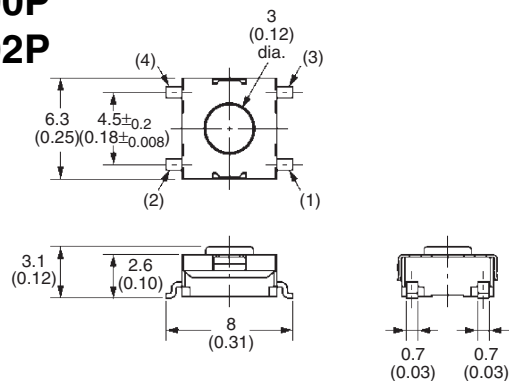
### ■ Operating Characteristics

Characteristics	B3FS-1000 series	
	General-purpose	High-force
<b>Operating force (OF) max.</b>	100 ± 30 gf	150 ± 50 gf
<b>Releasing force (RF) min.</b>	20 gf	50 gf
<b>Pretravel (PT)</b>	0.25 <sup>+0.2</sup> <sub>-0.1</sub> mm	

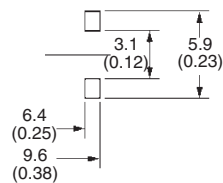
# Dimensions

Unit: mm (inch)

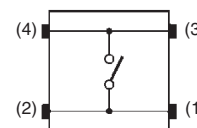
**■ B3FS-1000**  
**B3FS-1002**  
**B3FS-1000P**  
**B3FS-1002P**



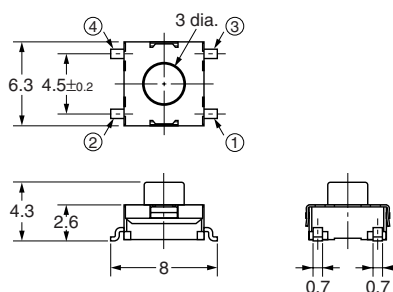
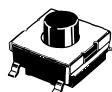
PCB Pad  
(Top View)  
(One-side PCB t= 1.6)



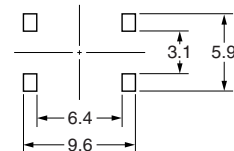
Terminal Arrangement/  
Internal Connection  
(Top View)



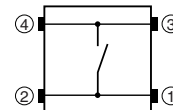
**■ B3FS-1010**  
**B3FS-1012**  
**B3FS-1010P**  
**B3FS-1012P**



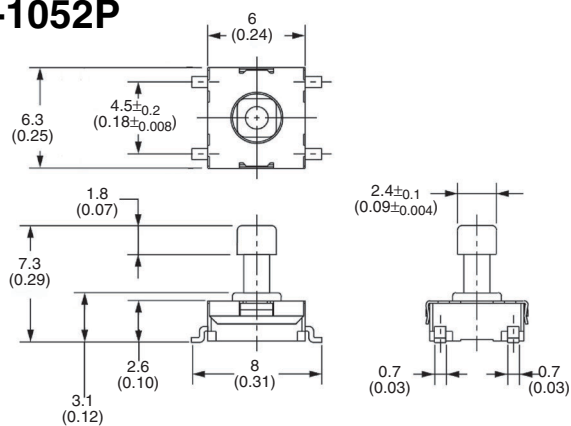
PCB Pad  
(Top View)  
(One-side PCB t= 1.6)



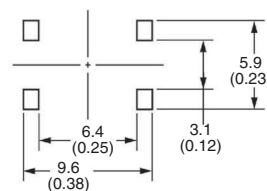
Terminal Arrangement/  
Internal Connection  
(Top View)



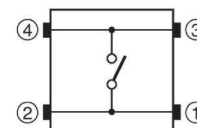
**■ B3FS-1050**  
**B3FS-1052**  
**B3FS-1050P**  
**B3FS-1052P**



PCB Pad  
(Top View)  
(One-side PCB t= 1.6)



Terminal Arrangement/  
Internal Connection  
(Top View)

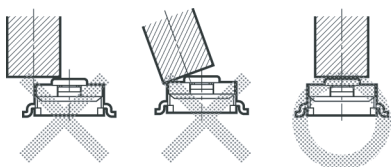


# Precautions

## ■ Operation

Do not repeatedly operate the Switch with high force, apply additional force to the plunger once it has stopped moving, or operate the Switch with excessive force, otherwise the disc spring of the Switch may deform and the Switch may malfunction.

Be sure to set the Switch so that the plunger will be pressed straight. A decrease in the life of the Switch may result if the plunger is pressed off-center or from an acute angle.



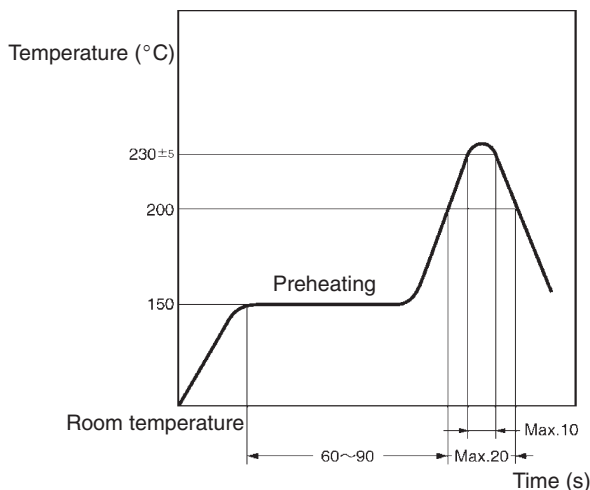
## ■ Soldering

Do not apply flow soldering, otherwise fragments of solder and flux may have a bad influence on the operation of the pushbutton.

Apply reflow soldering according to the optimum heating curve shown below. Reflow soldering equipment may have a high peak value. Be sure to conduct a test before use.

Soldering may be repeated only once at a minimum interval of five minutes if the Switch is not soldered properly.

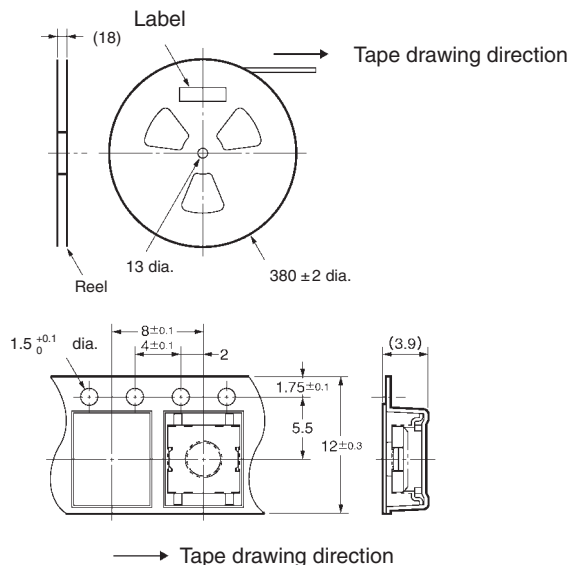
No flux can be wiped or cleaned after soldering the Switch because the cleaning solvent will penetrate into the interior of the Switch together with the flux and dust on the PCB. As a result, the Switch may malfunction.



**Note:** The above curve is given on condition that the thickness of the PCB is 1.6 mm.

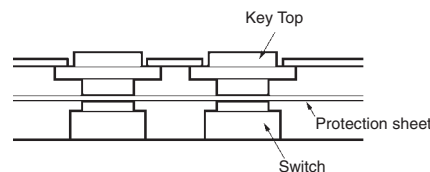
## ■ Tactile Switch Packing

Key Switches are packed on tape as shown below.



<b>Standard</b>	Conform to EIAJ standards
<b>Package</b>	3,000 Switches
<b>Heat resistance</b>	50°C for 24 hours (not be deformed)

The Switch is not of enclosed construction. Be sure to protect the Switch with an appropriate sheet when using the Switch in locations with excessive dust.



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