

Tactile Switch (SMD Type)

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.




Ordering Information

■ Model Number Legend

B3FS-□□□□□
1 2 3 4 5

- | | |
|---|--|
| <p>1. Size 1: 6 mm x 6 mm</p> <p>2. Ground Terminal 0: None</p> <p>3. Height 0: 3.1 mm</p> | <p>4. Operating Force (OF) 0: 100 gf 2: 150 gf</p> <p>5. Shipment Package None: Bag P: Embossed tape</p> |
|---|--|

■ List of Models

| Model | Plunger type | Operating force (OF) | Bag (see note 1) | Embossed tape (see note 2) |
|------------------------------|---|----------------------|------------------|----------------------------|
| 6 x 6 mm B3FS-1000 models | Flat type  | 0.98 N {100 gf} | B3FS-1000 | B3FS-1000P |
| | | 1.47 N {150 gf} | B3FS-1002 | B3FS-1002P |

- Note:** 4. Orders must be made in units of 100 pieces.
 5. Orders must be made in units of 3,000 pieces. For the packing style, refer to *Switch Packing* on page 13.

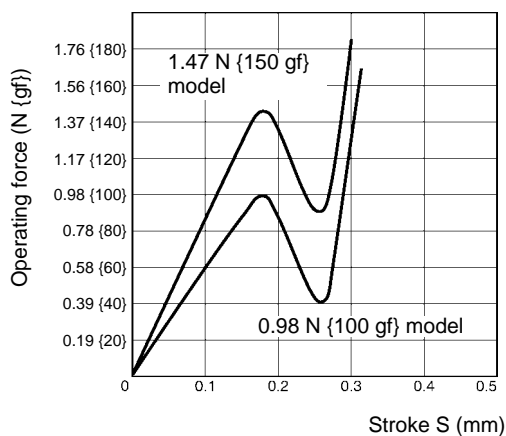
Specifications

■ Ratings/Characteristics

| | |
|------------------------------|---|
| Switching capacity | 50 mA, 24 VDC (resistive load) |
| Contact configuration | SPST-NO |
| Contact material | Silver plating |
| Contact resistance | 100 mΩ max. (initial value) (rated: 1 mA, 5 VDC) |
| Insulation resistance | 100 MΩ min. (at 100 VDC) |
| Dielectric strength | 250 VAC, 50/60 Hz for 1 min |
| Bounce time | 5 ms max. |
| Vibration resistance | Malfunction: 10 to 55 Hz, 1.5-mm double amplitude |
| Shock resistance | Destruction: 1,000 m/s ² {approx. 100G} max. Malfunction: 100 m/s ² {approx. 10G} max. |
| Life expectancy | Standard models: 1,000,000 operations min. High-force models: 300,000 operations min. |
| Ambient temperature | Operating: -40°C to 85°C (with no icing) |
| Ambient humidity | Operating: 35% to 85% |
| Weight | B3F-1000: Approx. 0.2 g |

Engineering Data

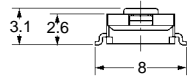
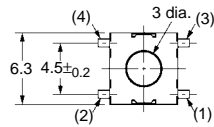
Operating Force vs. Stroke Characteristics



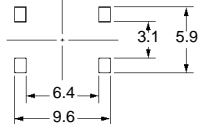
Dimensions

Note: All units are in millimeters unless otherwise indicated. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

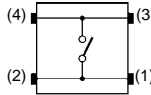
B3FS-1000
B3FS-1002
B3FS-1000P
B3FS-1002P



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



**Terminal Arrangement/
 Internal Connection**
 (Top View)



Operating Characteristics

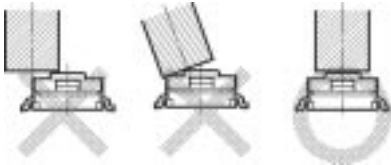
| Item | B3FS-1□□0 | B3FS-1□□2 |
|----------------------|---|----------------------------|
| Operating force (OF) | 0.98±0.29 N {100±30 gf} | 1.47±0.49 N {150±50 gf} |
| Releasing force (RF) | 0.2 N {20 gf} min. | 0.49 N {50 gf} min. |
| Pretravel (PT) | 0.25 ^{+0.2} _{-0.1} mm | |

Precautions

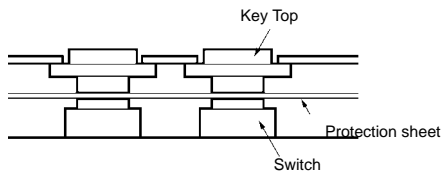
Operation

Do not repeatedly operate the Switch with excessive force. Applying excessive pressure or applying additional force after the plunger has stopped may deform the disc spring of the Switch, resulting in malfunction.

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



The Switches are not sealed and should be protected with a resin sheet as shown below when used in dust-prone environments



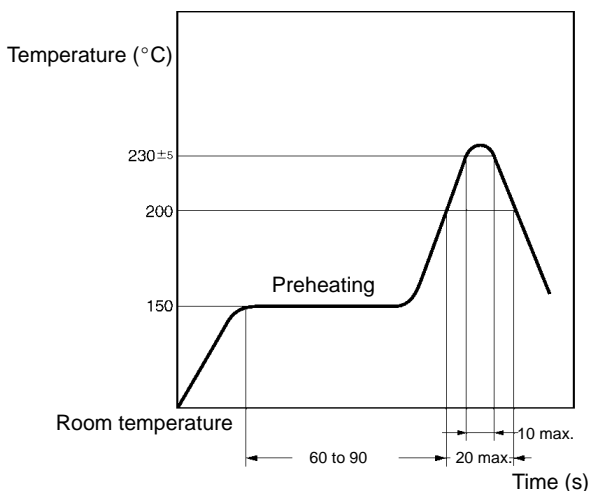
Soldering

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.

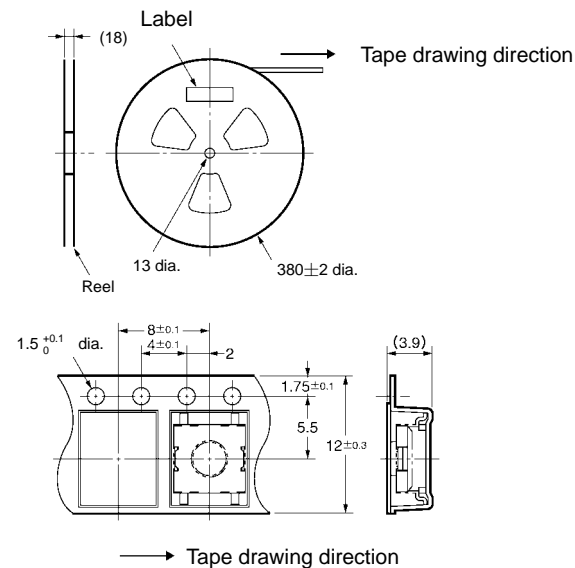
The flux should not be removed or rinsed off after soldering. Doing so may cause flux or dust on PCBs to get inside the Switch, resulting in malfunction.



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

Switch Packing

Switches are packed on tape as shown below.



| | |
|------------------------|-------------------------------------|
| Package | 3,000 Switches |
| Heat resistance | 50°C for 24 hours (not be deformed) |

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.