

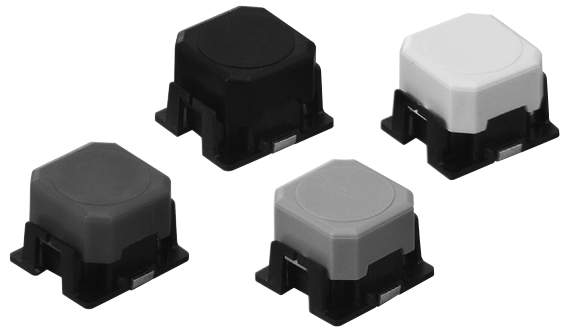
## Long-stroke Tactile Switch (SMT)

## B3AL

### Long-stroke Tactile Switches with High Operating Forces and Long Life.

- High operating force also providing long life.  
(OF = 3.5 N {357 gf}, Life = 1 million operations)
- Long stroke achieved by using a rubber plunger.

RoHS Compliant



## Ordering Information

### ■ Model Number Legend:

B3AL-

1	2	3	4	5	6

#### 1. Switch form (e.g., external shape)

Symbol	Meaning
1	Standard

#### 2. Specifications (e.g., terminal form)

Symbol	Meaning
0	Standard

#### 3. Pushbutton Type (Height and Shape)

Symbol	Meaning
0	Standard

#### 4. Operating Force

Symbol	Meaning
0	1.96 N {200 gf}
1	2.45 N {250 gf}
2	3.00 N {306 gf}
3	3.50 N {357 gf}

#### 5. Packaging

Symbol	Meaning
blank	Bag
P	Embossed tape

#### 6. Special Specifications

### ■ List of Models / Operating Characteristics

Model	B3AL-1000P	B3AL-1001P	B3AL-1002P	B3AL-1003P
<b>Color of button</b>	Red	Green	Black	White (Milky-white)
<b>Operating force (OF)</b>	1.96±0.59 N {200±60 gf}	2.45±0.69 N {250±70 gf}	3.00±0.90 N {306±92 gf}	3.50±1.05 N {357±107 gf}
<b>Releasing force (RF)</b>	0.24 N {24 gf} min.	0.49 N {50 gf} min.	0.60 N {61 gf} min.	0.70 N {71 gf} min.
<b>Pretravel (PT)</b>	1.3 <sup>+0.2</sup> <sub>-0.3</sub> mm			
<b>Minimum order unit</b>	1,400 pcs			

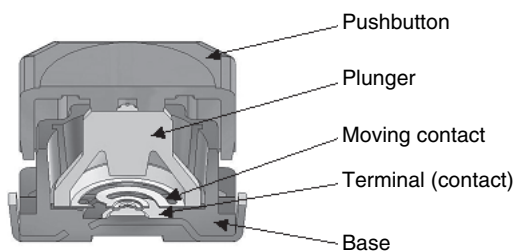
**Note:** Order in multiple of the minimum order unit.

# Specifications

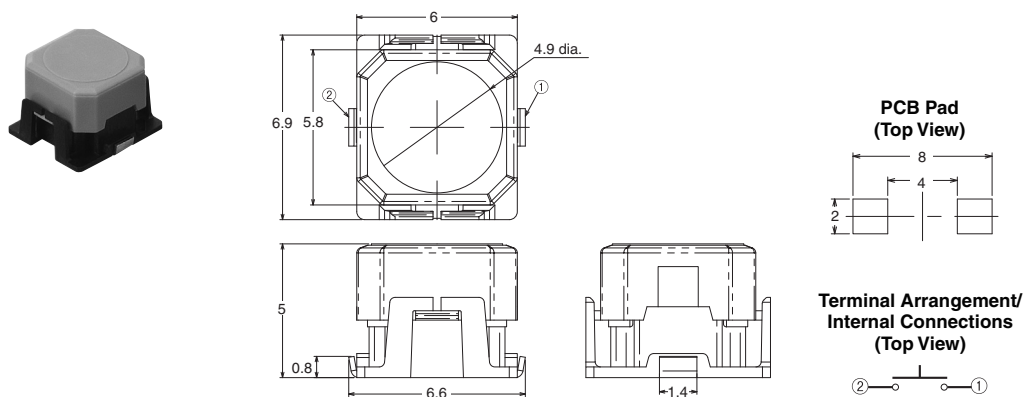
## ■ Ratings / Characteristics

<b>Switching capacity</b>	1 to 50 mA at 5 to 16 VDC (resistive load)
<b>Ambient operating temperature</b>	-40°C to +90°C at 60%RH max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35% to 85% (at 5 to 35 °C)
<b>Contact configuration</b>	SPST-NO
<b>Contact resistance</b>	100 mΩ max.
<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. (The center of the plunger is pressed at a speed of 3 or 4 times per second.)
<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> max. Malfunction: 100 m/s <sup>2</sup> max.
<b>Durability</b>	1,000,000 operations min.
<b>Weight</b>	Approx. 0.18 g

## ■ Model Structure



## Dimensions



- Note:**
1. All units are in millimeters unless otherwise indicated.
  2. No terminal numbers are indicated on the switches.
  3. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

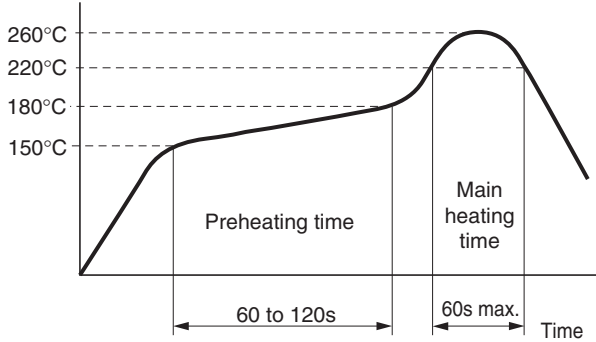
# Precautions

**Note:** Be sure to read the precautions common to all Tactile Switches for correct use.

## ■ Precautions for Correct Use

### soldering

Do not exceed the following terminal temperature profile during soldering in a reflow oven.

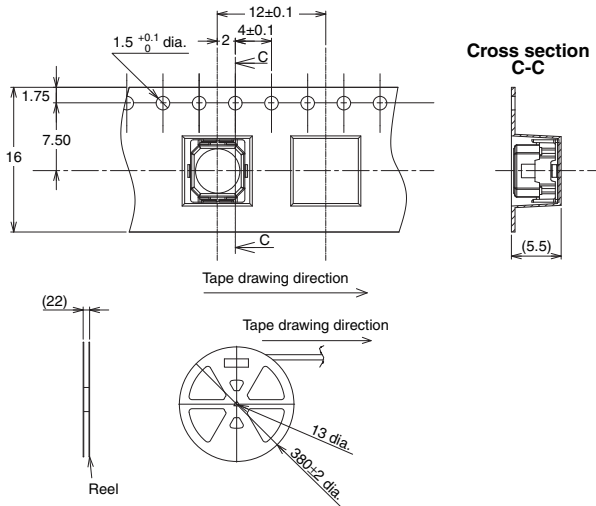


### Washing

The Switches are not sealed, and cannot be washed. Doing so will cause the washing agent, together with flux or dust particles on the PCB, to enter the Switch, resulting in malfunction.

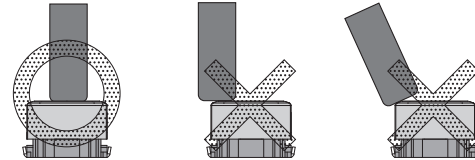
### Packaging Specifications

The packaging specifications for B3AL Switches in embossed taping are given below.



### 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 disk 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. If the plunger is pressed off-center or from an angle it may cause deformation or damage to some parts.
- We recommend using a round bar with a diameter of at least 3 mm as the actuator.



### Dust Countermeasures

Do not mount or use the Switch in areas that are subject to dust. If dust is unavoidable, protect the Switch with a sheet or other countermeasure.

### Water and Drip Resistance

The switch is not water or drip resistant. Do not use it in locations subject to water.

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