

# Tactile Switch B3S

## Surface Mount Tactile Switch for High-Density Packaging

- Sealed construction allows immersion-cleaning IP64 (IEC529) of the PC board with the tactile switches mounted and soldered
- Ground terminal available to protect against static electricity
- Ideal for applications such as audio, office, and communications equipment, measuring instruments, industrial robots, VCRs, TVs, and vending machines
- Tape packaging style also available: contact OMRON for details
- RoHS Compliant



## Ordering Information

Switch height x pitch	Operating force	Part number			
		Without ground terminal		With ground terminal	
		Bags	Embossed Tape	Bags	Embossed Tape
4.3 x 9.0 mm	General-purpose: 160 g	<b>B3S-1000</b>	<b>B3S-1000P</b>	<b>B3S-1100</b>	<b>B3S-1100P</b>
	High-force: 230 g	<b>B3S-1002</b>	<b>B3S-1002P</b>	<b>B3S-1102</b>	<b>B3S-1102P</b>

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

## Specifications

### ■ Characteristics

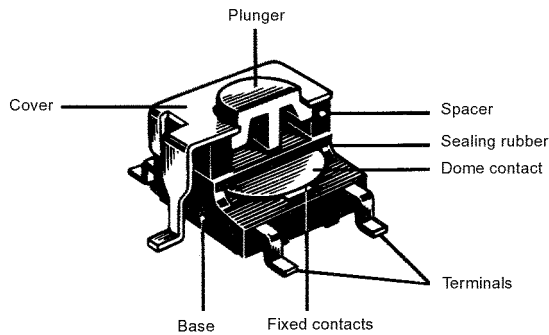
Switching capacity		50 mA 24 VDC (resistive load)
Contact form		SPST-NO
Permissible load		1 mA 5 VDC min. (resistive load)
Contact resistance		100 MΩ max.
Insulation resistance		100 MΩ min. (at 250 VDC)
Dielectric strength		500 VAC, 50/60 Hz for 1 minute
Bounce time		5 ms max.
Vibration	Malfunction durability	10 to 55 Hz, 1.5-mm double amplitude
Shock	Mechanical durability	1,000 m/s <sup>2</sup> (approx. 100 G)
	Malfunction durability	100 m/s <sup>2</sup> (approx. 10 G)
Ambient temperature		-25° to 70°C (with no icing)
Humidity		35% to 85% RH
Service life [Mechanical/electrical]	General-purpose type	500,000 operations min.
	High-force type	300,000 operations min.
Weight		Approx. 0.30 g

**Note:** Data shown are of initial value.

## ■ Operating Characteristics — B3S-1□□□ Series

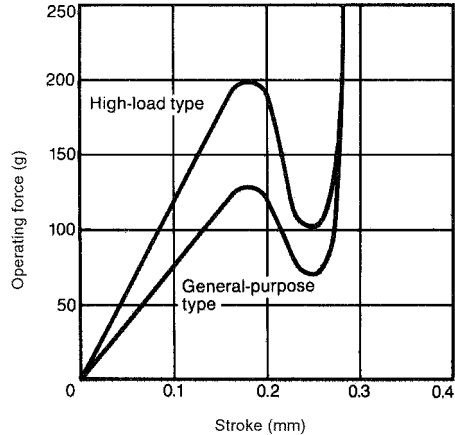
Characteristics	General-purpose	High-force
Operating force (OF) max.	160 g	230 g
Release force (RF) min.	20 g	50 g
Pretravel (PT)	0.25 + <sup>0.2</sup> / <sub>-0.1</sub> mm	0.25 + <sup>0.2</sup> / <sub>-0.1</sub> mm

## ■ Construction



## Engineering Data

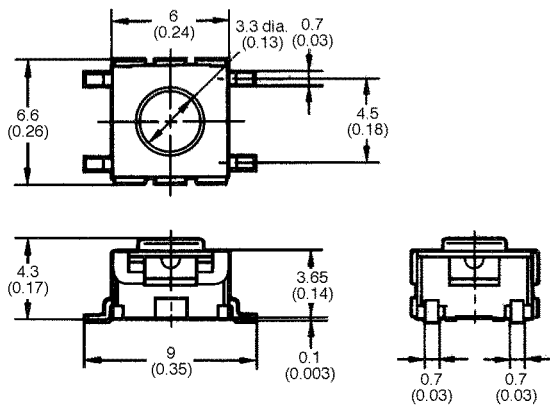
### ■ Operating Force vs. Stroke (Typical Example)



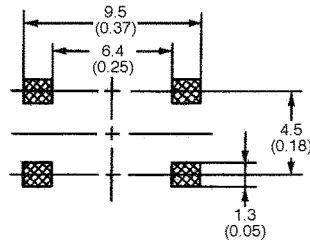
# Dimensions

Unit: mm (inch)

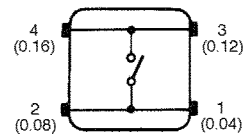
## ■ B3S-1000, B3S-1002



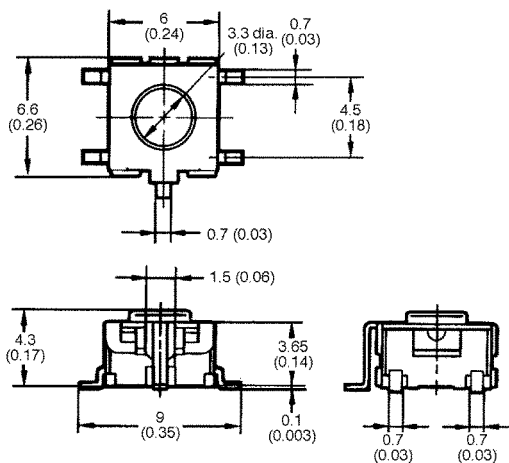
Footprint (top view)



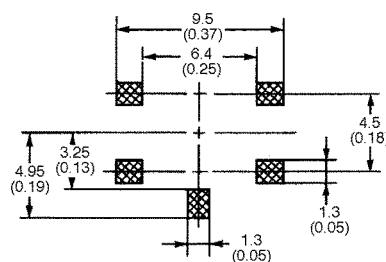
Terminal arrangement/Internal connection (top view)



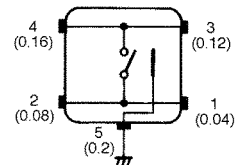
## ■ B3S-1100, B3S-1102



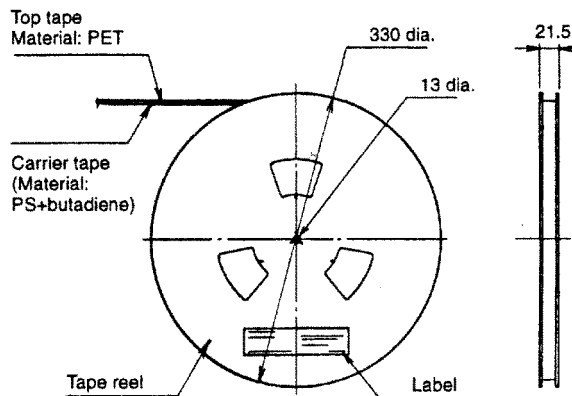
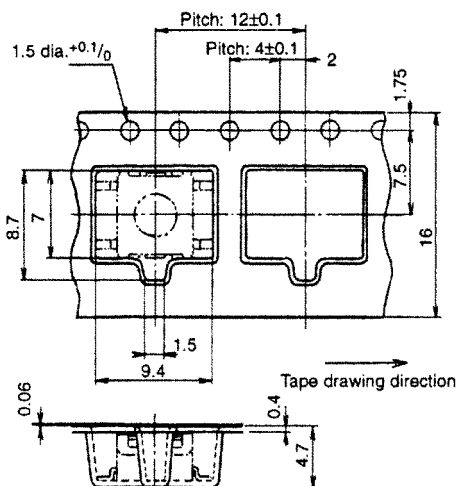
Footprint (top view)



Terminal arrangement/Internal connection (top view)



## ■ Tape Packaging Dimensions



## Hints on Correct Use

### ■ Infrared Reflow Soldering

Secure the thermocouple to the side of each switch terminal with solder having a high melting point. Then set the reflowing furnace so that the peak value of the terminal temperature becomes  $230^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Take care that the peak value does not exceed  $240^{\circ}\text{C}$ . The temperature and the time conditions for the reflow soldering process are as shown in the chart at right.

### ■ Wave Soldering

Dip the bottom of the PC board as follows:

- Solder temperature:  $250^{\circ}\text{C} \pm 5^{\circ}$  max.
- Exposure to molten solder: 5 s max.

Do not dip solder the keyswitches more than twice.

