

## B3W



Features Sealed Construction for Automatic Soldering

- Available in two sizes: 6x6mm (B3W-1) and 12x12mm square (B3W-4)
- Ideal for applications such as audio, office and communications equipment, measuring instruments, industrial robots, VCRs, TVs, and vending machines Stick (magazine) packaging style available
- Sealed for CFC (Freon) cleaning
- Allows the use of radial-taping part insertion machines

Part	Rated Resistive Load - Switch	Actuator types	Contact form	Operating Force	Seal type	Termination Style	Service Life - Electrical (Min. @ Rated Loads)
<b>B3W-1000</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	160g	Semi-sealed	Through-Hole PCB - Straight	1,000,000 ops
<b>B3W-1002</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	230g	Semi-sealed	Through-Hole PCB - Straight	300,000 ops
<b>B3W-1002S</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	230g	Semi-sealed	Through-Hole PCB - Straight	300,000 ops
<b>B3W-1050</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	160g	Semi-sealed	Through-Hole PCB - Straight	1,000,000 ops
<b>B3W-1052</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	230g	Semi-sealed	Through-Hole PCB - Straight	300,000 ops
<b>B3W-1100</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	160g	Semi-sealed	Through-Hole PCB, w/Ground	1,000,000 ops
<b>B3W-1100S</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	160g	Semi-sealed	Through-Hole PCB, w/Ground	1,000,000 ops
<b>B3W-1102</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	230g	Semi-sealed	Through-Hole PCB, w/Ground	300,000 ops
<b>B3W-1150</b>	50mA @ 24 VDC	Top Actuated,	SPST-NO	160g	Semi-sealed	Through-Hole PCB,	1,000,000 ops

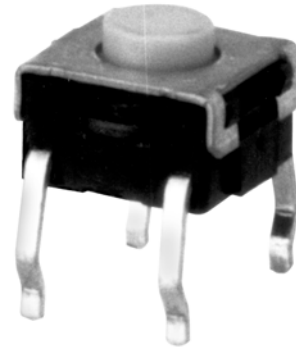
		projected plunger (for B32 Keycap)				w/Ground	
<b>B3W-1152</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	230g	Semi-sealed	Through-Hole PCB, w/Ground	300,000 ops
<b>B3W-4000</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	200g	Semi-sealed	Through-Hole PCB - Straight	3,000,000 ops
<b>B3W-4000S</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	200g	Semi-sealed	Through-Hole PCB - Straight	3,000,000 ops
<b>B3W-4005</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	350g	Semi-sealed	Through-Hole PCB - Straight	1,000,000 ops
<b>B3W-4005S</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	350g	Semi-sealed	Through-Hole PCB - Straight	1,000,000 ops
<b>B3W-4050</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	200g	Semi-sealed	Through-Hole PCB - Straight	3,000,000 ops
<b>B3W-4050S</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	200g	Semi-sealed	Through-Hole PCB - Straight	3,000,000 ops
<b>B3W-4055</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	350g	Semi-sealed	Through-Hole PCB - Straight	1,000,000 ops
<b>B3W-4055S</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	350g	Semi-sealed	Through-Hole PCB - Straight	1,000,000 ops
<b>B3W-4100</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	200g	Semi-sealed	Through-Hole PCB, w/Ground	3,000,000 ops
<b>B3W-4100S</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	200g	Semi-sealed	Through-Hole PCB, w/Ground	3,000,000 ops
<b>B3W-4105</b>	50mA @ 24 VDC	Top Actuated plunger	SPST-NO	350g	Semi-sealed	Through-Hole PCB, w/Ground	1,000,000 ops
<b>B3W-4150</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	200g	Semi-sealed	Through-Hole PCB, w/Ground	3,000,000 ops
<b>B3W-</b>	50mA @	Top	SPST-	200g	Semi-	Through-	3,000,000

<b>4150S</b>	24 VDC	Actuated, projected plunger (for B32 Keycap)	NO		sealed	Hole PCB, w/Ground	ops
<b>B3W-4155</b>	50mA @ 24 VDC	Top Actuated, projected plunger (for B32 Keycap)	SPST-NO	350g	Semi-sealed	Through-Hole PCB, w/Ground	1,000,000 ops





# Tactile Switch B3W

## Tactile Switch with Sealed Construction for Automatic Soldering

- Available in two sizes:  
6 mm square and 12 mm square
- Dome-shaped contact mechanism assures short key stroke and a sharp click to confirm actuation
- 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
- Stick packaging style available
- Sealed for cleaning with alcohol based solutions
- RoHS Compliant



## Ordering Information

Type	Plunger	Switch height x pitch	Operating force	Part number	
				Without ground terminal	With ground terminal
				Bags	Bags
Standard 6x6 mm	Flat 	4.3 x 6.5 mm	General-purpose: 160 g	<b>B3W-1000</b>	<b>B3W-1100</b>
			High-force: 230 g	<b>B3W-1002</b>	<b>B3W-1102</b>
	Projected 	7.3 x 6.5 mm	General-purpose: 160 g	<b>B3W-1050</b>	<b>B3W-1150</b>
			High-force: 230 g	<b>B3W-1052</b>	<b>B3W-1152</b>
Standard 12x12mm	Flat 	4.3 x 6.5 mm	General-purpose: 200 g	<b>B3W-4000</b>	<b>B3W-4100</b>
			High-force: 350 g	<b>B3W-4005</b>	<b>B3W-4105</b>
	Projected 	7.3 x 6.5 mm	General-purpose: 200 g	<b>B3W-4050</b>	<b>B3W-4150</b>
			High-force: 350 g	<b>B3W-4055</b>	<b>B3W-4155</b>

\* Bulk Packaged, 100 switches per bag

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

## ■ Accessories

See “B32” Tactile Switch Key Top data sheet for keycaps that fit projected plunger B3W models.

### Plunger Identification Table

Use this table to determine keyswitch type by plunger color.

Plunger color	Operating force	Type
White	160 g	<b>B3W-1000, 1050, 1100, 1150</b>
White	200 g	<b>B3W-4000, 4050, 4100, 4150</b>
Yellow	230 g	<b>B3W-1002, 1052, 1102, 1152</b>
Yellow	350 g	<b>B3W-4005, 4055, 4105, 4155</b>

## Specifications

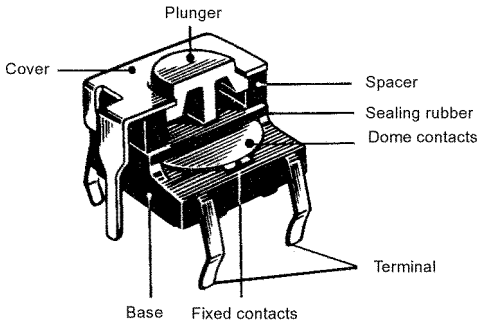
### ■ Characteristics

<b>Switching capacity</b>		50 mA 24 VDC (resistive load)	
<b>Contact form</b>		SPST-NO	
<b>Minimum permissible load</b>		1 mA 5 VDC min. (resistive load)	
<b>Contact resistance</b>		100 MΩ max. (initial value, rated: 1 mA, 5 VDC)	
<b>Insulation resistance</b>		100 MΩ min. (at 250 VDC)	
<b>Dielectric strength</b>		500 VAC, 50/60 Hz for 1 min.	
<b>Bounce time</b>		5 ms max.	
<b>Vibration</b>	<b>Malfunction durability</b>	10 to 55 Hz, 1.5-mm double amplitude	
<b>Shock</b>	<b>Destruction durability</b>	1,000 m/s <sup>2</sup> (approx. 100 G)	
	<b>Malfunction durability</b>	100 m/s <sup>2</sup> (approx. 10 G)	
<b>Ambient temperature</b>		-25° to 70°C	
<b>Humidity</b>		35% to 85% RH	
<b>Service life</b> [mechanical/electrical]	<b>General-purpose type</b>	B3W-1□□□ : 1,000,000 operations min.	B3W-4□□□ : 3,000,000 operations min.
	<b>High-load type</b>	300,000 operations min.	1,000,000 operations min.
<b>Weight</b>		B3W-1□□□ : Approx. 0.30 g	B3W-4□□□ : Approx. 1.00 g

## Operating Characteristics

Characteristics	Part number			
	B3W-1□□□		B3W-4□□□	
	General-purpose	High-force	General-purpose	High-force
Operating force (OF) max.	160 g	230 g	200 g	350 g
Release force (RF) min.	20 g	50 g	30 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	0.3 <sup>+0.2</sup> / <sub>-0.1</sub> mm	0.3 <sup>+0.2</sup> / <sub>-0.1</sub> mm

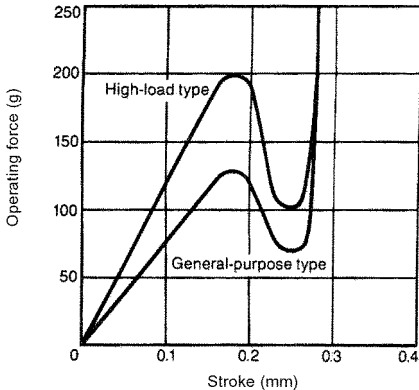
## Construction



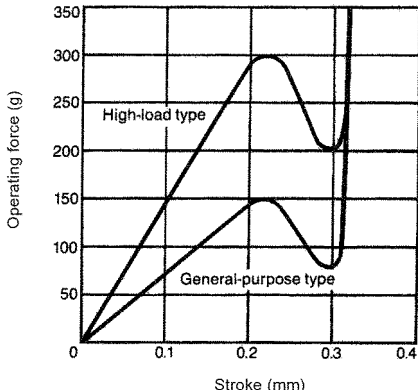
## Engineering Data

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

B3W-1□□□ series



B3W-4□□□ series



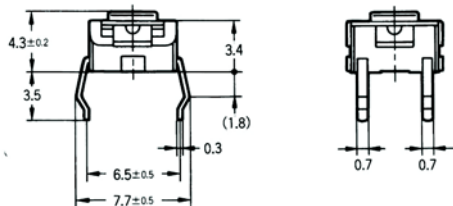
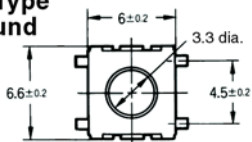
# Dimensions

Unit: mm

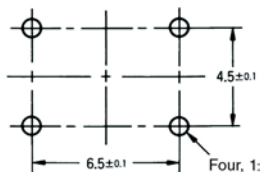
## ■ 6 mm Square Types

**Flat Plunger Type  
(without Ground Terminal)**

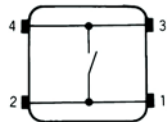
**B3W-1000  
B3W-1002**



**PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)**

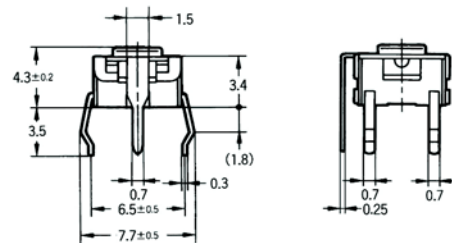
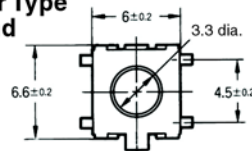


**Terminal Arrangement  
/Internal Connections  
(Top View)**

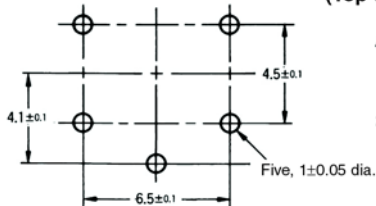


**Flat Plunger Type  
(with Ground Terminal)**

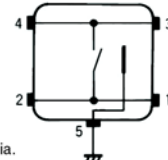
**B3W-1100  
B3W-1102**



**PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)**



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

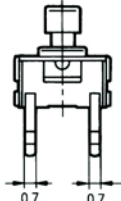
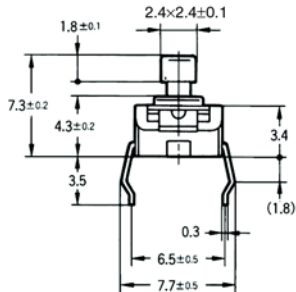
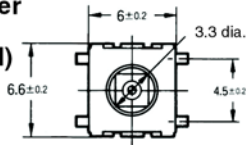


**Note:** Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

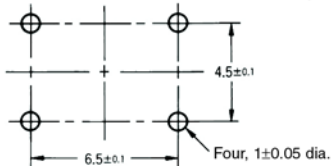
# 6 mm Square Types

**Projected Plunger Type (without Ground Terminal)**

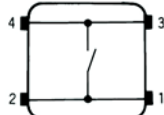
**B3W-1050  
B3W-1052**



**PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)**

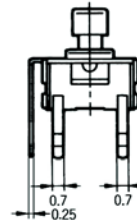
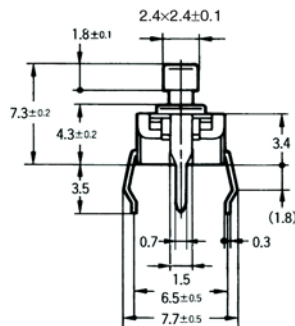
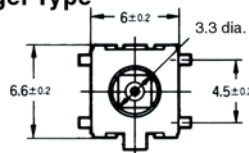


**Terminal Arrangement /Internal Connections (Top View)**

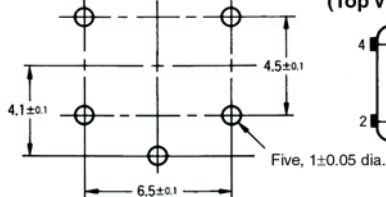


**Projected Plunger Type (with Ground Terminal)**

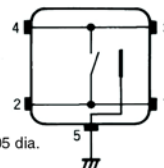
**B3W-1150  
B3W-1152**



**PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)**



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



**Note:** Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

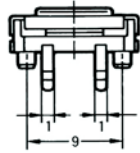
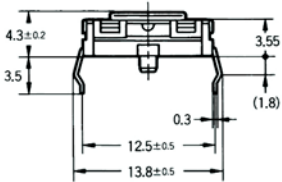
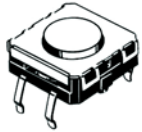
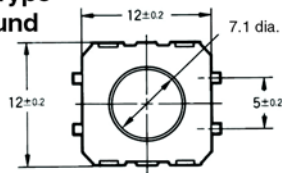


Unit: mm

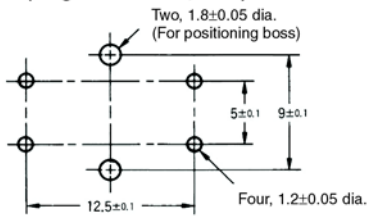
## ■ 12 mm Square Types

**Flat Plunger Type  
(without Ground  
Terminal)**

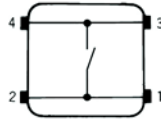
**B3W-4000  
B3W-4005**



**PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)**

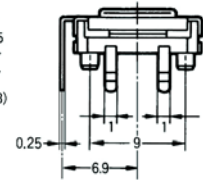
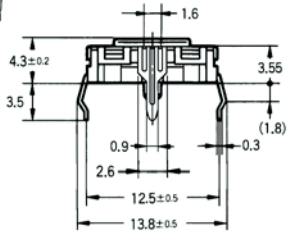
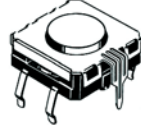
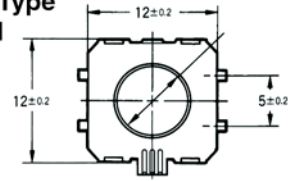


**Terminal Arrangement  
/Internal Connections  
(Top View)**

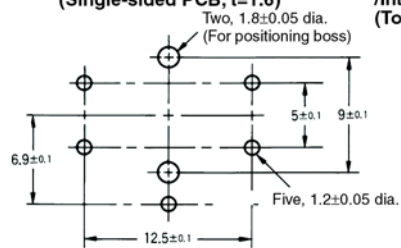


**Flat Plunger Type  
(with Ground  
Terminal)**

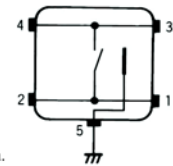
**B3W-4100  
B3W-4105**



**PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)**



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

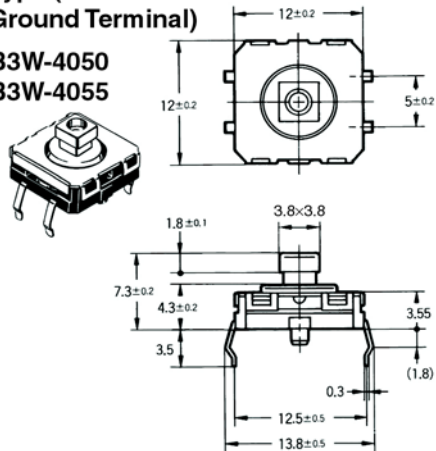


**Note:** Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

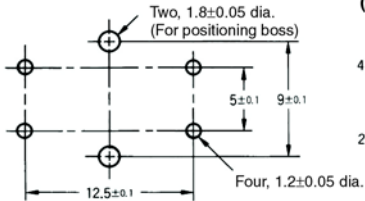
# ■ 12 mm Square Types

## Projected Plunger Type (without Ground Terminal)

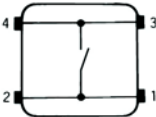
B3W-4050  
B3W-4055



PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)

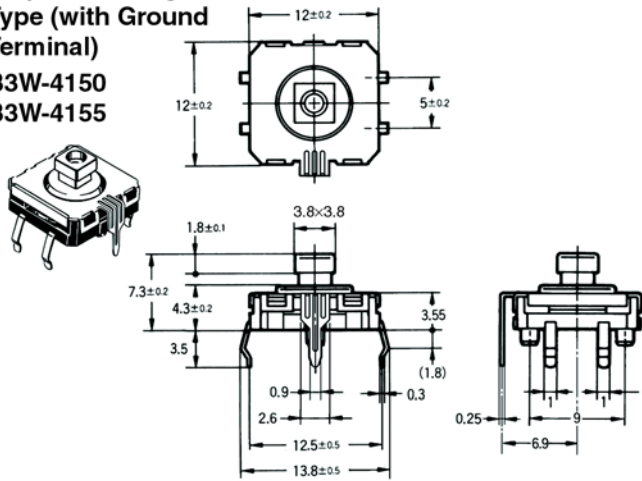


Terminal Arrangement /Internal Connections (Top View)

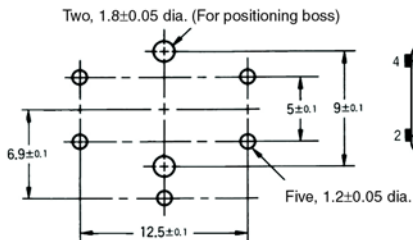


## Projected Plunger Type (with Ground Terminal)

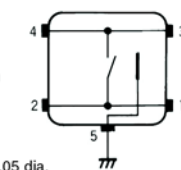
B3W-4150  
B3W-4155



PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)



Terminal Arrangement /Internal Connections (Top View)



Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.