

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) |
|------------------|-------------------------------|--|--------------|-----------------|-------------|-----------------------------|--|
| B3W-1000 | 50mA @ 24 VDC | Top Actuated plunger | SPST-NO | 160g | Semi-sealed | Through-Hole PCB - Straight | 1,000,000 ops |
| B3W-1002 | 50mA @ 24 VDC | Top Actuated plunger | SPST-NO | 230g | Semi-sealed | Through-Hole PCB - Straight | 300,000 ops |
| B3W-1002S | 50mA @ 24 VDC | Top Actuated plunger | SPST-NO | 230g | Semi-sealed | Through-Hole PCB - Straight | 300,000 ops |
| B3W-1050 | 50mA @ 24 VDC | Top Actuated, projected plunger (for B32 Keycap) | SPST-NO | 160g | Semi-sealed | Through-Hole PCB - Straight | 1,000,000 ops |
| B3W-1052 | 50mA @ 24 VDC | Top Actuated, projected plunger (for B32 Keycap) | SPST-NO | 230g | Semi-sealed | Through-Hole PCB - Straight | 300,000 ops |
| B3W-1100 | 50mA @ 24 VDC | Top Actuated plunger | SPST-NO | 160g | Semi-sealed | Through-Hole PCB, w/Ground | 1,000,000 ops |
| B3W-1100S | 50mA @ 24 VDC | Top Actuated plunger | SPST-NO | 160g | Semi-sealed | Through-Hole PCB, w/Ground | 1,000,000 ops |
| B3W-1102 | 50mA @ 24 VDC | Top Actuated plunger | SPST-NO | 230g | Semi-sealed | Through-Hole PCB, w/Ground | 300,000 ops |
| B3W-1150 | 50mA @ 24 VDC | Top Actuated, | SPST-NO | 160g | Semi-sealed | Through-Hole PCB, | 1,000,000 ops |

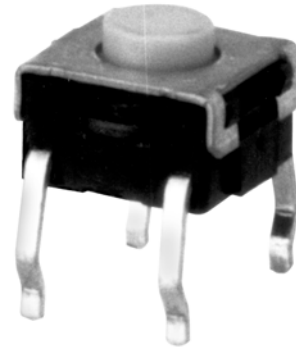
| | | | | | | | |
|------------------|---------------|--|---------|------|-------------|-----------------------------|---------------|
| | | projected plunger (for B32 Keycap) | | | | w/Ground | |
| B3W-1152 | 50mA @ 24 VDC | Top Actuated, projected plunger (for B32 Keycap) | SPST-NO | 230g | Semi-sealed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

| | | | | | | | |
|-----------------|---------------|--|---------|------|-------------|----------------------------|---------------|
| 4150S | 24 VDC | Actuated, projected plunger (for B32 Keycap) | NO | | sealed | Hole PCB, w/Ground | ops |
| B3W-4155 | 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 | B3W-1000 | B3W-1100 |
| | | | High-force: 230 g | B3W-1002 | B3W-1102 |
| | Projected  | 7.3 x 6.5 mm | General-purpose: 160 g | B3W-1050 | B3W-1150 |
| | | | High-force: 230 g | B3W-1052 | B3W-1152 |
| Standard 12x12mm | Flat  | 4.3 x 6.5 mm | General-purpose: 200 g | B3W-4000 | B3W-4100 |
| | | | High-force: 350 g | B3W-4005 | B3W-4105 |
| | Projected  | 7.3 x 6.5 mm | General-purpose: 200 g | B3W-4050 | B3W-4150 |
| | | | High-force: 350 g | B3W-4055 | B3W-4155 |

* 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 | B3W-1000, 1050, 1100, 1150 |
| White | 200 g | B3W-4000, 4050, 4100, 4150 |
| Yellow | 230 g | B3W-1002, 1052, 1102, 1152 |
| Yellow | 350 g | B3W-4005, 4055, 4105, 4155 |

Specifications

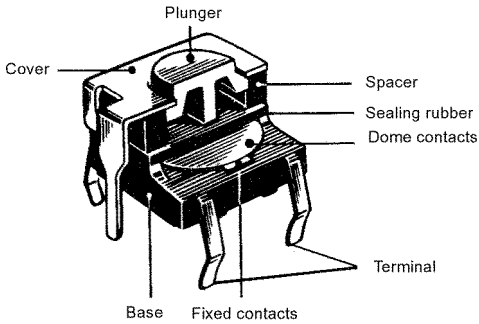
■ Characteristics

| | | | |
|--|-------------------------------|---|--------------------------------------|
| Switching capacity | | 50 mA 24 VDC (resistive load) | |
| Contact form | | SPST-NO | |
| Minimum permissible load | | 1 mA 5 VDC min. (resistive load) | |
| Contact resistance | | 100 MΩ max. (initial value, rated: 1 mA, 5 VDC) | |
| Insulation resistance | | 100 MΩ min. (at 250 VDC) | |
| Dielectric strength | | 500 VAC, 50/60 Hz for 1 min. | |
| Bounce time | | 5 ms max. | |
| Vibration | Malfunction durability | 10 to 55 Hz, 1.5-mm double amplitude | |
| Shock | Destruction durability | 1,000 m/s ² (approx. 100 G) | |
| | Malfunction durability | 100 m/s ² (approx. 10 G) | |
| Ambient temperature | | -25° to 70°C | |
| Humidity | | 35% to 85% RH | |
| Service life [mechanical/electrical] | General-purpose type | B3W-1□□□ : 1,000,000 operations min. | B3W-4□□□ : 3,000,000 operations min. |
| | High-load type | 300,000 operations min. | 1,000,000 operations min. |
| Weight | | 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 ^{+0.2} / _{-0.1} mm | 0.25 ^{+0.2} / _{-0.1} mm | 0.3 ^{+0.2} / _{-0.1} mm | 0.3 ^{+0.2} / _{-0.1} mm |

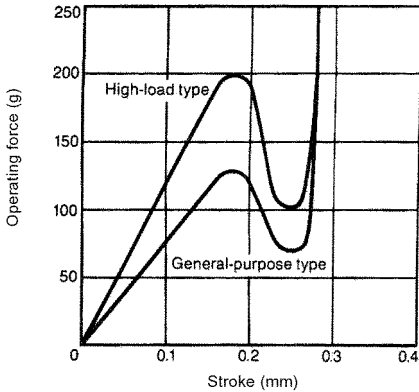
Construction



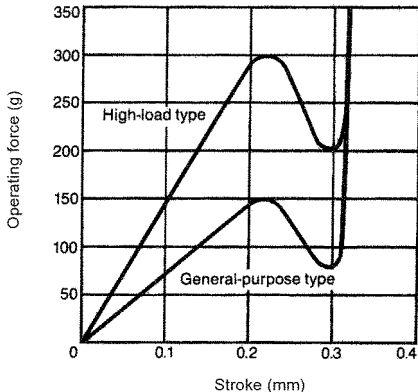
Engineering Data

Operating Force vs. Stroke (Typical Example)

B3W-1□□□ series



B3W-4□□□ series



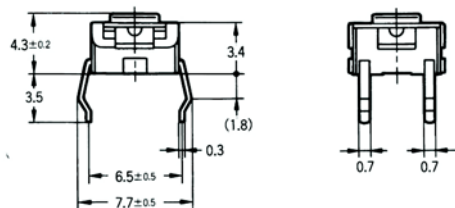
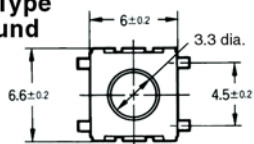
Dimensions

Unit: mm

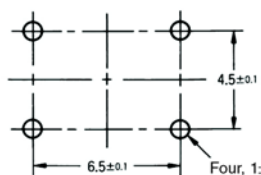
■ 6 mm Square Types

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

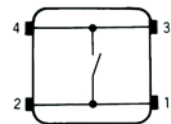
**B3W-1000
B3W-1002**



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

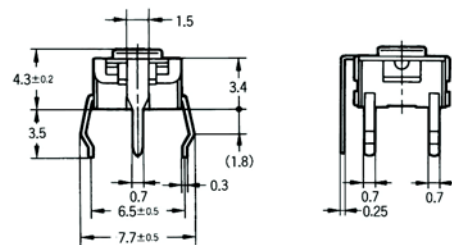
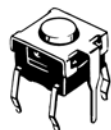
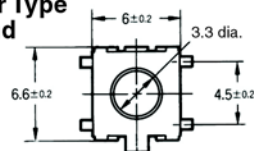


**Terminal Arrangement
/Internal Connections
(Top View)**

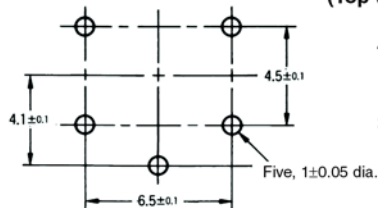


**Flat Plunger Type
(with Ground Terminal)**

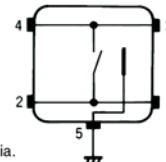
**B3W-1100
B3W-1102**



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



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

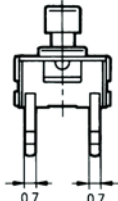
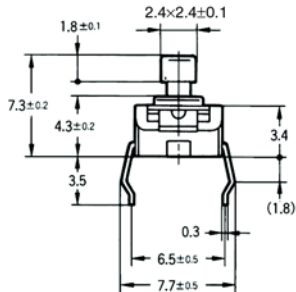
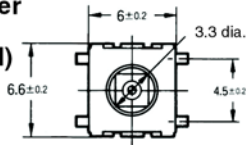


Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

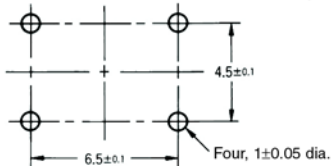
6 mm Square Types

Projected Plunger Type (without Ground Terminal)

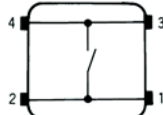
**B3W-1050
B3W-1052**



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

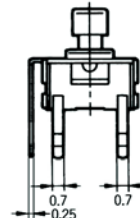
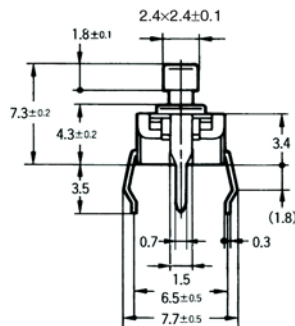
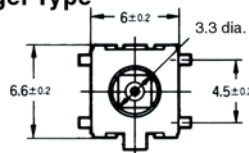


Terminal Arrangement /Internal Connections (Top View)

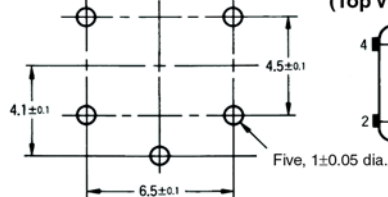


Projected Plunger Type (with Ground Terminal)

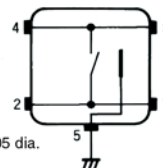
**B3W-1150
B3W-1152**



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



Terminal Arrangement /Internal Connections (Top View)



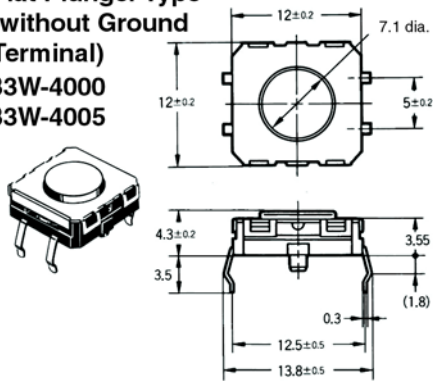
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Unit: mm

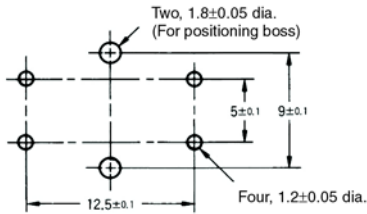
■ 12 mm Square Types

Flat Plunger Type (without Ground Terminal)

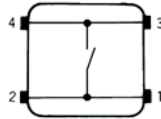
B3W-4000
B3W-4005



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

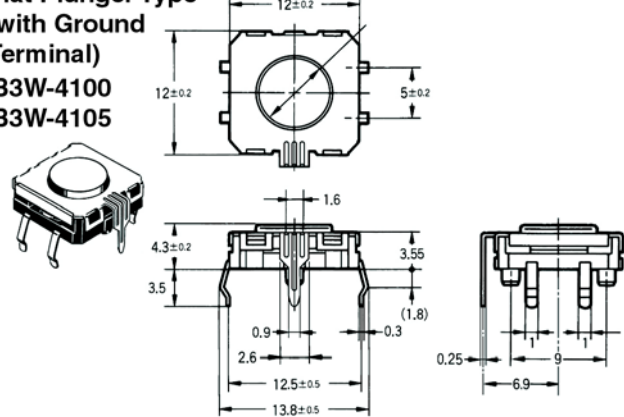


Terminal Arrangement /Internal Connections (Top View)

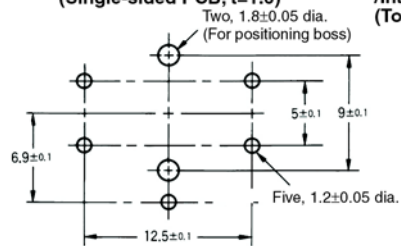


Flat Plunger Type (with Ground Terminal)

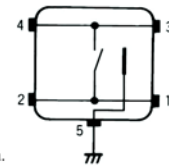
B3W-4100
B3W-4105



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



Terminal Arrangement /Internal Connections (Top View)

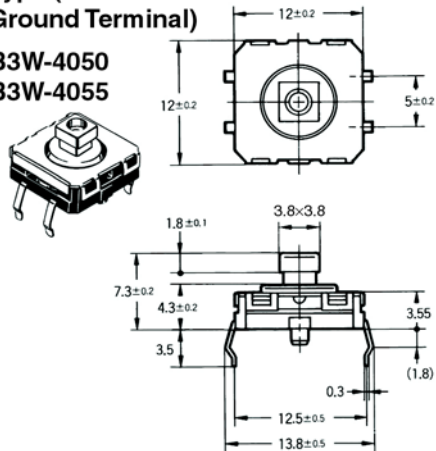


Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

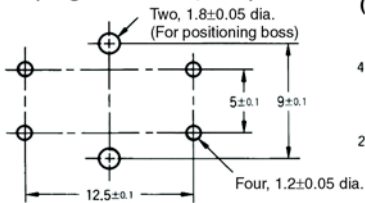
■ 12 mm Square Types

Projected Plunger Type (without Ground Terminal)

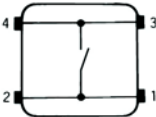
B3W-4050
B3W-4055



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

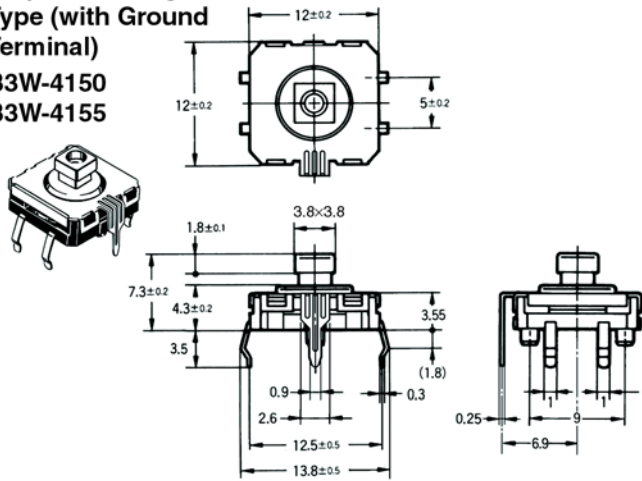


Terminal Arrangement /Internal Connections (Top View)

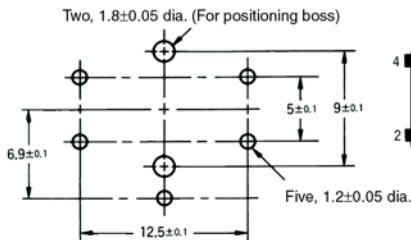


Projected Plunger Type (with Ground Terminal)

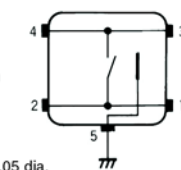
B3W-4150
B3W-4155



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.