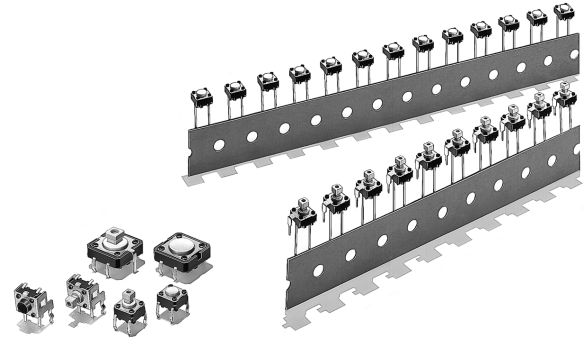


### A Wide Range of Models:

**6 × 6 mm, 12 × 12 mm, Side-operated, High-force, and Gold-plated.**

- Extended mechanical/electrical durability:  $10 \times 10^6$  operations for 12 x 12 mm type and  $1 \times 10^6$  operations for the 6 x 6 mm type
- Taped radial type, vertical type and high force types are available.
- Gold plated models available for increased contact reliability, resistance to corrosive gas and insulation failure prevention for ion migration in harsh environments
- Type B32 Key Tops are available for projected plunger models.





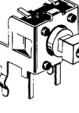

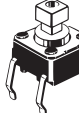
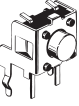
RoHS Compliant

## Ordering Information

### ■ List of Models

#### 6 × 6 mm Models

| Type                | Plunger  | Height                | Operating force (OF) | Plunger color   | Bags (in units of 100 Switches) |                      |
|---------------------|--|-----------------------|----------------------|-----------------|---------------------------------|----------------------|
|                     |  |                       |                      |                 | Without ground terminal         | With ground terminal |
| Standard (B3F-1000) | Flat type<br> | 4.3 mm                | 0.98 N {100 gf}      | Ivory           | B3F-1000                        | B3F-1100             |
|                     |  |                       | 1.47 N {150 gf}      | Yellow          | B3F-1002                        | B3F-1102             |
|                     |  |                       | 2.55 N {260 gf}      | Orange          | B3F-1005                        | B3F-1105             |
|                     |  |                       | 4.9 N {500 gf}       | Red             | B3F-1006                        | ---                  |
|                     |  | 5.0 mm                | 0.98 N {100 gf}      | Black           | B3F-1020                        | B3F-1120             |
|                     |  |                       | 1.47 N {150 gf}      | Gray            | B3F-1022                        | B3F-1122             |
|                     |  |                       | 2.55 N {260 gf}      | Pink            | B3F-1025                        | B3F-1125             |
|                     |  |                       | 4.9 N {500 gf}       | Blue            | B3F-1026                        | ---                  |
|                     |  | 5.0 mm (7.5-mm pitch) | 0.98 N {100 gf}      | Black           | ---                             | B3F-1110             |
|                     |  | 7.0 mm                | 0.98 N {100 gf}      | Black           | B3F-1060                        | ---                  |
|                     |  |                       | 1.47 N {150 gf}      | Yellow          | B3F-1062                        | ---                  |
|                     |  |                       | 9.5 mm               | 0.98 N {100 gf} | Black                           | B3F-1070             |
|                     | 1.47 N {150 gf}  |                       |                      | Yellow          | B3F-1072                        | ---                  |
|                     | 9.5 mm   | 2.55 N {260 gf}       | Orange               | B3F-1075        | ---                             |                      |
|                     |  | 7.3 mm                | 0.98 N {100 gf}      | Ivory           | B3F-1050                        | B3F-1150             |
|                     |  |                       | 1.47 N {150 gf}      | Yellow          | B3F-1052                        | B3F-1152             |
| 2.55 N {260 gf}     |  |                       | Orange               | B3F-1055        | B3F-1155                        |                      |
| 4.9 N {500 gf}      | Red  |                       | B3F-1056             | ---             |                                 |                      |

| Type                                 | Plunger   | Height  | Operating force (OF) | Plunger color | Bags (in units of 100 Switches) |                       |
|--------------------------------------|---|---------|----------------------|---------------|---------------------------------|-----------------------|
|                                      |   |         |                      |               | Without ground terminal         | With ground terminal  |
| Side-operated (B3F-3000)             | <br>Flat type      | 3.15 mm | 0.98 N {100 gf}      | Ivory         | ---                             | B3F-3100              |
|                                      |   |         | 1.47 N {150 gf}      | Yellow        | ---                             | B3F-3102              |
|                                      |   |         | 2.55 N {260 gf}      | Orange        | ---                             | B3F-3105              |
|                                      |   | 3.85 mm | 0.98 N {100 gf}      | Black         | ---                             | B3F-3120              |
|                                      |   |         | 1.47 N {150 gf}      | Gray          | ---                             | B3F-3122              |
|                                      |   |         | 2.55 N {260 gf}      | Pink          | ---                             | B3F-3125              |
|                                      | <br>Projected type | 6.15 mm | 0.98 N {100 gf}      | Ivory         | ---                             | B3F-3150              |
|                                      |   |         | 1.47 N {150 gf}      | Yellow        | ---                             | B3F-3152              |
|                                      |   |         | 2.55 N {260 gf}      | Orange        | ---                             | B3F-3155              |
| High reliability gold-plated contact | <br>Flat type      | 4.3 mm  | 1.76 N {180 gf}      | Yellow        | B3F-1002-G                      | B3F-1102-G            |
|                                      |   | 5.0 mm  |                      | Gray          | B3F-1022-G                      | B3F-1122-G            |
|                                      |   | 7.0 mm  |                      | Yellow        | B3F-1062-G (see note)           | ---                   |
|                                      |   | 9.5 mm  |                      | Yellow        | B3F-1072-G (see note)           | ---                   |
|                                      | <br>Projected type | 7.3 mm  | Yellow               | B3F-1052-G    | ---                             |                       |
|                                      | <br>Flat type    | 3.85 mm | 1.76 N {180 gf}      | Gray          | ---                             | B3F-3122-G (see note) |

**Note:** Bulk Packaged, 100 Switches per bag. Order in multiples of the package quantity.

### 12 × 12 mm Models

| Type                                    | Plunger (or LED color) | Height | Operating force (OF) | Plunger color | Bags (in units of 100 Switches) |                      |
|---|------------------------|--------|----------------------|---------------|---------------------------------|----------------------|
|   |                        |        |                      |               | Without ground terminal         | With ground terminal |
| Standard (B3F-4000)                     | Flat type              | 4.3 mm | 1.27 N {130 gf}      | Ivory         | B3F-4000                        | B3F-4100             |
|   |                        |        | 2.55 N {260 gf}      | Yellow        | B3F-4005                        | B3F-4105             |
|   | Projected type         | 7.3 mm | 1.27 N {130 gf}      | Ivory         | B3F-4050                        | B3F-4150             |
|   |                        |        | 2.55 N {260 gf}      | Yellow        | B3F-4055                        | B3F-4155             |
| Long durability (B3F-5000)              | Flat type              | 4.3 mm | 1.27 N {130 gf}      | Blue          | B3F-5000                        | B3F-5100             |
|   | Projected type         | 7.3 mm |                      | Blue          | B3F-5050                        | B3F-5150             |
| High reliability gold-plated (B3F-5001) | Flat type              | 4.3 mm | 1.27 N {130 gf}      | Blue          | B3F-5001                        | B3F-5101             |
|   | Projected type         | 7.3 mm |                      | Blue          | B3F-5051                        | B3F-5151             |

**Note:** Bulk Packaged, 100 switches per bag. Order in multiples of the package quantity.

### 6 × 6 mm Radial Models (Taping Specifications)

| Type                    | Plunger        | Height | Operating force (OF) | Plunger color | Taped Radial (1000 Switches) |                      |
|-------------------------|----------------|--------|----------------------|---------------|------------------------------|----------------------|
|                         |                |        |                      |               | Without ground terminal      | With ground terminal |
| Taped Radial (B3F-6000) | Flat type      | 4.3 mm | 0.98 N {100 gf}      | Ivory         | B3F-6000                     | B3F-6100             |
|                         |                |        | 1.47 N {150 gf}      | Yellow        | B3F-6002                     | B3F-6102             |
|                         |                | 5.0 mm | 0.98 N {100 gf}      | Black         | B3F-6020                     | B3F-6120             |
|                         |                |        | 1.47 N {150 gf}      | Gray          | B3F-6022                     | B3F-6122             |
|                         | Projected type | 7.3 mm | 0.98 N {100 gf}      | Ivory         | B3F-6050                     | B3F-6150             |
|                         |                |        | 1.47 N {150 gf}      | Yellow        | B3F-6052                     | B3F-6152             |

**Note:** The switches are tape packaged in units of 1,000 per package. Order in multiples of the package size. Switches are not sold individually.

# Specifications

## ■ Ratings/Characteristics

|                               |   |
|-------------------------------|---|
| Switching capacity            | 1 to 50 mA, 5 to 24 VDC (resistive load) (B3F-G: 100 $\mu$ A to 50 mA, 5 to 24 VDC)   |
| Ambient operating temperature | -25°C to +70°C at 60%RH max. (with no icing or condensation)  |
| Ambient operating humidity    | 35% to 85% (at +5 to +35°C)   |
| Contact form                  | SPST-NO   |
| Contact resistance            | 100 m $\Omega$ max. (initial value) (rated: 1 mA, 5 VDC) B3F-G: (rated: 100 $\mu$ A, 5 VDC)   |
| Insulation resistance         | 100 M $\Omega$ min. (at 250 VDC)  |
| Dielectric strength           | 500 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 <sup>2</sup> {approx. 100G} max.<br>Malfunction: 100 m/s <sup>2</sup> {approx. 10G} max.   |
| Durability                    | B3F-1000, B3F-3000, B3F-6000:<br>1,000,000 operations min (OF: 0.98 N {100 gf}) (B3F-1070: 500,000 operations min)<br>300,000 operations min (OF: 1.47 N {150 gf})<br>100,000 operations min (OF: 2.55 N {260 gf})<br>50,000 operations min (OF: 4.9 N {500 gf})<br>B3F-4000:<br>3,000,000 operations min (OF: 1.27 N {131 gf})<br>1,000,000 operations min (OF: 2.55 N {260 gf})<br>B3F-5000:<br>10,000,000 operations min.<br>B3F-G:<br>300,000 operations min. |
| Weight                        | 6 $\times$ 6 mm models: approx. 0.25 g<br>12 $\times$ 12 mm models (standard types): approx. 0.85 g<br>Radial models: approx. 0.25 g  |

## ■ Operating Characteristics

| Operating force (OF) | B3F-1000, B3F-3000, B3F-6000              |  |  |  | B3F-4000, B3F-5000                       |  | B3F-G                                     |
|----------------------|---|--|--|--|--|--|---|
|                      | 0.98 N                                    | 1.47 N                                 | 2.55 N                                 | 4.9 N                                  | 1.27 N                                   | 2.55 N                                 | 1.76 N                                    |
| Item                 | B3F-1□□0<br>B3F-3□□0<br>B3F-6□□0          | B3F-1□□2<br>B3F-3□□2<br>B3F-6□□2       | B3F-1□□5<br>B3F-3□□5                   | B3F-10□6                               | B3F-4□□0<br>B3F-5□□0<br>B3F-5□□1         | B3F-4□□5                               | B3F-1□□2-G<br>B3F-3□□2-G                  |
| Operating force (OF) | 0.98 $\pm$ 0.29 N<br>{100 $\pm$ 30 gf}    | 1.47 $\pm$ 0.49 N<br>{150 $\pm$ 50 gf} | 2.55 $\pm$ 0.69 N<br>{260 $\pm$ 70 gf} | 4.9 $\pm$ 1.47 N<br>{500 $\pm$ 150 gf} | 1.27 $\pm$ 0.49 N<br>{130 $\pm$ 50 gf}   | 2.55 $\pm$ 0.69 N<br>{260 $\pm$ 70 gf} | 1.76 $\pm$ 0.49 N<br>{180 $\pm$ 50 gf}    |
| Releasing force (RF) | 0.2 N {20 gf}<br>min.                     | 0.49 N {50 gf}<br>min.                 | 0.49 N {50 gf}<br>min.                 | 0.7 N {70 gf}<br>min.                  | 0.29 N {30 gf}<br>min.                   | 0.49 N {50 gf}<br>min.                 | 0.49 N {50 gf}<br>min.                    |
| Pretravel (PT)       | 0.25 <sup>+0.2</sup> / <sub>-0.1</sub> mm |  |  |  | 0.3 <sup>+0.2</sup> / <sub>-0.1</sub> mm |  | 0.25 <sup>+0.2</sup> / <sub>-0.1</sub> mm |

# Dimensions

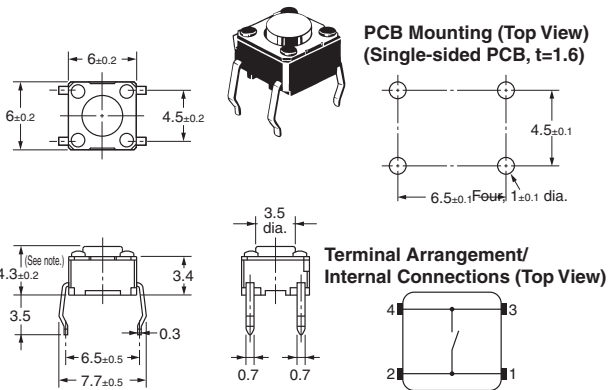
- Note:** 1. All units are in millimeters unless otherwise indicated. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.
2. No terminal numbers are indicated on the Switches. The numbers used for terminals in the following graphics are indicated in the "Bottom View" diagram below. In this diagram, the Switch is rotated so that the terminals are on the right and left-hand sides, and the OMRON logo appears the right way up. (Except Side-operated and Radial Models)



## 6 × 6 mm Models

### Standard, Flat Plunger Type (without Ground Terminal)

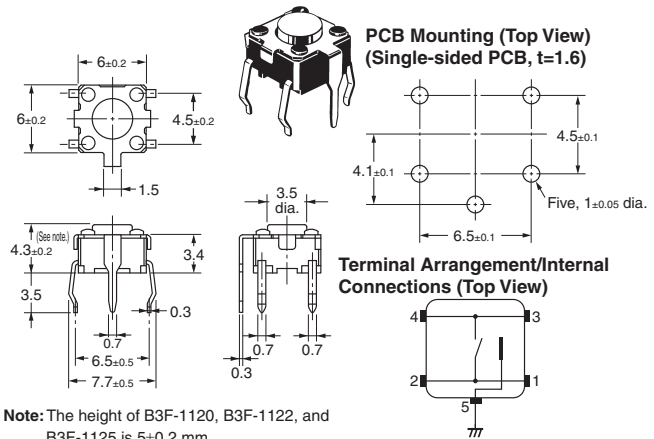
B3F-1000, B3F-1002, B3F-1005, B3F-1006  
 B3F-1020 (See note.), B3F-1022 (See note.),  
 B3F-1025 (See note.), B3F-1026 (See note.)  
 B3F-1002-G, B3F-1022-G (See note.)



**Note:** The height of B3F-1020, B3F-1022, B3F-1025, and B3F-1026 is  $5 \pm 0.2$  mm.

### Standard, Flat Plunger Type (with Ground Terminal, Pitch: 6.5 mm)

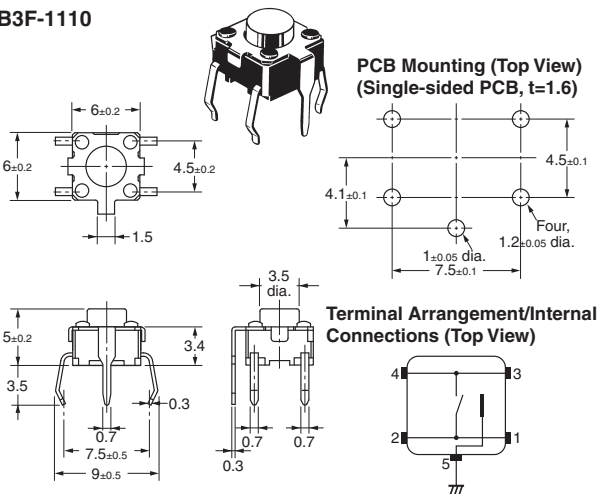
B3F-1100, B3F-1102, B3F-1105  
 B3F-1120 (See note.), B3F-1122 (See note.)  
 B3F-1125 (See note.)  
 B3F-1102-G, B3F-1122-G (See note.)



**Note:** The height of B3F-1120, B3F-1122, and B3F-1125 is  $5 \pm 0.2$  mm.

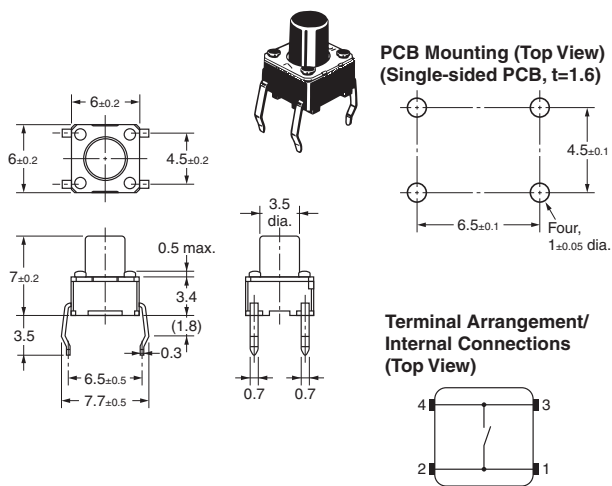
### Standard, Flat Plunger Type (with Ground Terminal, Pitch: 7.5 mm)

B3F-1110



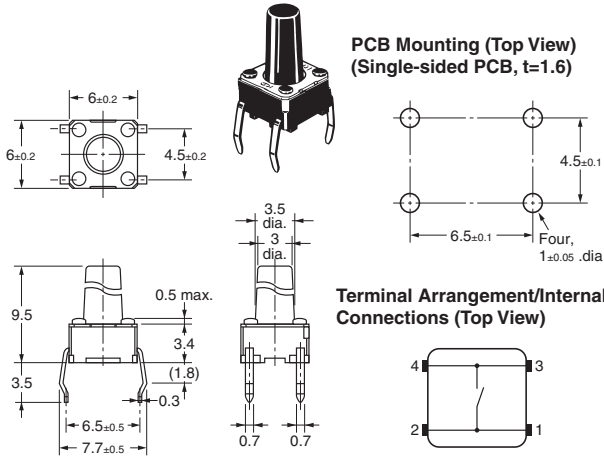
### Standard, Flat Plunger Type (without Ground Terminal)

B3F-1060, B3F-1062, B3F-1062-G



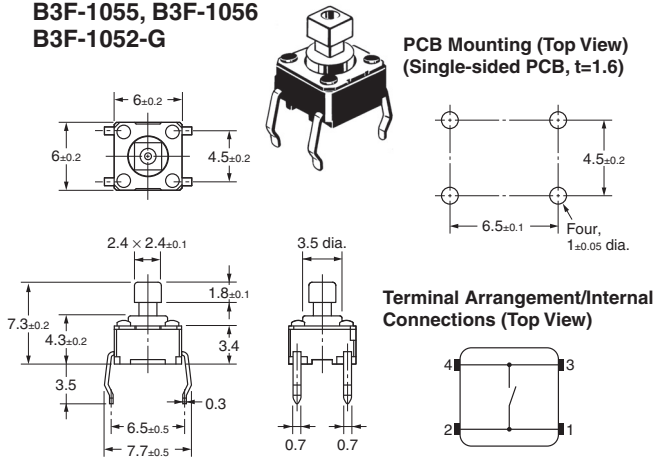
**Standard, Flat Plunger Type  
(without Ground Terminal)**

**B3F-1070, B3F-1072, B3F-1075, B3F-1072-G**



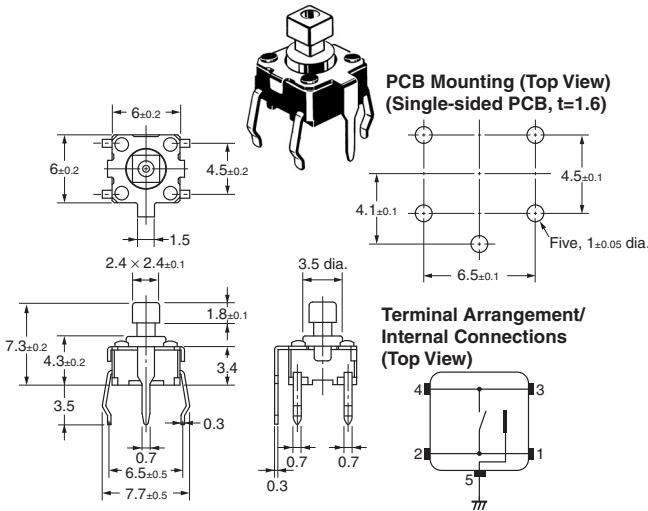
**Standard, Projected Plunger Type  
(without Ground Terminal)**

**B3F-1050, B3F-1052  
B3F-1055, B3F-1056  
B3F-1052-G**



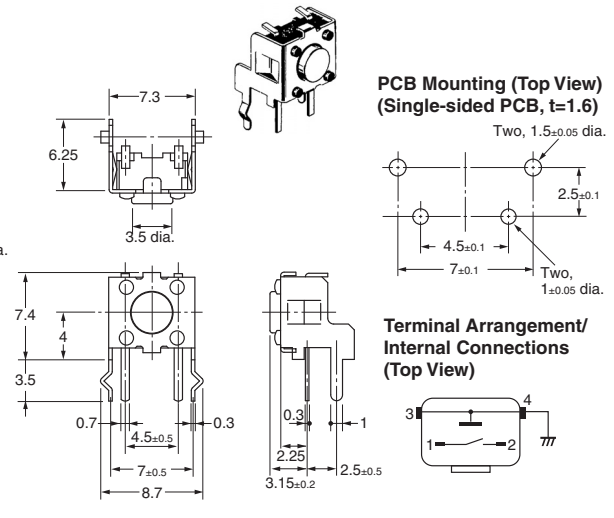
**Standard, Projected Plunger Type  
(with Ground Terminal)**

**B3F-1150, B3F-1152, B3F-1155**



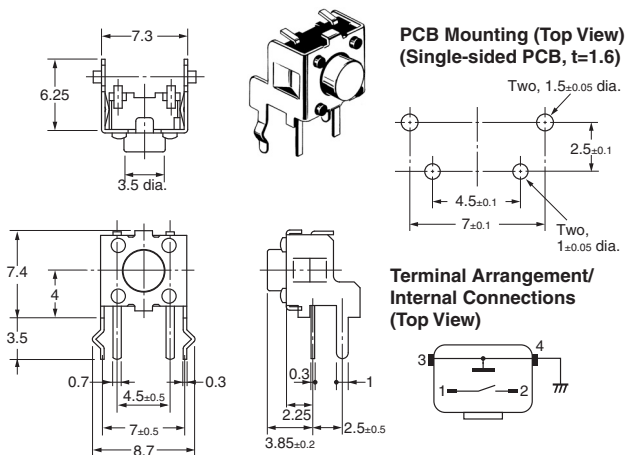
**Side-operated, Flat Plunger Type**

**B3F-3100, B3F-3102, B3F-3105**



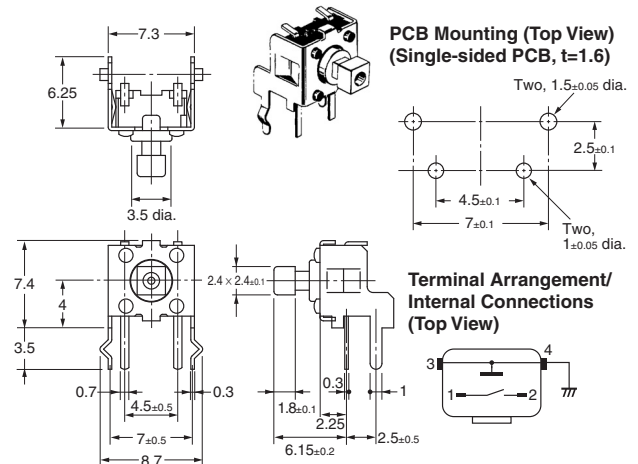
**Side-operated, Flat Plunger Type (Height: 3.85 mm)**

**B3F-3120, B3F-3122, B3F-3125, B3F-3122-G**



**Side-operated, Projected Plunger Type**

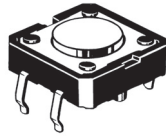
**B3F-3150, B3F-3152, B3F-3155**



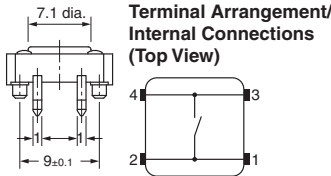
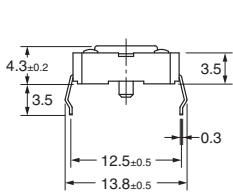
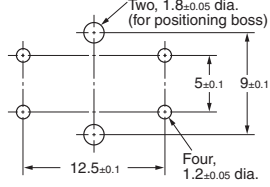
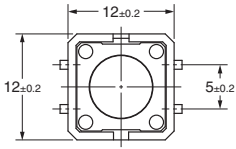
12 × 12 mm Models

Standard, Long-durability, and High-reliability Models Flat Plunger Type (without Ground Terminal)

B3F-4000, B3F-4005, B3F-5000, B3F-5001

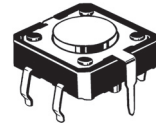


PCB Mounting (Top View) (Single-sided PCB, t=1.6)

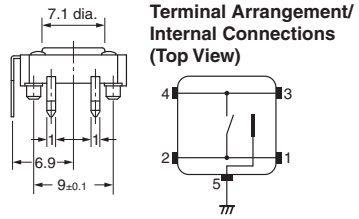
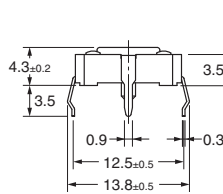
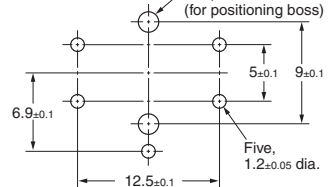
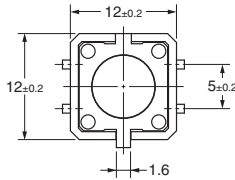


Standard, Long-durability, and High-reliability Models Flat Plunger Type (with Ground Terminal)

B3F-4100, B3F-4105, B3F-5100, B3F-5101

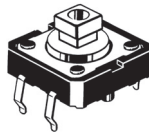


PCB Mounting (Top View) (Single-sided PCB, t=1.6)

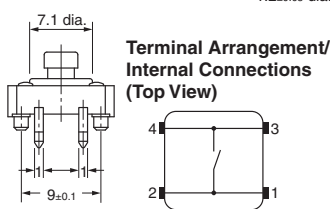
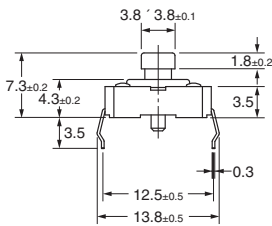
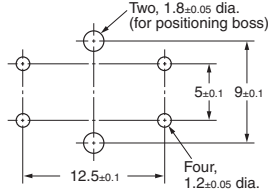
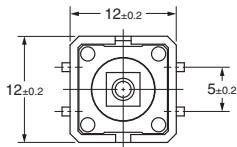


Standard, Long-durability, and High-reliability Models Projected Plunger Type (without Ground Terminal)

B3F-4050, B3F-4055, B3F-5050, B3F-5051

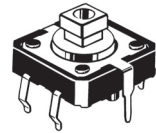


PCB Mounting (Top View) (Single-sided PCB, t=1.6)

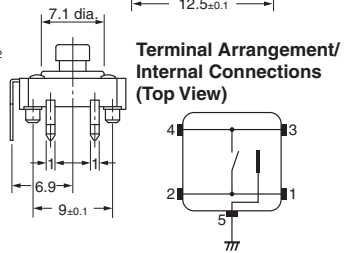
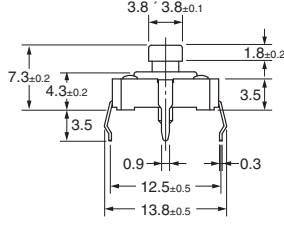
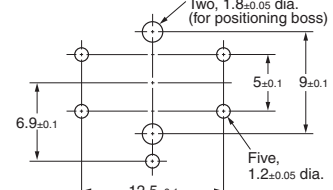
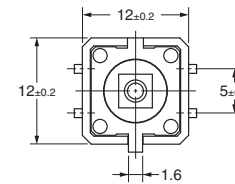


Standard, Long-durability, and High-reliability Models Projected Plunger Type (with Ground Terminal)

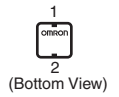
B3F-4150, B3F-4155, B3F-5150, B3F-5151



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

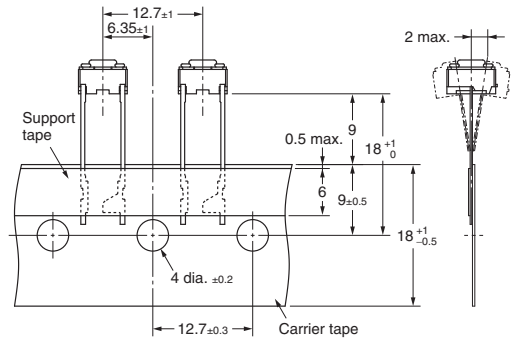
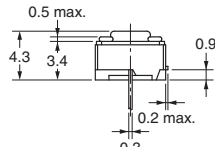
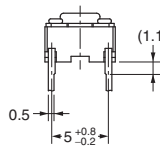
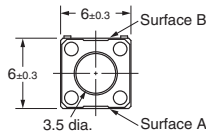
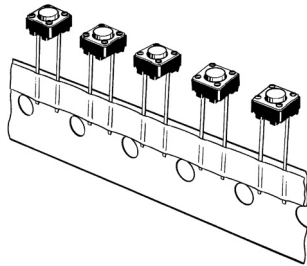


**Note:** The numbers used for terminals in the following graphics are indicated in the "Bottom View" diagram below. In this diagram, the Switch is rotated so that the terminals are on the right and left-hand sides, and the OMRON logo appears the right way up.



**6 mm × 6 mm Radial Types (Taping Specifications): Sold in Units of 1,000 Switches**

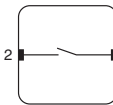
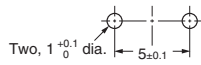
**Flat Plunger Type  
(without Ground Terminal)  
B3F-6000, B3F-6002**



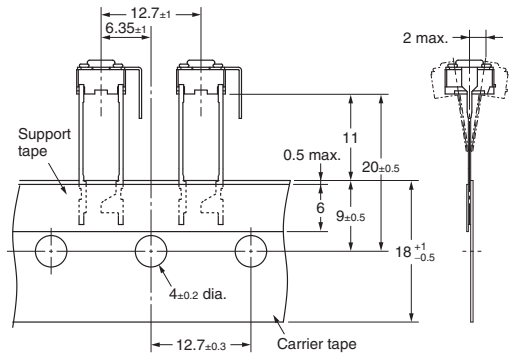
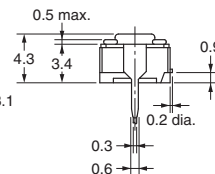
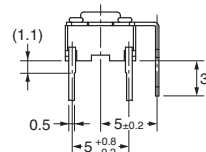
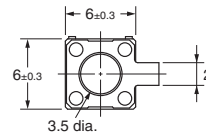
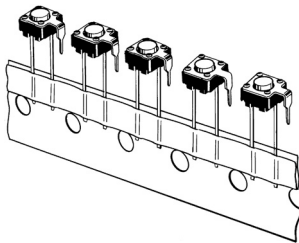
**Note:** The tape is random between surface A and surface B.

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

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

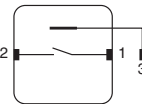
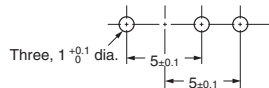


**Flat Plunger Type  
(with Ground Terminal)  
B3F-6100, B3F-6102**

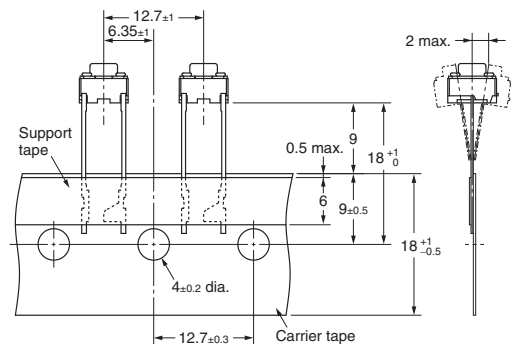
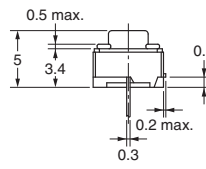
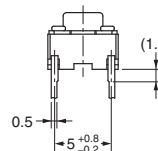
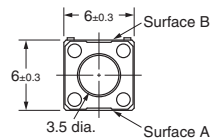
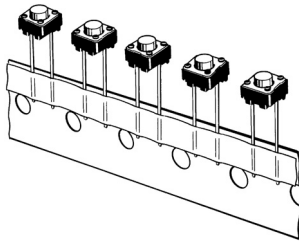


**PCB Mounting  
(Top View)  
(Single-sided PCB, t=1.6)**

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



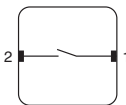
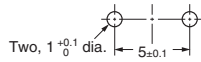
**Flat Plunger Type  
(without Ground Terminal)  
B3F-6020, B3F-6022**



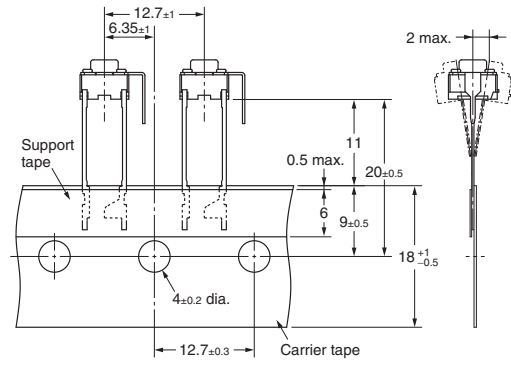
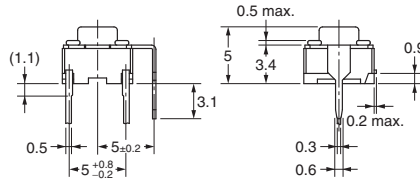
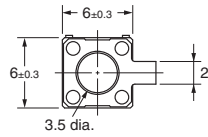
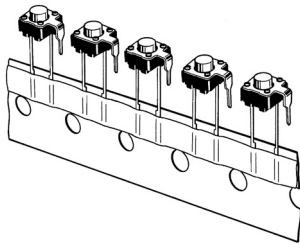
**Note:** The tape is random between surface A and surface B.

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

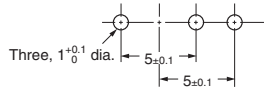
**Terminal Arrangement  
/Internal Connections  
(Top View)**



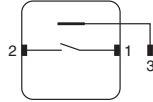
**Flat Plunger Type  
(with Ground Terminal)**  
B3F-6120, B3F-6122



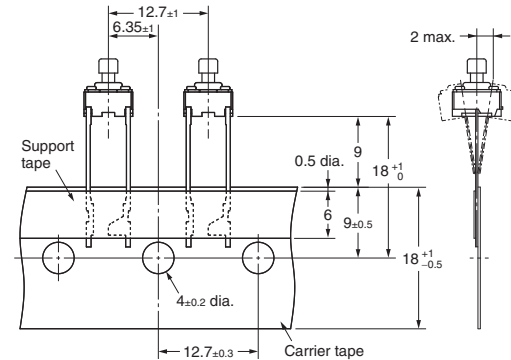
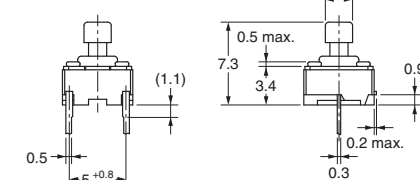
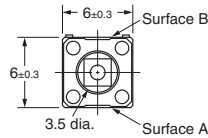
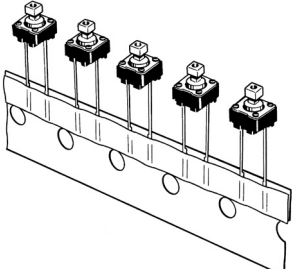
**PCB Mounting  
(Top View)**  
(Single-sided PCB, t=1.6)



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



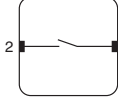
**Projected Plunger Type  
(without Ground Terminal)**  
B3F-6050, B3F-6052



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

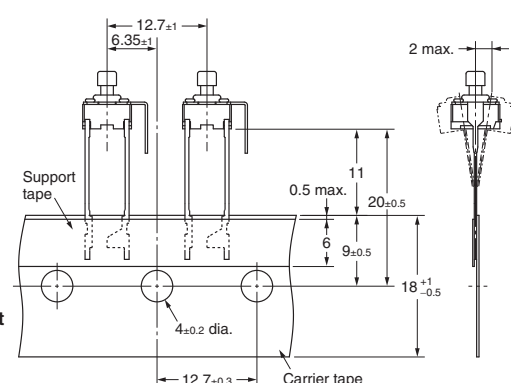
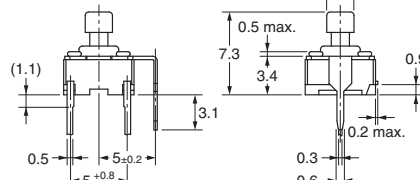
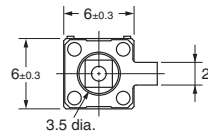
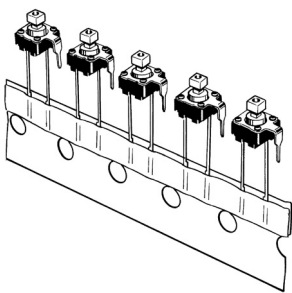


**Terminal Arrangement  
/Internal Connections  
(Top View)**

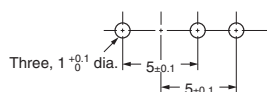


**Note:** The tape is random between surface A and surface B.

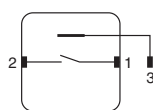
**Projected Plunger Type  
(with Ground Terminal)**  
B3F-6150, B3F-6152



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



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





## Key Tops

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B32-series Special Key Tops are available for projected plunger models. Refer to the Datasheet of B32 for details.

## Precautions

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Be sure to read the safety precautions common to all Tactile Switches for correct use.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.