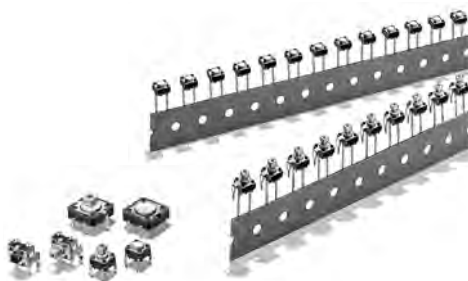


## A Wide Range of Models: 6 x 6 mm, 12 x 12 mm, Vertical and High-force.

- ROHS compliant.
- A positive click action plus a long life equal to that of a no-contact switch.
- Radial models (taping specifications) that allow the use of general-purpose radial taping parts insertion machines have been added to the series.
- High reliability gold plated type available



## Ordering Information

### 6 x 6 mm Models

| Type                  | Plunger                                                                             | Height                | Operating force (of) | Bags (100 Switches)     |                      |
|-----------------------|-------------------------------------------------------------------------------------|-----------------------|----------------------|-------------------------|----------------------|
|                       |                                                                                     |                       |                      | Without ground terminal | With ground terminal |
| Horizontal (B3F-1000) |    | 4.3 mm                | 0.98 N {100 gf}      | B3F-1000                | B3F-1100             |
|                       |                                                                                     |                       | 1.47 N {150 gf}      | B3F-1002                | B3F-1102             |
|                       |                                                                                     |                       | 2.55 N {260 gf}      | B3F-1005                | B3F-1105             |
|                       |                                                                                     |                       | 4.9 N {50 gf}        | B3F-1006                | –                    |
|                       |                                                                                     | 5.0 mm                | 0.98 N {100 gf}      | B3F-1020                | B3F-1120             |
|                       |                                                                                     |                       | 1.47 N {150 gf}      | B3F-1022                | B3F-1122             |
|                       |                                                                                     |                       | 2.55 N {260 gf}      | B3F-1025                | B3F-1125             |
|                       |                                                                                     |                       | 4.9 N {50 gf}        | B3F-1026                | –                    |
|                       |                                                                                     | 5.0 mm (7.5-mm pitch) | 0.98 N {100 gf}      | –                       | B3F-1110             |
|                       |                                                                                     | 7.0 mm                | 0.98 N {100 gf}      | B3F-1060                | –                    |
|                       |                                                                                     |                       | 1.47 N {150 gf}      | B3F-1062                | –                    |
|                       |                                                                                     | 9.5 mm                | 0.98 N {100 gf}      | B3F-1070                | –                    |
|                       |                                                                                     |                       | 1.47 N {150 gf}      | B3F-1072-N              | –                    |
|                       |                                                                                     |                       | 2.55 N {260 gf}      | B3F-1075                | –                    |
|                       |  | 7.3 mm                | 0.98 N {100 gf}      | B3F-1050                | B3F-1150             |
|                       |                                                                                     |                       | 1.47 N {150 gf}      | B3F-1052                | B3F-1152             |
|                       |                                                                                     |                       | 2.55 N {260 gf}      | B3F-1055                | B3F-1155             |
|                       |                                                                                     |                       | 4.9 N {50 gf}        | B3F-1056                | –                    |
|                       |  | 4.3 mm                | 1.76 N {180 gf}      | B3F-1002-G              | B3F-1102-G           |
|                       |                                                                                     | 5.0mm                 |                      | B3F-1022-G              | B3F-1122-G           |
|                       |                                                                                     | 7.0mm                 |                      | B3F-1062-G              | –                    |
|                       |                                                                                     | 9.5mm                 |                      | B3F-1072-G              | –                    |
|                       |  | 7.3mm                 | 1.76N (180gf)        | B3F-1052-G              | –                    |

## 6 x 6 mm Models

| Type                | Plunger                                                                           | Height  | Operating force (of) | Bags (100 Switches)     |                      |
|---------------------|-----------------------------------------------------------------------------------|---------|----------------------|-------------------------|----------------------|
|                     |                                                                                   |         |                      | Without ground terminal | With ground terminal |
| Vertical (B3F-3000) |  | 3.15 mm | 0.98 N {100 gf}      | –                       | B3F-3100             |
|                     |                                                                                   |         | 1.47 N {150 gf}      | –                       | B3F-3102             |
|                     |                                                                                   |         | 2.55 N {260 gf}      | –                       | B3F-3105             |
|                     |                                                                                   | 3.85 mm | 0.98 N {100 gf}      | –                       | B3F-3120             |
|                     |                                                                                   |         | 1.47 N {150 gf}      | –                       | B3F-3122             |
|                     |                                                                                   |         | 2.55 N {260 gf}      | –                       | B3F-3125             |
|                     | Flat, high reliability gold plated                                                | 3.85mm  | 1.76N {180gf}        | -                       | B3F-3122-G           |
|                     |  | 6.15 mm | 0.98 N {100 gf}      | –                       | B3F-3150             |
|                     |                                                                                   |         | 1.47 N {150 gf}      | –                       | B3F-3152             |
|                     |                                                                                   |         | 2.55 N {260 gf}      | –                       | B3F-3155             |

**Note:** Switches are sold in units of 100 Switches. Orders must be made in multiples of 100 (the quantity per bag).

## 12 x 12 mm Models

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

**Note:** Switches are sold in units of 100 Switches. Orders must be made in multiples of 100 (the quantity per bag).

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

| Type                | Plunger   | Height | Operating force 0.98 N {100 gf} |                      | Operating force 1.47 N {150 gf} |                      |
|---------------------|-----------|--------|---------------------------------|----------------------|---------------------------------|----------------------|
|                     |           |        | Without ground terminal         | With ground terminal | Without ground terminal         | With ground terminal |
| Standard (B3F-6000) | Flat      | 4.3 mm | B3F-6000                        | B3F-6100             | B3F-6002                        | B3F-6106             |
|                     |           | 5.0 mm | B3F-6020                        | B3F-6120             | B3F-6022                        | B3F-6122             |
|                     | Projected | 7.3 mm | B3F-6050                        | B3F-6150             | B3F-6052                        | B3F-6152             |

**Note:** Switches are sold in units of 1,000 Switches. Orders must be made in multiples of 1,000. Switches are not sold individually.

## ■ Accessories (Order Separately)

Special Key Tops are available for projected plunger models.

## Specifications

### ■ Rating/Characteristics

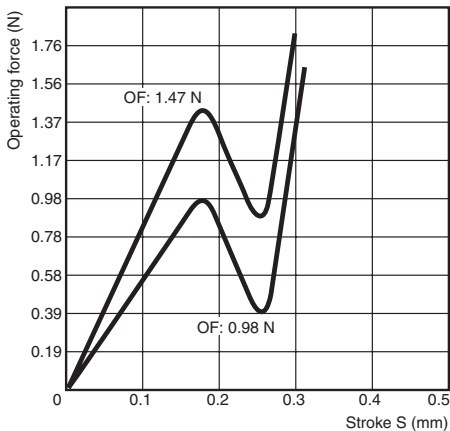
|                       |                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switching capacity    | 1 to 50 mA, 5 to 24 VDC (resistive load), 100μ to 50 mA, 5 to 24 VDC for B3F-G series                                                                                                                                                                                                                                                                                                                      |
| Ambient temperature   | -25°C to 70°C, at 60% maximum (with no icing)                                                                                                                                                                                                                                                                                                                                                              |
| Ambient humidity      | 35% to 85% (for +5° to 35°C)                                                                                                                                                                                                                                                                                                                                                                               |
| Contact form          | SPST-NO                                                                                                                                                                                                                                                                                                                                                                                                    |
| Contact resistance    | 100 mΩ max. (initial value) (rated: 1 mA, 5 VDC), 100μA, 5 VDC for B3F-G series                                                                                                                                                                                                                                                                                                                            |
| Insulation resistance | 100 MΩ 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.                                                                                                                                                                                                                                                                                            |
| Life expectancy       | B3F-1000, B3F-3000, B3F-6000:<br>1,000,000 operations min (OF: 0.98 N) (B3F-1070: 500,000 operations min)<br>300,000 operations min (OF: 1.47 N)<br>100,000 operations min (OF: 2.55 N)<br>50,000 operations min (OF: 4.9 N)<br>B3F-4000:<br>3,000,000 operations min (OF: 1.28 N)<br>1,000,000 operations min (OF: 2.55 N)<br>B3F-5000:<br>10,000,000 operations min.<br>B3F-G:<br>300,000 operations min |
| Weight                | 6 x 6 mm models: approx. 0.25 g<br>12 x 12 mm models (standard types): approx. 0.85 g<br>Radial models: approx. 0.25 g                                                                                                                                                                                                                                                                                     |

### ■ Operating Characteristics

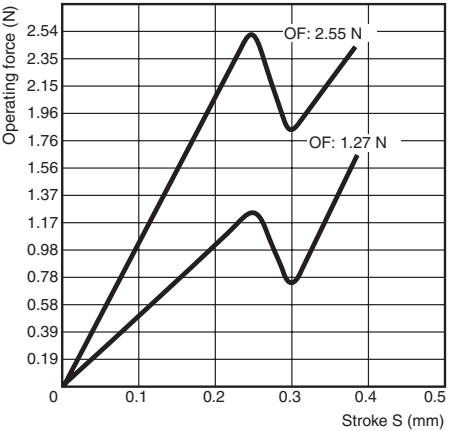
| Operating force (OF) | B3F-1000, B3F-3000, B3F-6000     |                                  |                            |                           | B3F-4000,                   | B3F-5000                   | B3F-G                    |
|----------------------|----------------------------------|----------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|--------------------------|
|                      | 0.98 N                           | 1.47 N                           | 2.55 N                     | 4.9 N                     | 1.27 N                      | 2.55 N                     | 1.76N                    |
|                      | B3F-1□□□<br>B3F-3□□□<br>B3F-6□□□ | 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        | B3F-4□□5                   | B3F-1□□2-G<br>B3F-3□□2-G |
| Operating force (OF) | 0.98±0.29 N<br>{100±30 gf}       | 1.47±0.49 N<br>{150±50 gf}       | 2.55±0.69 N<br>{260±70 gf} | 4.9±1. 47N<br>{100±30 gf} | 1.27±0.49 N<br>{130±50 gf}  | 2.55±0.69 N<br>{260±70 gf} | 1.76±0.49N<br>{180±50gf} |
| Relapsing force (RF) | 0.2 N<br>{20 gf} min.            | 0.49 N<br>{50 gf} min.           | 0.49 N<br>{50 gf} min.     | 0.7 N<br>{70 gf} min.     | 0.29 N<br>{30 gf} min.      | 0.49 N min.<br>{50 gf}     | 0.49N<br>{50gf}          |
| Pretravel (PT)       | 0.25 <sup>+0.2/-0.1</sup> mm     |                                  |                            |                           | 0.3 <sup>+0.2/-0.1</sup> mm |                            | 0.25 +0.2/<br>-0.1mm     |

Engineering Data

Operating Force vs. Stroke (Typical)  
B3F-1000, -3000, -6000



B3F-4000, -5000



## Dimensions

**Note 1.** All units are in millimetres unless otherwise indicated. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

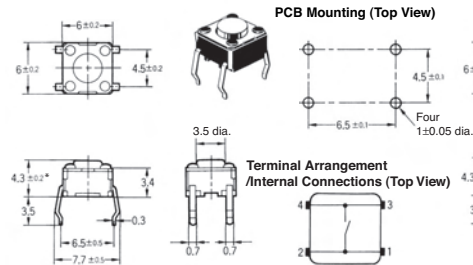
- Note 2.** No terminal numbers are indicated on the Switches. The numbers used for terminals in the following graphics are indicated in the "Bottom View" diagram below. In this diagram, the Switch is rotated so that the terminals are on the right and left-hand sides, and the OMRON logo appears the right way up.



### 6 x 6 mm Models

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

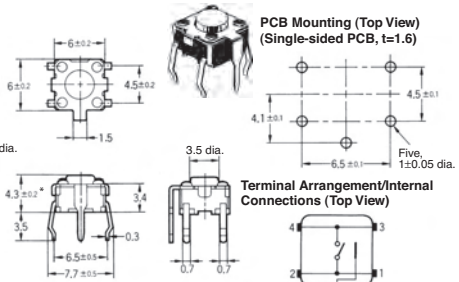
**B3F-1000, B3F-1002, B3F-1005, B3F-1006**  
**B3F-1020 (See note.), B3F-1022 (See note.),**  
**B3F-1025 (See note.), B3F-1026 (See note.)**  
**B3F-1002-G, B3F-1022-G (see note.)**



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

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

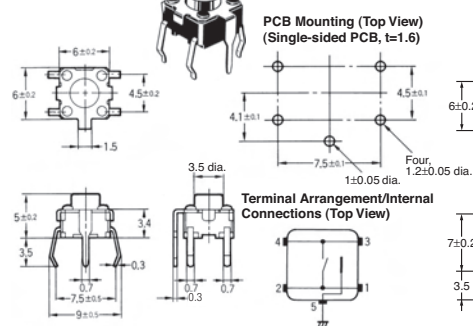
**B3F-1100, B3F-1102, B3F-1105**  
**B3F-1120 (See note.), B3F-1122 (See note.)**  
**B3F-1125 (See note.) B3F-1102-G, B3F-1122-G (see note.)**



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

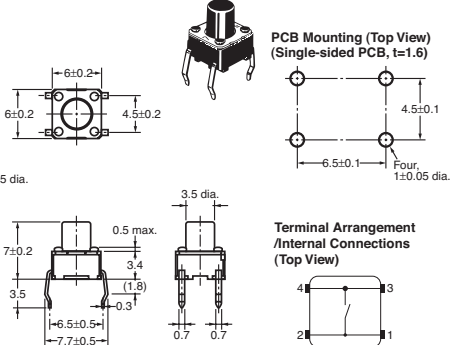
#### Horizontal, Flat Plunger Type (with Ground Terminal, Pitch: 7.5 mm)

**B3F-1110**



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

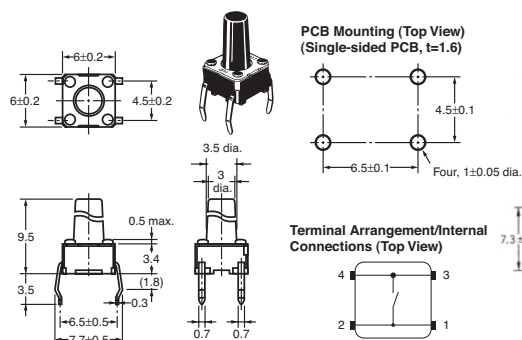
**B3F-1060, B3F-1062, B3F-1062-G**



## Tactile Switch – B3F

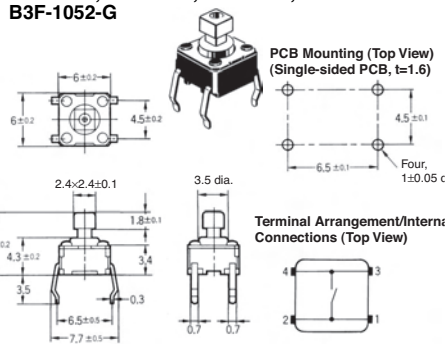
### Horizontal, Flat Plunger Type (without Ground Terminal)

B3F-1070, B3F-1072-N, B3F-1075, B3F-1072-G



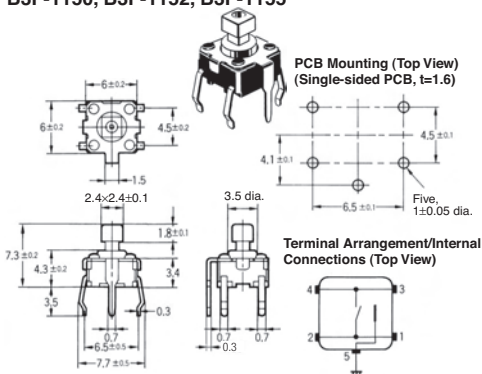
### Horizontal, Projected Plunger Type (without Ground Terminal)

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



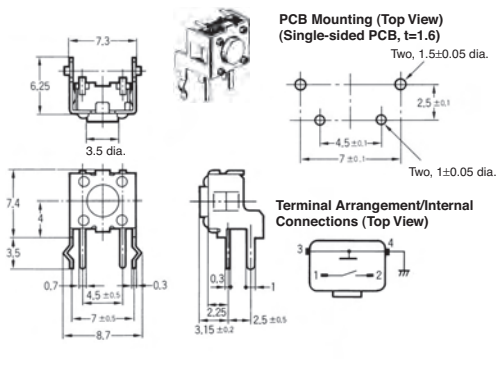
### Horizontal, Projected Plunger Type (with Ground Terminal)

B3F-1150, B3F-1152, B3F-1155



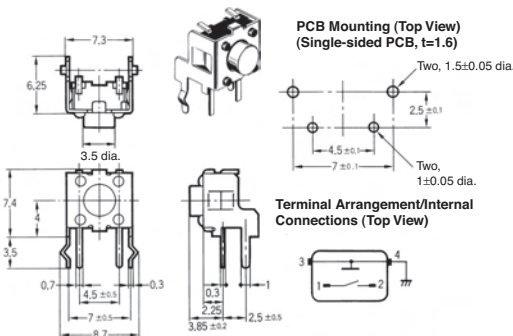
### Vertical, Flat Plunger Type

B3F-3100, B3F-3102, B3F-3105



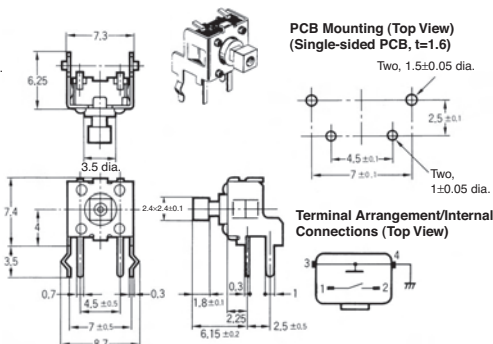
### Vertical, Flat Plunger Type (Height: 3.85 mm)

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



### Vertical, Projected Plunger Type

B3F-3150, B3F-3152, B3F-3155

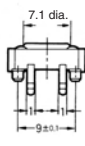
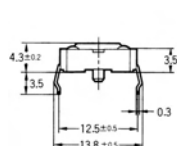
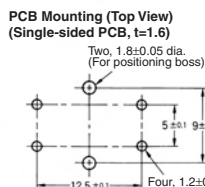
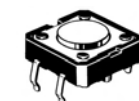
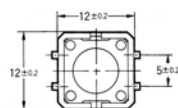


# Tactile Switch – B3F

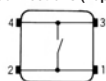
## 12 x 12 mm Models

### Flat Plunger Type (without Ground Terminal)

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

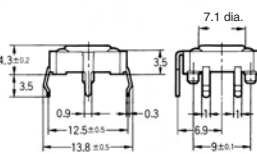
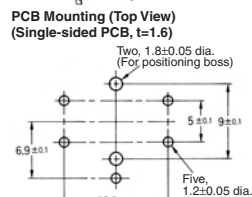
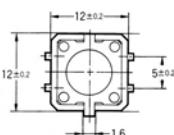


### Terminal Arrangement/Internal Connections (Top View)

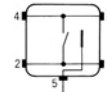


### Flat Plunger Type (with Ground Terminal)

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

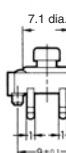
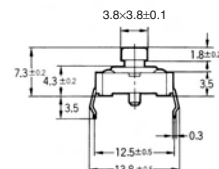
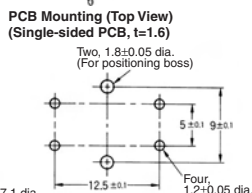
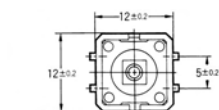


### Terminal Arrangement/Internal Connections (Top View)

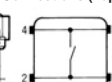


### Projected Plunger Type (without Ground Terminal)

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

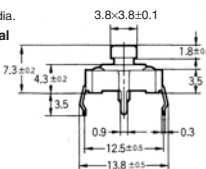
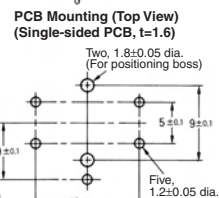
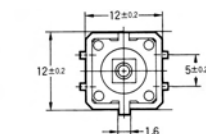


### Terminal Arrangement/Internal Connections (Top View)

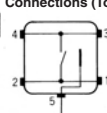


### Projected Plunger Type (with Ground Terminal)

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

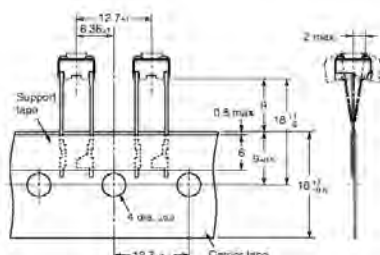
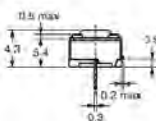
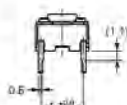
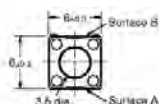
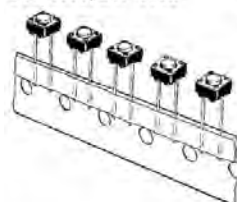


### Terminal Arrangement/Internal Connections (Top View)



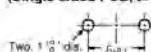
6 mm x 6 mm Radial Types (Taping Specifications): Sold in Units of 1,000 Switches

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



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

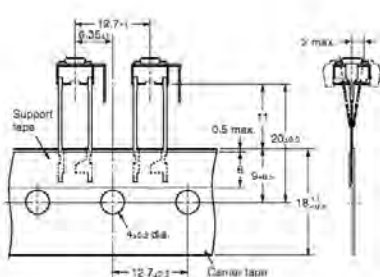
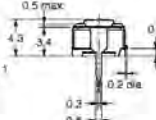
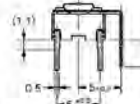
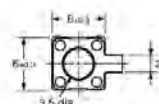
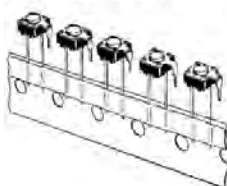
PCB Mounting  
(Top View)  
(Single-sided PCB, t=1.6)



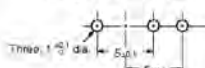
Terminal Arrangement  
/Internal Connections  
(Top View)



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



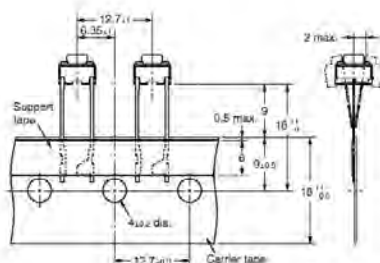
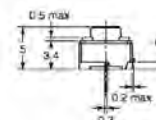
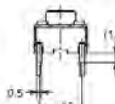
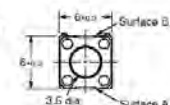
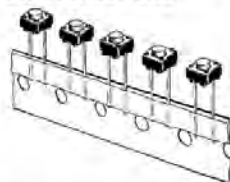
PCB Mounting  
(Top View)  
(Single-sided PCB, t=1.6)



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.

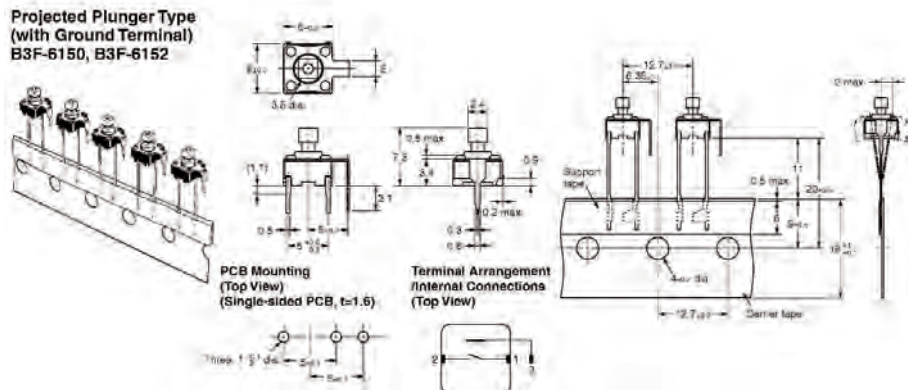
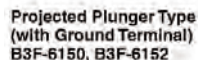
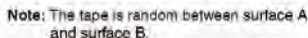
PCB Mounting  
(Top View)  
(Single-sided PCB, t=1.6)



Terminal Arrangement  
/Internal Connections  
(Top View)



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



B32-series Special Key Tops are available for projected plunger models.