

Miniature, Space-Saving Tactile Switch Provides Long Service Life and Easy Mounting

- Extended mechanical/electrical service life:
10 x 10⁶ operations for 12 x 12 mm type and
1 x 10⁶ operations for the 6 x 6 mm type
- Ideal for applications such as audio, office and communications equipment, measuring instruments, TVs, VCRs, etc.
- Taped radial type, vertical type, high force type, and gold-plated contact type are available as series versions
- Flux-tight base structure allows automatic soldering of the tactile switches onto a PC board



Ordering Information

- **B3F-1□□□, B3F-3□□□**
6 x 6 mm type

Type	Plunger	Switch height x pitch	Operating Force	Part number			
				Without ground terminal		With ground terminal	
				Bags	Sticks*	Bags	Sticks*
Standard		4.3 x 6.5 mm	General-purpose: 100 g	B3F-1000	B3F-1000S	B3F-1100	B3F-1100S
			150 g	B3F-1002	B3F-1002S	B3F-1102	B3F-1102S
			High-force: 260 g	B3F-1005	B3F-1005S	B3F-1105	B3F-1105S
		5.0 x 6.5 mm	General-purpose: 100 g	B3F-1020	B3F-1020S	B3F-1120	B3F-1120S
			150 g	B3F-1022	B3F-1022S	B3F-1122	B3F-1122S
			High-force: 260 g	B3F-1025	B3F-1025S	B3F-1125	B3F-1125S
		5.0 x 7.5 mm	General-purpose: 100 g	—	—	B3F-1110	—
			General-purpose: 150 g	B3F-1050	B3F-1050S	B3F-1150	B3F-1150S
			150 g	B3F-1052	B3F-1052S	B3F-1152	B3F-1152S
			High-force: 260 g	B3F-1055	B3F-1055S	B3F-1155	B3F-1155S
Vertical		3.15 mm	General-purpose: 100 g	—	—	B3F-3100	—
			150 g	—	—	B3F-3102	—
			High-force: 260 g	—	—	B3F-3105	—
		3.85 mm	General-purpose: 100 g	—	—	B3F-3120	—
			150 g	—	—	B3F-3122	—
			High-force: 260 g	—	—	B3F-3125	—
		6.15 mm	General-purpose: 100 g	—	—	B3F-3150	—
			150 g	—	—	B3F-3152	—
			High-force: 260 g	—	—	B3F-3155	—

* Number of switches per stick: Without ground terminal 90/stick
With ground terminal 75/stick

Important note: Switches cannot be water-washed.

■ B3F-4□□□, B3F-5□□□

12 x 12 mm type

Type	Plunger	Switch height x pitch	Operating Force	Part number			
				Without ground terminal		With ground terminal	
				Bags	Sticks*	Bags	Sticks*
Standard	Flat 	4.3 x 12.5 mm	General-purpose: 130 g	B3F-4000	B3F-4000S	B3F-4100	B3F-4100S
			High-force: 260 g	B3F-4005	B3F-4005S	B3F-4105	B3F-4105S
	Projected 	7.3 x 12.5 mm	General-purpose: 130 g	B3F-4050	B3F-4050S	B3F-4150	B3F-4150S
			High-force: 260 g	B3F-4055	B3F-4055S	B3F-4155	B3F-4155S
Long service life	Flat 	4.3 x 12.5 mm	General-purpose: 130 g	B3F-5000	B3F-5000S	B3F-5100	B3F-5100S
	Projected 	7.3 x 12.5 mm		B3F-5050	B3F-5050S	B3F-5150	B3F-5150S
High reliability gold-plated contact	Flat 	4.3 x 12.5 mm		B3F-5001	B3F-5001S	B3F-5101	B3F-5101S
	Projected 	7.3 x 12.5 mm		B3F-5051	B3F-5051S	B3F-5151	B3F-5151S

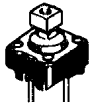
* Number of switches per stick: Without ground terminal 45/stick
With ground terminal 40/stick

Important note: Switches cannot be water-washed.

■ B3F-6□□□

Taped Radial (Auto Insertion)

6 x 6 mm type

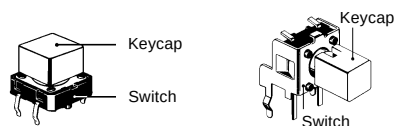
Type	Plunger	Switch height x pitch	Operating Force	Part number	
				Without ground terminal	With ground terminal
B3F-6000	Flat 	4.3 x 6.5 mm	General-purpose: 100 g	B3F-6000	B3F-6100
			High-force: 150 g	B3F-6002	B3F-6102
		5.0 x 6.5 mm	General-purpose: 100 g	B3F-6020	B3F-6120
			High-force: 150 g	B3F-6022	B3F-6122
	Projected 	7.3 x 6.5 mm	General-purpose: 100 g	B3F-6050	B3F-6150
			High-force: 150 g	B3F-6052	B3F-6152

Note: The above switches must be ordered in units of 1,000.

Important note: Switches cannot be water-washed.

■ ACCESSORIES

Keycaps



Keycap color	Applicable type:	Part number		
	Size:	6 x 6 mm	12 x 12 mm	
Light gray	4 x 4 mm	B32-1000	B32-1200	B32-1300
Black		B32-1010	B32-1210	B32-1310
Orange		B32-1020	B32-1220	B32-1320
Yellow		B32-1030	B32-1230	B32-1330
Blue		B32-1040	B32-1240	B32-1340
Green		B32-1050	B32-1250	B32-1350
White		B32-1060	B32-1260	B32-1360
Light green		B32-1070	B32-1270	B32-1370
Red		B32-1080	B32-1280	B32-1380

Note: Keycaps are available in different sizes and colors for exclusive use of the 6 x 6 mm and 12 x 12 mm projected plunger versions of Model B3F.

■ PLUNGER IDENTIFICATION TABLE

Use this table to determine tactile switch type by plunger color.

Plunger color	Operating force	Type
Light gray	100 g	B3F-1000, 1150, 3100, 6000, 6050
White	100 g	B3F-1050, 1100, 3150, 4000, 4050, 4100
Black	100 g	B3F-1020, 1110, 1120, 3120, 6020, 6120
Blue	130 g	B3F-5000 Series
Yellow	150 g	B3F-1002, 1052, 1102, 3102, 3152, 4005, 4055, 4105, 4155, 6002, 6052
Medium gray	150 g	B3F-1022, 1122, 3122, 6022
Orange	260 g	B3F-1005, 1055, 1105, 3105, 6005, 6055
Pink	260 g	B3F-1025, 1125, 3125, 6025

Specifications

■ CHARACTERISTICS

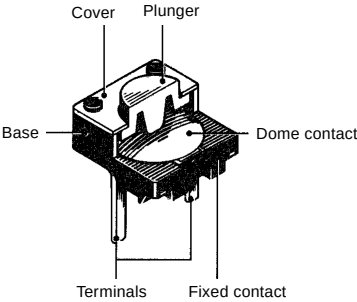
	Part number			
	B3F-1□□□ B3F-3□□□	B3F-4□□□	B3F-5□□□	B3F-6□□□
Service life (see note 1) [mechanical/electrical]	1,000,000 operations minimum	3,000,000 operations minimum	10,000,000 operations minimum	1,000,000 (300,000) operations min.
Weight (see note 2)	Approx. 0.25 g	Approx. 0.85 g		Approx. 0.25 g
Contact form	SPST-NO			
Switching capacity	50 mA 24 VDC (resistive load)			5-24 VDC, 1-50 mA
Permissible load	1 mA 5 VDC min. (resistive load)			—
Contact resistance	100 MΩ max.			
Insulation resistance	100 MΩ min. (at 250 VDC)			
Dielectric strength	500 VAC, 50/60 Hz for 1 minute			
Bounce time	5 ms max.			
Vibration	Malfunction durability: 10 to 55 Hz, 1.5 mm double amplitude			
Shock	Mechanical durability: 1,000 m/s ² (approx. 100 G) Malfunction durability: 100 m/s ² (approx. 10 G)			
Ambient temperature	-25° to 70°C (with no icing)			
Humidity	35% to 85% RH			

Note: 1. Figure in parentheses denotes the service life of high force type.
2. Denotes the weight of standard type.
3. Data shown are of initial value.

■ OPERATING CHARACTERISTICS

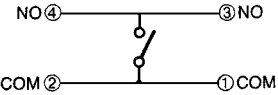
Characteristics	Part number					
	B3F-1□□□ / -3□□□		B3F-4□□□ / -5□□□		B3F-6□□□	
	General purpose type	High force type	General purpose type	High force type	General purpose type	High force type
Operating force (OF)	100 ± 30 g	150 ± 50 g	130 ± 50 g	260 ± 70 g	100 ± 30 g	150 ± 50 g
Release force (RF) min.	20 g	50 g	30 g	50 g	20 g	50 g
Pretravel (PT) max.	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	0.25 ^{+0.2} / _{-0.1} mm	0.25 ^{+0.2} / _{-0.1} mm

■ CONSTRUCTION

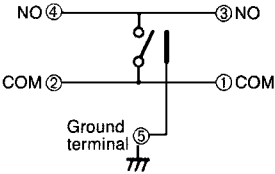


■ CONTACT FORM

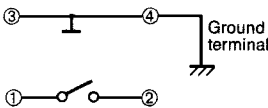
B3F-10□□
-40□□
-50□□



B3F-11□□
-41□□
-51□□



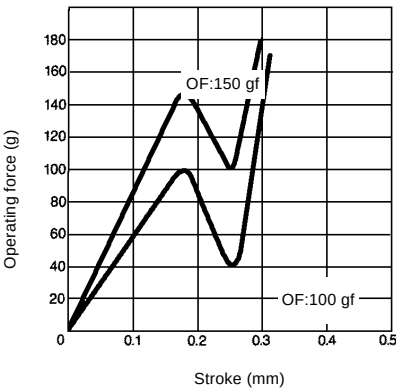
B3F-3□□□



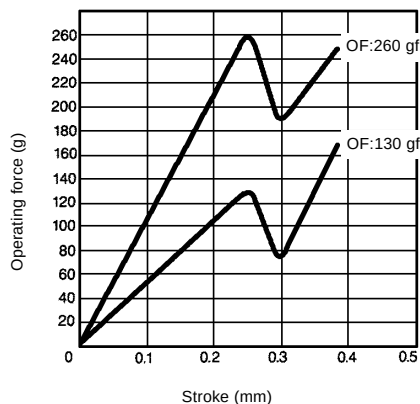
Engineering Data

■ OPERATING FORCE VS STROKE (TYPICAL EXAMPLE)

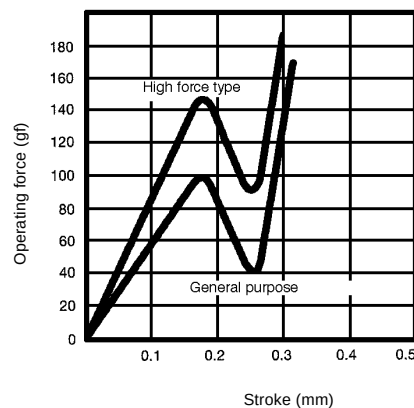
B3F-1□□□ / -3□□□



B3F-4□□□ / -5□□□



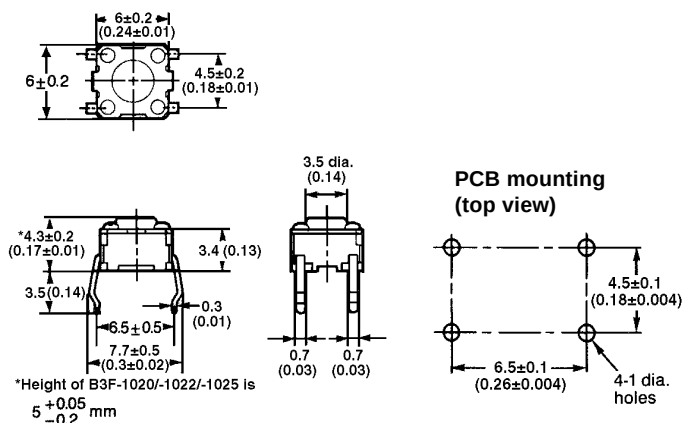
B3F-6□□□



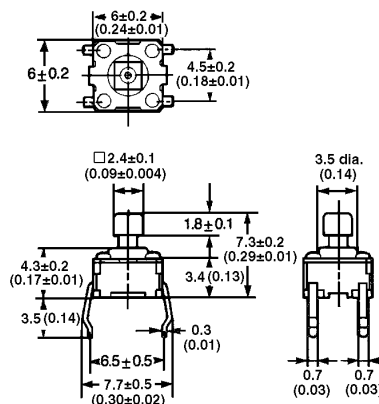
Dimensions

Unit: mm (inch)

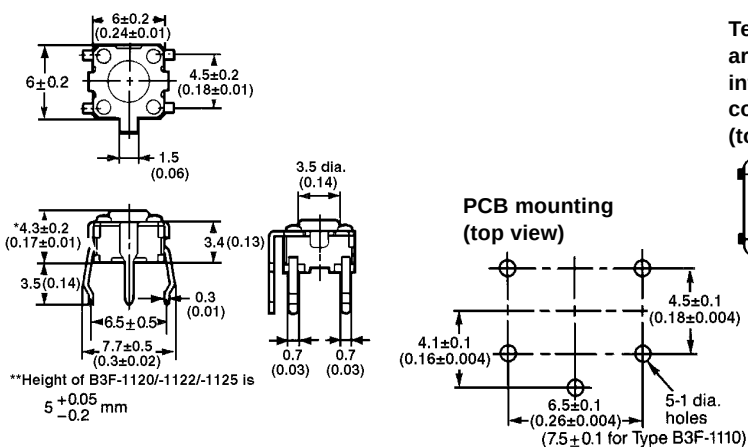
■ B3F-1000/-1002/-1005/-1020*/-1022*/-1025*



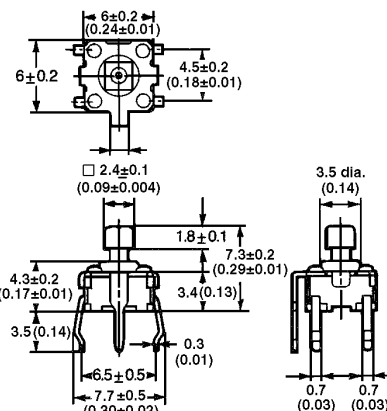
■ B3F-1050/-1052/-1055



■ B3F-1100/-1102/-1105/-1120**/-1122**/-1125**



■ B3F-1150/-1152/-1155

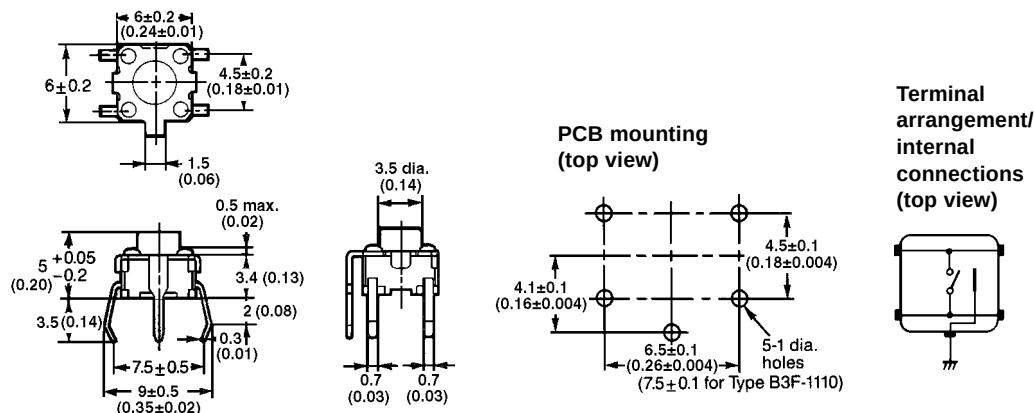


Note: Terminal numbers are not indicated on this switch. With the switch turned over so that the logo mark "OMRON" is visible on the upper part of the rear side of the switch base, the terminal on the right of the logo mark is numbered "1" and that on the bottom right is "3." Accordingly, two terminals on the left side are numbered "2" and "4" respectively.

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

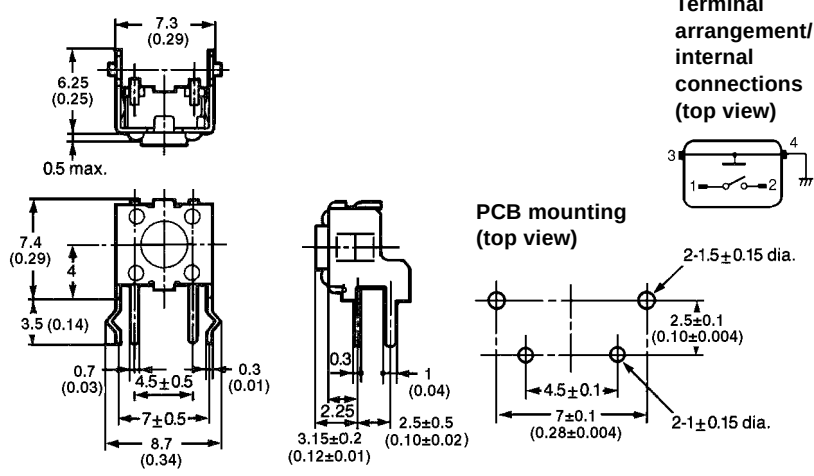
Unit: mm (inch)

■ B3F-1110

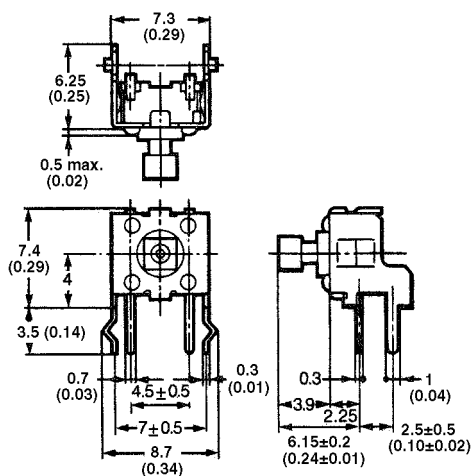


Note: Terminal numbers are not indicated on this switch. With the switch turned over so that the logo mark "OMRON" is visible on the upper part of the rear side of the switch base, the terminal on the right of the logo mark is numbered "1" and that on the bottom right is "3." Accordingly, two terminals on the left side are numbered "2" and "4" respectively.

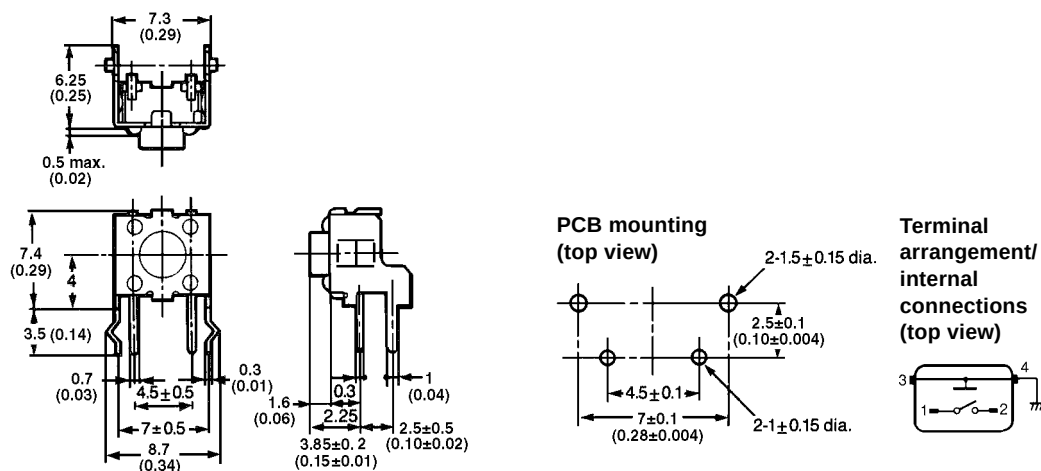
■ B3F-3100/-3102/-3105



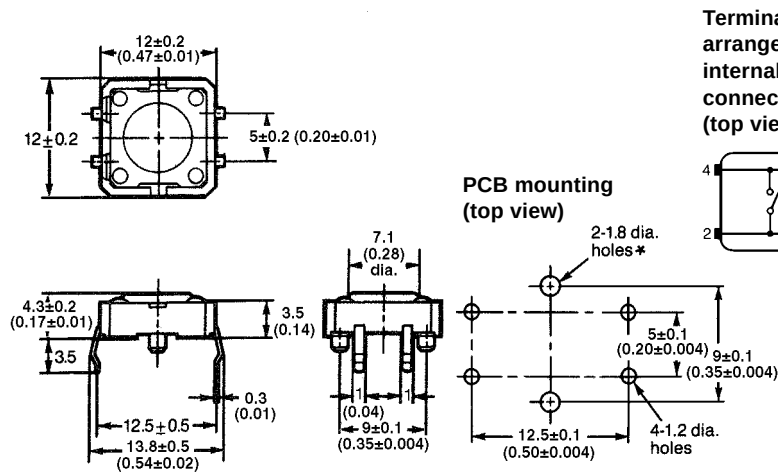
■ B3F-3150/-3152/-3155



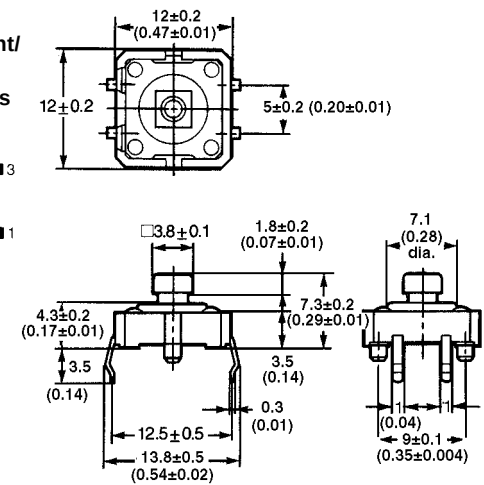
■ B3F-3120/-3122/-3125



■ B3F-4000/-5000/-4005/-5001

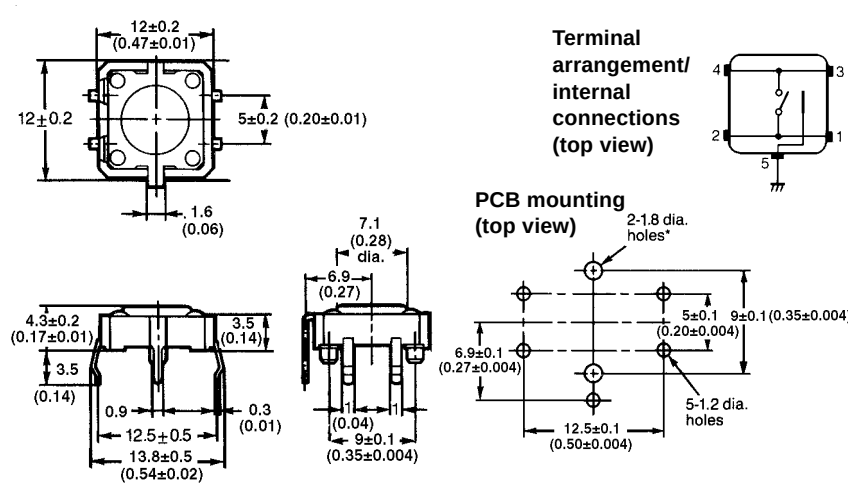


■ B3F-4050/-5050/-4055/-5051

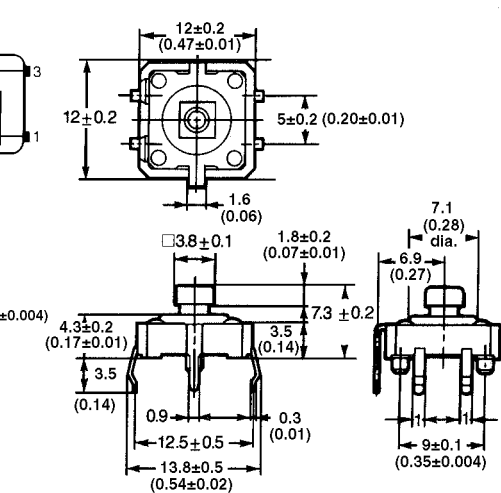


* Fit the projection of the switch into this hole to secure the switch.

■ B3F-4101/-5100/-4105/-5101

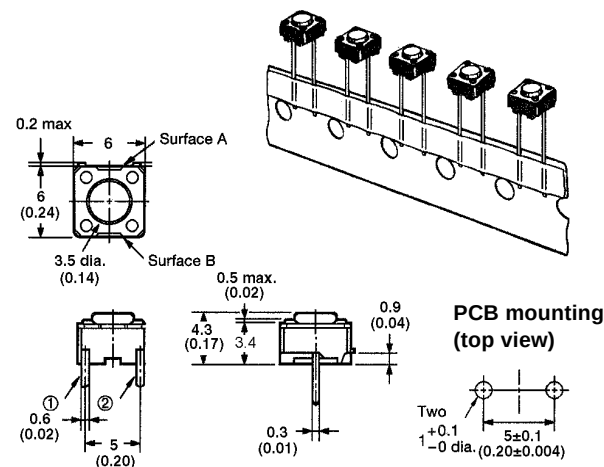


■ B3F-4150/-5150/-4155/-5151

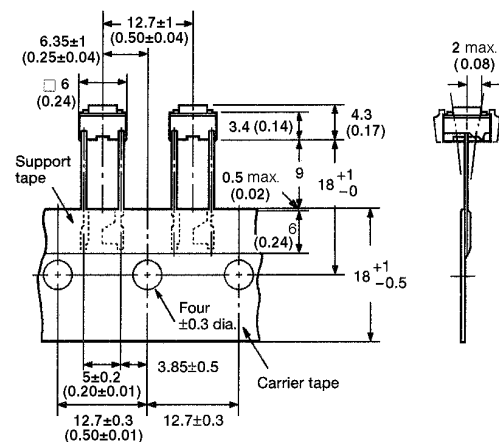


* Fit the projection of the switch into this hole to secure the switch.

■ B3F-6000/-6002



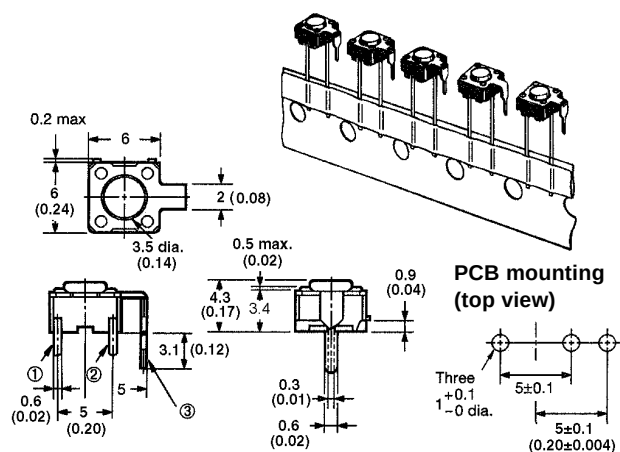
■ TAPE-PACKAGING DIMENSIONS



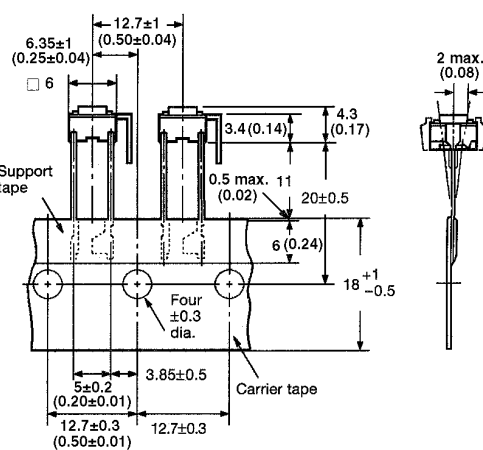
Note: The tape is random between surface A and surface B.

Unit: mm (inch)

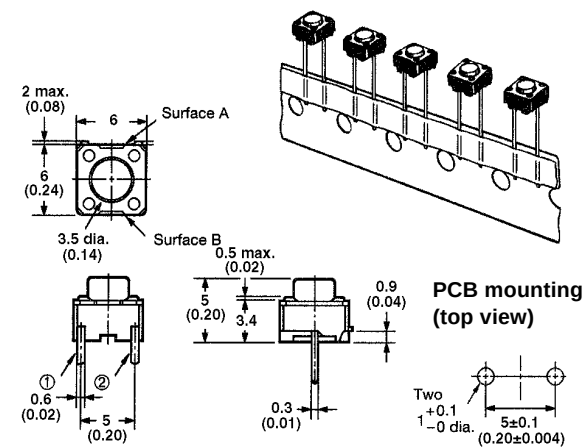
■ B3F-6100/-6102



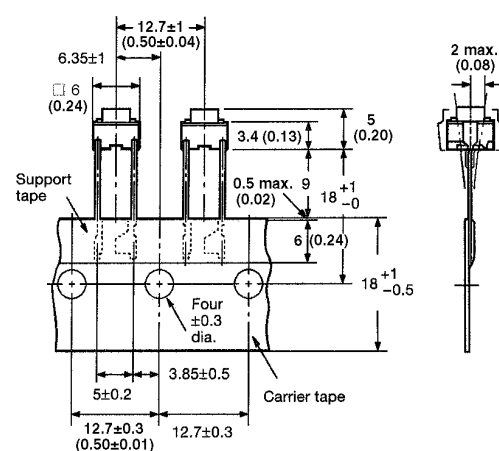
■ TAPE-PACKAGING DIMENSIONS



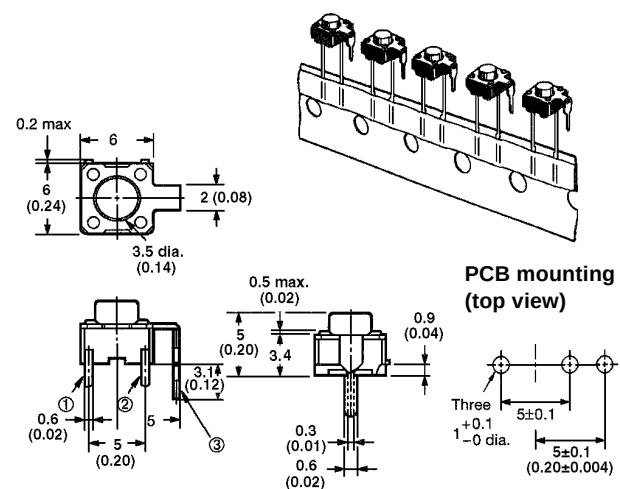
■ B3F-6020/-6022



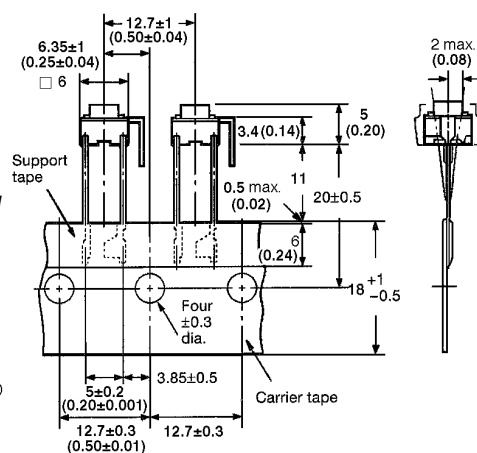
■ TAPE-PACKAGING DIMENSIONS



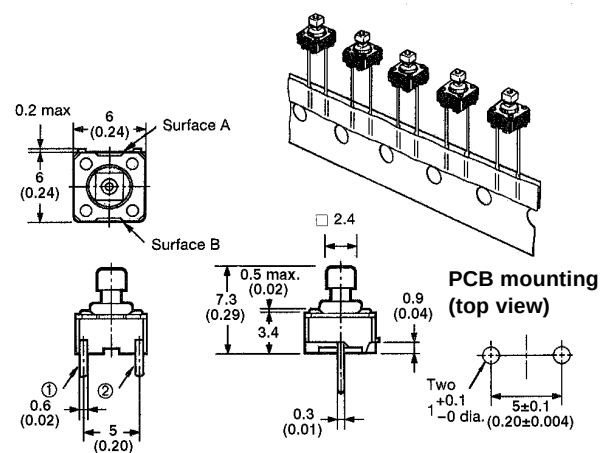
■ B3F-6120/-6122



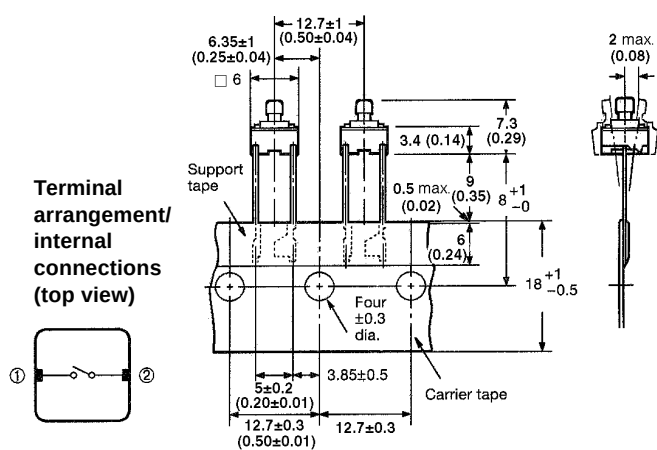
■ TAPE-PACKAGING DIMENSIONS



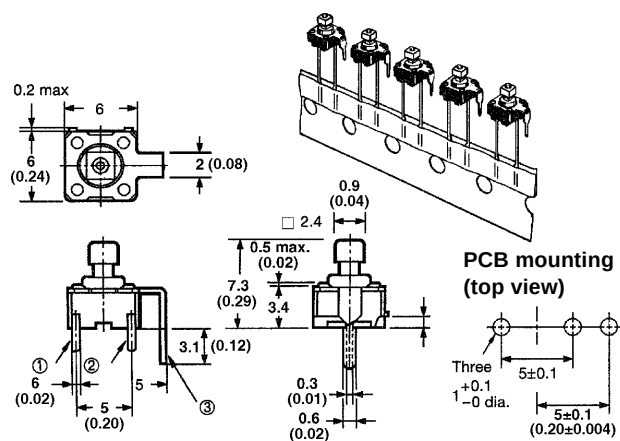
■ **B3F-6050/-6052**



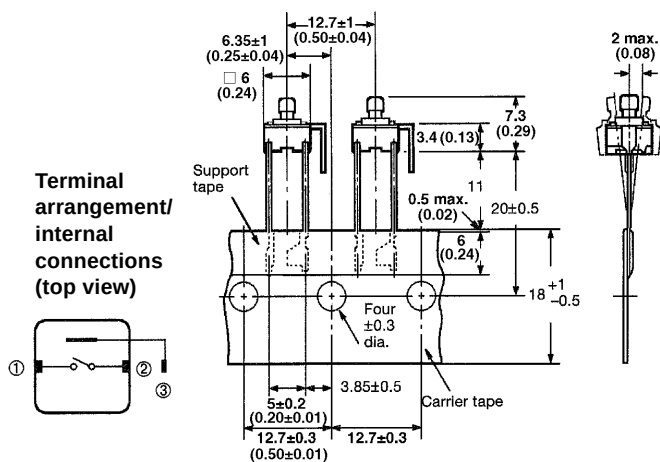
■ TAPE-PACKAGING DIMENSIONS



■ **B3F-6150/-6152**

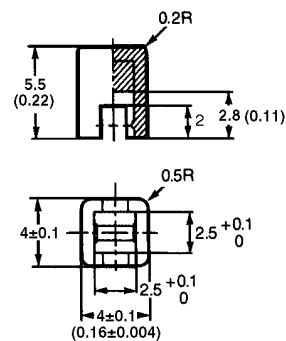


■ TAPE-PACKAGING DIMENSIONS

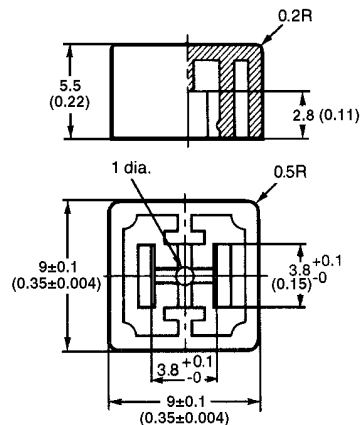


■ KEYCAPS

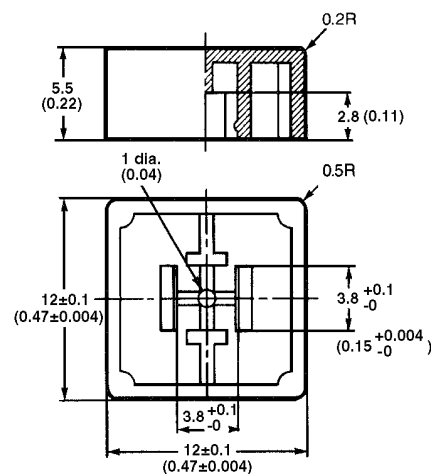
B32-10 ☐ **0**



B32-12 ☐ **0**



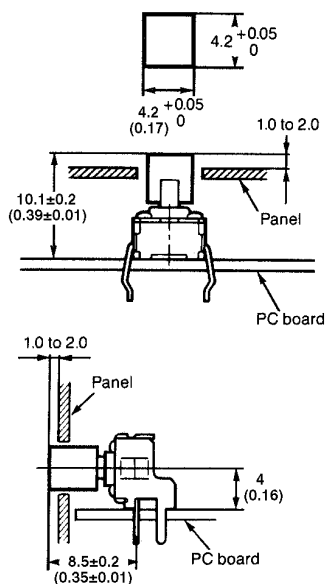
B32-130



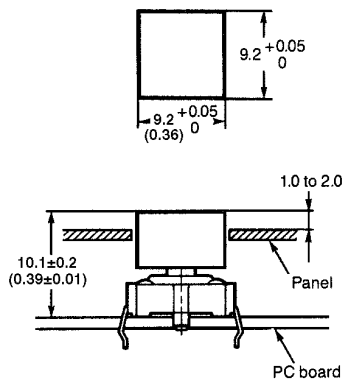
Unit: mm (inch)

■ PANEL CUTOUTS

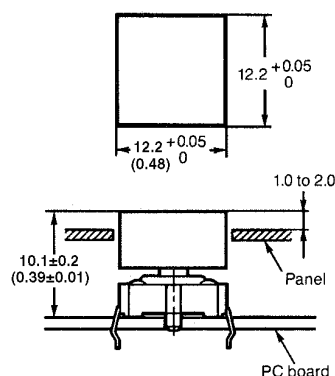
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B32-12□0



B32-13□0



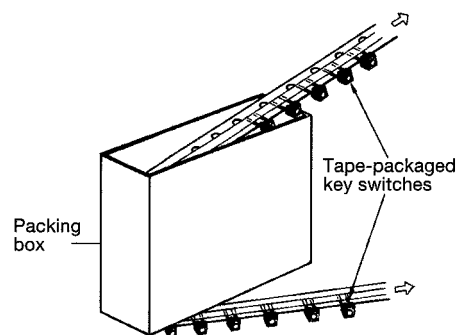
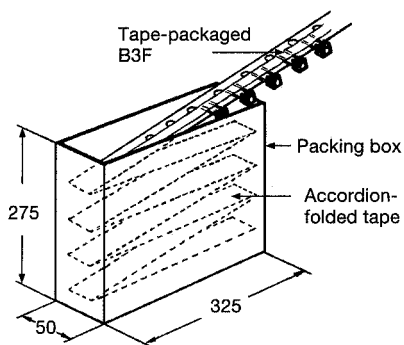
Note: 1. Unless otherwise specified, a tolerance of ± 0.2 mm applies to all dimensions.

2. Keycaps are available in different sizes and colors for exclusive use of the 6 x 6 mm and 12 x 12 mm projected plunger versions of model B3F.

Hints on Correct Use

■ TAPED RADIAL (AUTO INSERTION) PACKAGING

- Tactile switches packed on tape are placed into packing boxes as shown below.
- Number of switches per box: 1,000
- Tape may be drawn from the box either from the top or from the bottom.

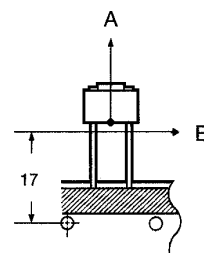


■ TAPING STRENGTH

The tactile switches will not release from the tape when pulled in directions A and B at the following forces.

A: 500 g

B: 100 g



NOTE: DIMENSIONS ARE SHOWN IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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