

Ultra-low Profile Dome Key

B3D

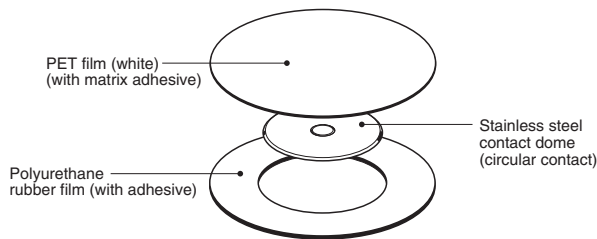
Single-key Type Added to Series of Ultra-low Profile Dome Keys

- No soldering required.
Attach directly to PCB to make an ultra-low profile tactile switch. Construction provides strong resistance to static electricity by having no soldered terminals.
- Matrix adhesive used to create highly dust-proof construction with good ventilation.
- Lower profile, lighter weight, and crisp clicking action achieved using stainless steel contact dome.
- OMRON's unique circular contact action ensures a high level of resistance to foreign particles.



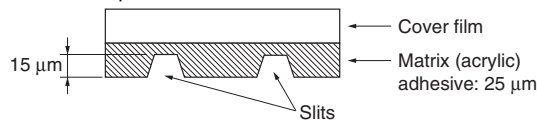
RoHS Compliant (Refer to page 8 for details.)

Structure



Matrix Adhesive

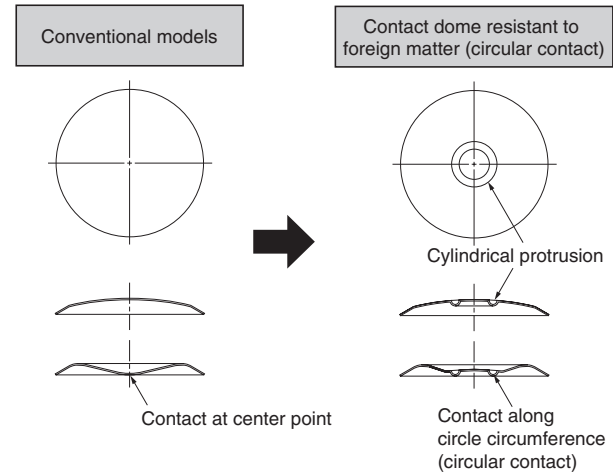
The surface structure of this adhesive has grid-shaped slits, as shown in the following cross-sectional diagram. These slits provide both ventilation and dust-proofing, which is required for contact dome operation.



Circular Contact

When Dome Keys are attached to the PCB, any PCB dust or foreign particles will tend to collect in the center of the key when it is pressed. Therefore, poor contact occurs easily in keys that provide contact at the center point only.

The circular contact construction provides contact along the circumference of a circle, thus preventing poor contact by avoiding the center point.



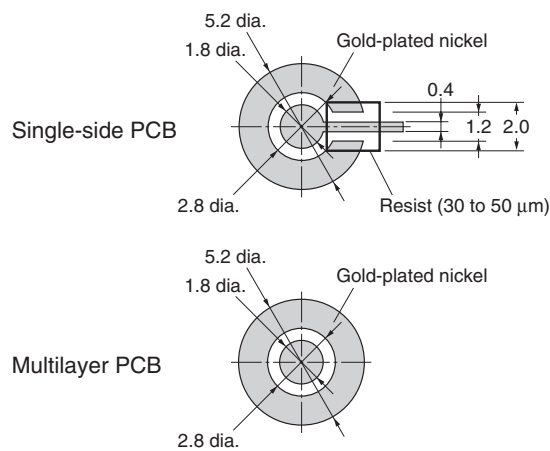
■ Specifications

Item	Model	B3D-4112	B3D-5112
Diameter		4-mm dia.	5-mm dia.
Operating force (OF)		1.67 ±0.49 N (170 ±50 gf)	
Releasing force (RF)		0.2 N min.	
Pretravel (PT)		0.2 ±0.1 mm	
Height		0.3 ±0.1 mm	
Life expectancy		500,000 operations min.	1,000,000 operations min.
Switching capacity		10 mA, 12 VDC (resistive load) (recommended min. load: 1 mA, 3 VDC (resistive load))	
Ambient operating temperature		-40 to 80°C at 60% max. humidity (with no icing or condensation)	
Ambient storage humidity		10% to 90% (at 40°C max.)	
Material		Stainless steel	
Plating		Silver	

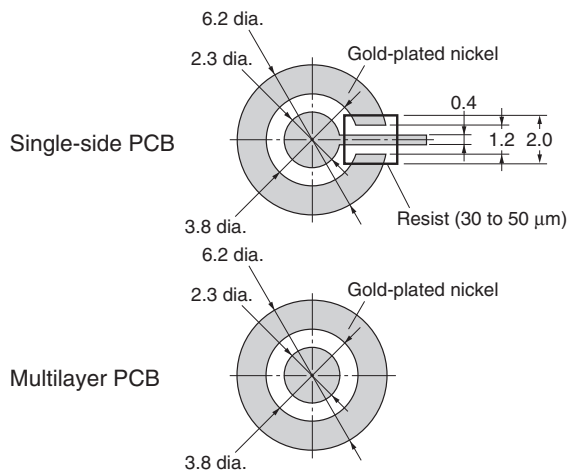
Note: The Dome Keys are sold only in units of 25 Dome Keys per sheet. Orders must be made in integral multiples of this quantity.

■ Recommended Contact Form on PCB

4-mm-diameter Dome Key (B3D-4112)

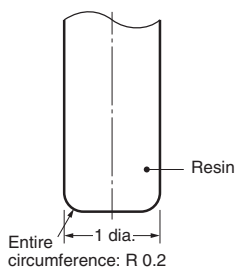


5-mm-diameter Dome Key (B3D-5112)

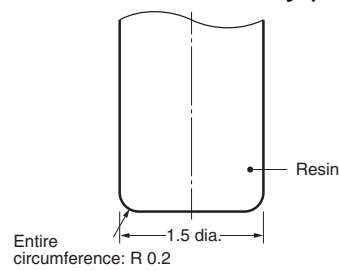


■ Recommended Operating Part Form

4-mm-diameter Dome Key (B3D-4112)



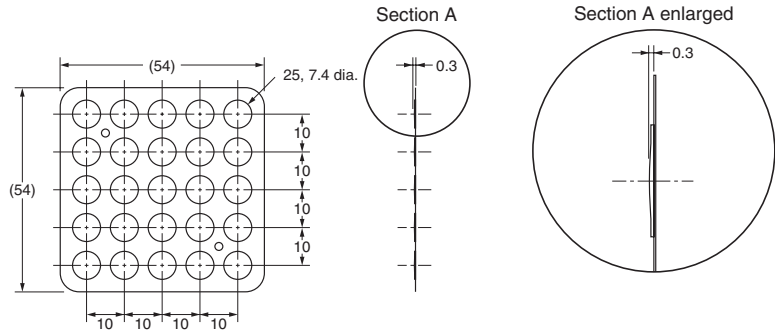
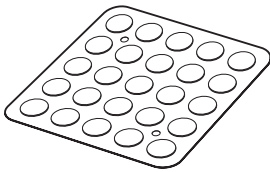
5-mm-diameter Dome Key (B3D-5112)



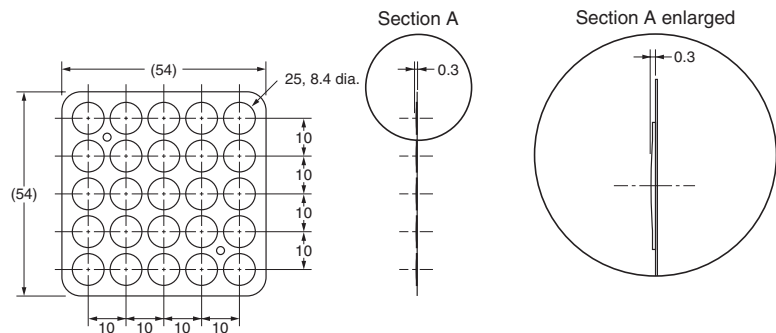
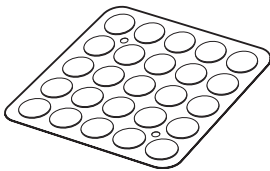
Dimensions

Note: All units are in millimeters unless otherwise indicated. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

B3D-4112



B3D-5112



Precautions

Be sure to read the precautions common to all Tactile Switches on pages 5 to 7 for correct use.

■ Precautions for Correct Use

Attaching to the PCB

Remove the Dome Key from the sheet using tweezers or a vacuum pick-up tool, and attach it above the contact on the PCB surface, which has been wiped clean in advance. Press down on the top surface using an elastic material, such as urethane rubber, and a force of 2.94 to 4.9 N. Place a positioning mark (circle) on the PCB for easy positioning.

Make sure that the position of the Dome Key is aligned correctly before use. Significant misalignment may result in short-circuits or reduced sensitivity.

Note: The recommended vacuum pick-up tool is the Hozan P-835 Vacuum Pick with an M suction pad (7-mm dia.).

Do not reuse a B3D Dome Key that has been detached from the PCB. Attach a new Dome Key to the PCB.

Do not touch the contact dome with bare hands, or with unclean gloves. Doing so may damage the contact dome, which is the part that comes in contact with the PCB.

Reflow Soldering

The Dome Key cannot withstand heat from reflow soldering. Always perform reflow soldering before attaching the Dome Key to the PCB.

Washing

Do not wash the Dome Key. The Dome Key is not water-resistant and must not be exposed to water or other liquids.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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