

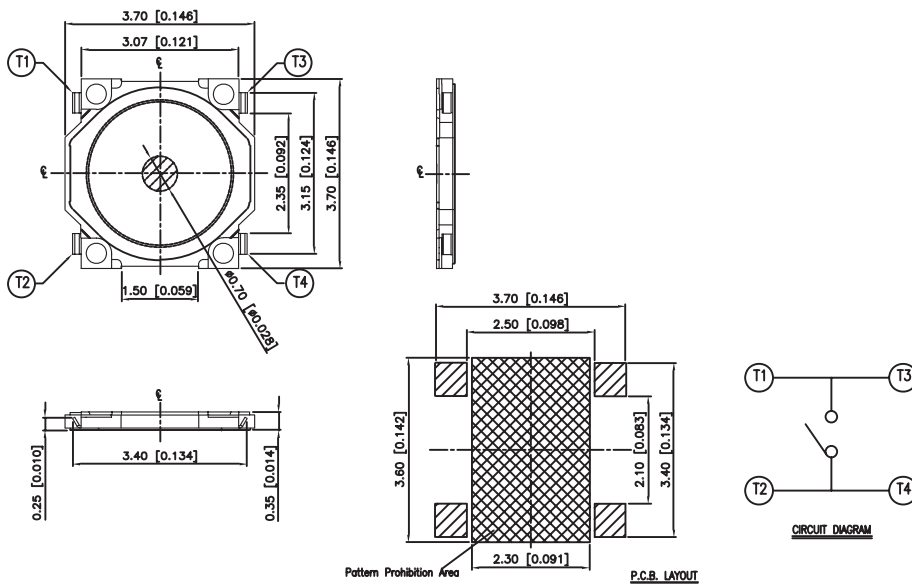
Tactile Switch

Specification

General tolerances : $\pm 0.2\text{mm}$
 Mechanical
 Operating Force : $160\pm 50\text{gf}$, $235\pm 60\text{gf}$
 Life : 160g, 500, 000 Cycles
 Electrical
 Switch Rating : 50mA 12V DC
 Contact Resistance : $100\text{m}\Omega$ Max.
 Insulation Resistance : 100V DC $100\text{M}\Omega$

**RoHS
Compliant**

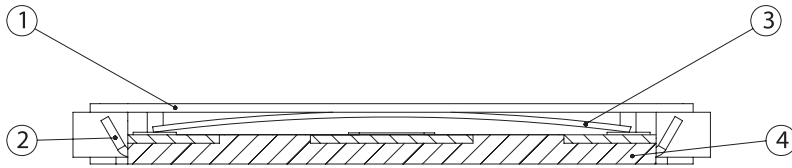
Diagram



Dimensions : Millimetres (Inches)

Item	Description	Q'ty	Materials	Treatment
1	Adhesive Tape	1	Kapton	None
2	Terminal		Phosphor Bronze	With Silver Plating
3	Contact		Stainless Steel	With Silver Cladding
4	Base		High - Temp Thermoplastic LCP UL94V - 0	Molded Black

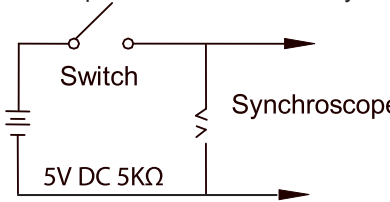
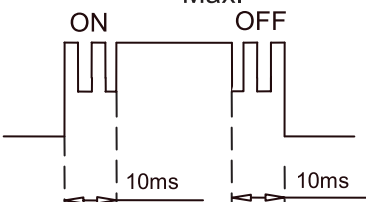
Tactile Switch




1. Style

This specification describes "TACTILE SWITCH", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

- 1.1 Operating Temperature Range: -40°C+85°C
- 1.2 Storage Temperature Range(Single condition) : -40°C+85°C
- 1.3 Storage Temperature Range(Taping condition) : -20°C~+60°C
- 1.3 The shelf life of product is within 6 months.
- 2. **Current Range:** 50mA , 12 V DC
- 3. **Type of Actuation:** Tactile feedback
- 4. **Test Sequence:**

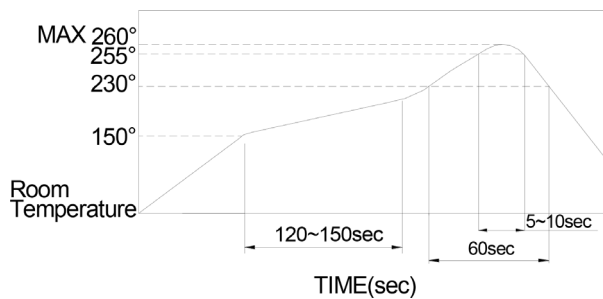
Item	Description	Test Conditions	Requirements
Appearance			
1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
Electric Performance			
2	Contact Resistance	Applying a static load 1.5~2 times the operating force to the center made with a 1 kHz small current contact resistance meter.	100mΩ Max.(Initial)
3	Insulation Resistance	Measurements shall be made following application of 100 V DC potential across terminals and cover for 1 minute ±5 seconds.	100MΩ Min.
4	Dielectric Withstanding Voltage	100V AC(50Hz or 60Hz) shall be applied across terminals and cover for 1 minute	There shall be no breakdown or flashover
5	Bounce	3 to 4 operations at a rate of 1 cycles per second 	10 m seconds Max. 

Tactile Switch

Mechanical Performance			
6	Operation Force	Applied in the direction of operation. 	MPT3BL-03-Q-T/R
			MPT3BL-05-Q-T/R
			OF
			160g±50g (1.57N±.49N)
			235g±60g (2.30N±0.59N)
7	Stroke	Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the stem, the stroke distance for the stem to come to a stop shall be measured.	0.15±0.1mm
8	Stop Strength	Placing the switch such that the direction of switch operation is vertical, a static load of 3 kgf(29.4N) shall be applied in the direction of stem operation for a period of 15 seconds	As shown in item 4~6
9	Solder Heat Resistance	SMT Type ~MPT3BL-□□-QSeries(4/4) (PCB is 1.2mm in thickness)	1. Shall be free from pronounced backlash and falling-off or breakage terminals 2. As shown in item 4, 5 3. Contact Resistance: 200mΩ Max 4. Insulation Resistance: 10MΩ Min
10	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1) Swing distance=1.5mm 2) Frequency: 10-55-10Hz in 1-min/cycle. 3) Direction: 3 vertical directions including the directions of operation 4) Test time: 2 hours each direction	1) As shown in item 4~7 2) Contact Resistance: 200mΩ Max 3) Insulation Resistance: 10MΩ Min
11	Shock	Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F 1) Acceleration; 50G 2) Action time:11±1m seconds 3) Testing Direction: 6 sides 4) Test Cycle: 3 times in each direction	Ditto
Durability			
12	Operating Life	Measurements shall be made following the test forth below: 1) 5 mA,5 VDC resistive load 2) Applying a static load the operating force to the center of the stem in the direction of operation 3) Cycle of Operation: 500,000 cycle's Min~160gf 50,000 cycle's Min~235gf	1) As shown in item 4, 5 2) Operating force:±50% of initial force. 3) Contact Resistance: 500mΩ Max 4) Insulation Resistance: 10MΩ Min 5) Bounce: 20 m seconds Max
Weather-Proof			
13	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1)Temperature: -40±2°C 2)Time: 96 hours	1) As shown in item 4~7 2) Contact Resistance: 200mΩ Max 3) Insulation Resistance: 10MΩ Min

14	Heat Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1. Temperature:85±2°C 2. Time:96 hours	Ditto
15	Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1. Temperature:60±2°C 2. Relative Humidity:90~95% 3. Time:96 hours	Ditto

Soldering Conditions



- The condition mentioned above is the temperature on the Cu foil of the PCB surface. There are cases where board's temperature greatly differs from switch's surface be used not to allow switch's surface temperature to exceed 260°C.

- Manual Soldering

Soldering Temperature Max.350°C
 Continuous Soldering Time Max. 5 seconds

Part Number Table

Description	Part Number
Tactile Switch, 3.7mm × 3.7mm, J pin, H0.35mm, 160gf	MPT3BL-03-Q-T/R
Tactile Switch, 3.7mm × 3.7mm J pin, H0.35mm, 235gf	MPT3BL-05-Q-T/R

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