Tactile Switch
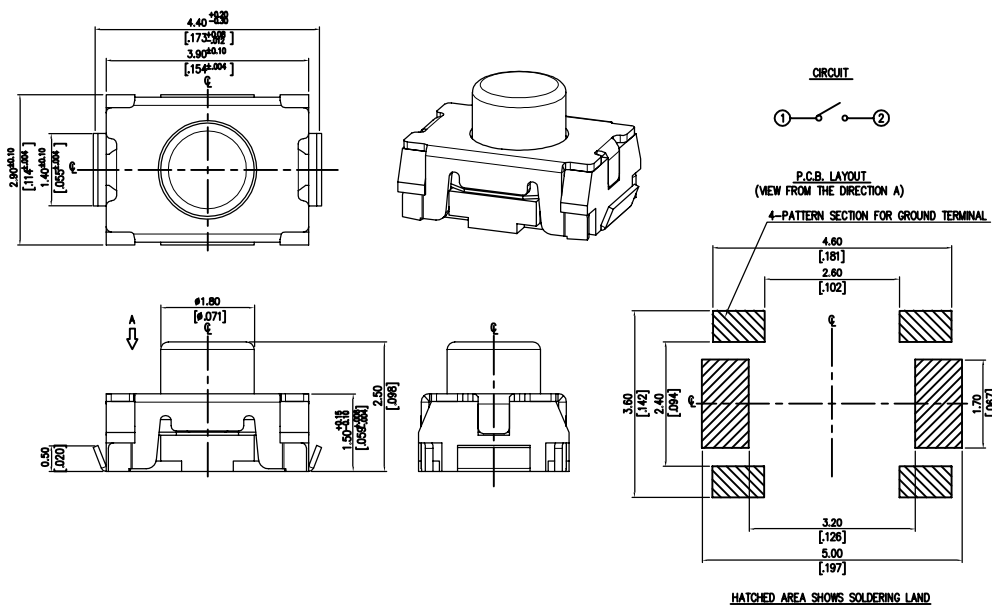
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Specification

General tolerances　　: ±0.2mm

Diagram

Dimensions : Millimetres (Inches)

Item	Description	Q'ty	Materials	Treatment
1	Cover	1	Stainless Steel	1)Ground Terminal With Silver Plating 0.2um 2)Without Ground Terminal None Plating
2	Stem		High-Temp Thermoplasitc LCP	None
3	Contact		Stainless Steel	With Silver Cladding
4	Terminal		Phosphor Bronze	With Silver Plating
5	Base		High-Temp Thermoplasitc LCP	Molded White
6	Tape		Teflon	--

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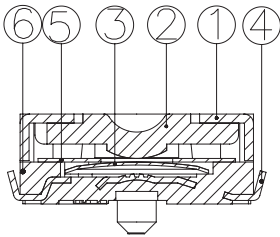
1. **Style**

This specification describes "Tactile Switch", mainly used as signal switch of Electrical devices, with the general requirements of mechanical and electrical characteristic.

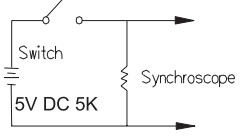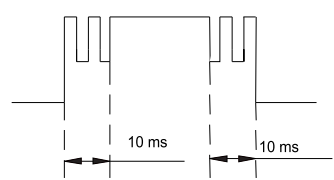1.1 Operating Temperature Range: -20°C+70°C

1.2 Storage Temperature Range : -30°C+80°C

1.3 The shelf life of product is within 6 months.

2. **Current Range**: 50mA, 12V 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 of the stem, measurements shall be made with a 1 kHz small current contact resistance meter	100mΩ Max.
3	Insulation Resistance	Measurements shall be made following application of 100V 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	Capacitance	1 MHz ±10 kHz	5 pF max.
6	Bounce	3 to 4 operations at a rate of 1 cycles per second Switch 5V DC 5K Synchroscope	10 ms Max. 10 ms 10 ms

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Mechanical Perfprmance						
7	Operating Force & Return Force	Applied in the direction of operation.	--		Side push	Vertical push
			OF		220±65gf 2.156N ±.637N	160±50gf 1.568N ±.49N
8	Stroke	Placing the switch such that the direction of switch operation is vertical and gradually increasing the load applied to the stem, the stroke distance for the stem to come to contact shall be measured	Side push: 0.2 ±0.1mm Vertical puch: 0.13±0.1mm			
9	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 item 2~7			
10	Solder Heat Resistance	SMT Type ~MPMPTLGP6-V-T/R	1. As shown in item 4~7 2. Contact Resistance: 200mΩ Max 3. Insulation Resistance: 10MΩ min 4. Bounce:w 20 ms Max			
11	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	As shown in item 2~7			
12	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	As shown in item 2~7			
Durability						
13	Operating Life	Measurements shall be made following the test forth below: 1) 5mA, 5V DC resistive load 2) Applying a static load the operating force to the center of the stem in the direction of operation Static Load = OF max. 3. Rate of Operation: 1 operation per second 4. Cycle of Operation: 100,000 cycles min.	1. Operating force:±50% of initial force 2. Contact Resistance: 200mΩ Max 3. Insulation Resistance: 10MΩ min 4. Bounce: 20 ms Max			
Weather-Proof						
14	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: -30±2°C 2)Time: 96 hours	1. As shown in item 4~7 2. Contact Resistance: 200mΩ Max 3. Insulation Resistance: 10MΩ Min 3. Bounce: 20ms max.			

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15	Heat Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1. Temperature:80±2°C 2. Time:96 hours	1. As shown in item 4~7 2. Contact Resistance: 200mΩ Max 3. Insulation Resistance: 10MΩ Min 4. Bounce: 20ms max.
16	Humidity Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1. Temperature:40±2°C 2. Relative Humidity:90~95% 3. Time:96 hours	1. As shown in item 4~7 2. Contact Resistance: 200mΩ Max 3. Insulation Resistance: 10MΩ Min 4. Bounce: 20ms max.

Soldering Conditions
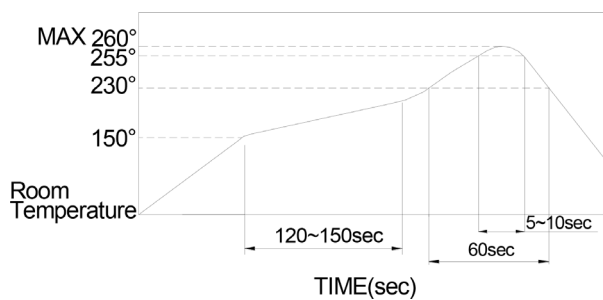
- The condition mentioned above is the temperature on the Cu foil of the PCB surface.
  There are cases where board's temperature greatly differs from switch's surface temperature depending on board's material, size, thickness, etc. Care, therefore, should be used not to allow switch's surface temperature 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, Side Push Switch, H2.5mm	MPMPTLGP6-V-T/R

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