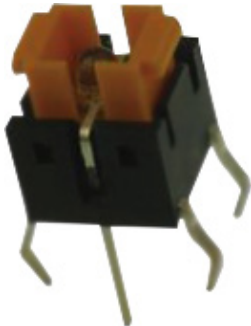


# Tactile Switch

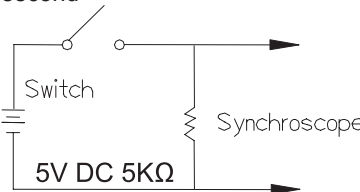
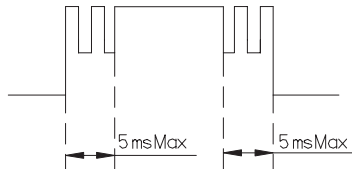

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## Specifications:

Operating Temperature Range : -25°C to +70°C  
Storage Temperature Range : -30°C to +80°C  
Current Range : 50mA, 12V DC  
The shelf life of product is within 6 months

## Test Sequence:

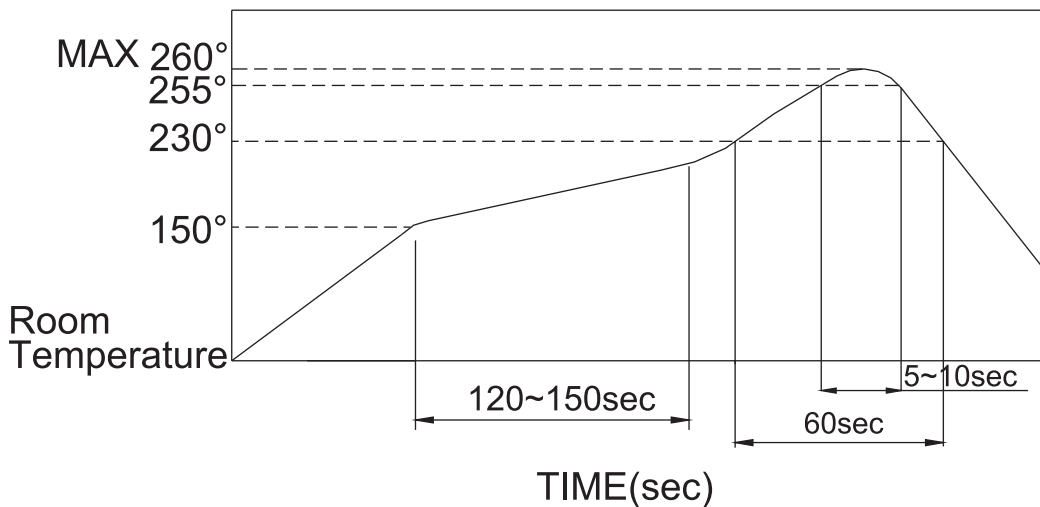
Features	Description	Test Conditions	Requirements				
Appearance	Visual Examination	By visual examination check without any out pressure & testing	There shall be no defects that affect the serviceability of the product.				
Electric Performance	Contact Resistance	Applying a static load 1.5-2 times the operating force to the center of the stem, measurements shall be made with a 1kHz small current contact resistance meter	100mΩ Max				
	Insulation Resistance	Measurements shall be made following application of 500V DC potential across terminals and cover for 1 minute ± 5seconds	100MΩ min				
	Dielectric Withstand- ing Voltage	250V AC(50Hz or 60Hz) shall be applied across terminals and cover for 1 minute	There shall be no breakdown or flashover				
	Capacitance	1MHz ±10kHz	5 pF max.				
	Bounce	3 to 4 operations at a rate of 1 cycles per second 	5 m seconds max. 				
Mechanical Performance	Operating Force	Applied in the direction of operation 	<table><tr><td>100 ±50g [.98 ±.49N]</td><td>160 ±50g [1.568 ±.49N]</td><td>260 ±50g [2.548 ±.49N]</td><td>520 ±130g [5.1 ±1.27N]</td></tr></table>	100 ±50g [.98 ±.49N]	160 ±50g [1.568 ±.49N]	260 ±50g [2.548 ±.49N]	520 ±130g [5.1 ±1.27N]
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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	0.2 ±0.1mm					

Features	Description	Test Conditions	Requirements
<b>Mechanical Performance</b>	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	1. As shown in item 4 to 7 2. Contact Resistance : 200mΩ Max 3. Insulation Resistance : 10MΩ min
	Solder Heat Resistance	Through Hole Type 1. Soldering Temperature : 260 ±5°C 2. Duration of Solder Immersion : 5 ±1second 3. Frequency of Soldering Process 2 time max. (PCB is 1.6mm in thickness) SMT Type ~ Series(4/4)	1. Shall be free from pronounced backlash and falling-off or breakage terminals 2. As shown in item 4 to 5 3. Contact Resistance : 200mΩ Max 4. Insulation Resistance : 10MΩ min
	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 to 7 2. Contact Resistance : 200mΩ Max 3. Insulation Resistance : 10MΩ min
	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
	Solderability	1. Through Hole Soldering Temperature : 245 ±3°C Lead-Free solder : M705E JIS Z 3282 A (Tin 96.5%, Silver 3%, Copper 0.5%) 2. Flux : 5 to 10 sec 3. Duration of solder Immersion : 5 ±1sec	No anti-soldering and the coverage of dipping into solder must more than 66% were requested.
<b>Durability</b>	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. Cycle of Operation: 500,000 cycles min~100 to 160g 200,000 cycles min.~260g	1. As shown in item 4 to 5 2. Operating force: ±50% of initial force. 3. Contact Resistance: 10Ω Max 4. Insulation Resistance : 10MΩ min 5. Bounce: 10m seconds Max
<b>Weather-Proof</b>	Resistance Low Temperature	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 : -25 ±3°C 2. Time : 96 hours	1. As shown in item 4 to 7 2. Contact Resistance : 200mΩ Max 3. Insulation Resistance : 10MΩ min

Features	Description	Test Conditions	Requirements
Weather-Proof	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	Ditto
	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 to 95% 3. Time : 96 hours	Ditto

## Soldering Conditions:

- Condition for Reflow Soldering – S.M.T Series



- 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

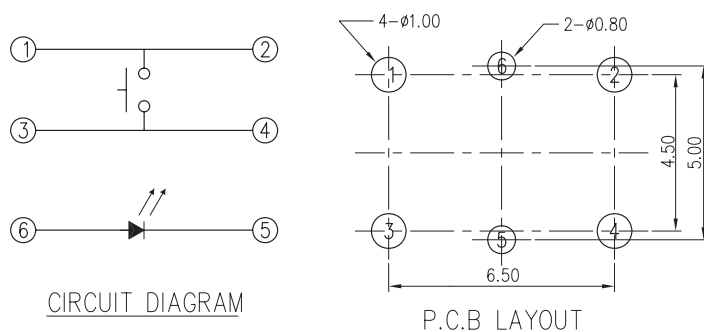
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Figure 1 consists of two cross-sectional diagrams of a mechanical assembly. The left diagram shows a base (4) with a layer (2) and a component (1) on top. The right diagram shows the same assembly with an additional component (5) on top of (1).

Technical drawings of the LED module showing dimensions in mm:

- Top View:** Shows a square module with a central circular LED die. Dimensions include a total width of 6.10 mm, a central die diameter of 0.40 mm, a mounting pad diameter of 3.50 mm, and a total height of 4.50 mm. The mounting pad thickness is 0.650 ± 0.100 mm. The central die is labeled with a circled 1, and the mounting pads are labeled with circled 2 and 3. A circled 4 indicates the mounting pad diameter.
- Side View:** Shows the module's profile. Dimensions include a total height of 7.00 mm, a mounting pad height of 0.80 mm, a central die height of 4.80 mm, and a mounting pad width of 6.00 mm. The mounting pad is labeled with a circled 1, and the central die is labeled with a circled 2. The mounting pad thickness is 0.650 ± 0.100 mm. The central die is labeled with a circled 3.
- Detail View:** Shows the mounting pad and central die. Dimensions include a total width of 6.50 +0.30/-0.40 mm, a central die width of 4.00 mm, a mounting pad width of 2.90 mm, and a mounting pad height of 4.00 mm. The mounting pad is labeled with a circled 1, and the central die is labeled with a circled 2. The mounting pad thickness is 0.650 ± 0.100 mm. The central die is labeled with a circled 3.

Note: General Tolerances :  $\pm 0.2\text{mm}$  Max.



## Part Number Table

Description	Part Number
Tactile Switch	MC35138

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