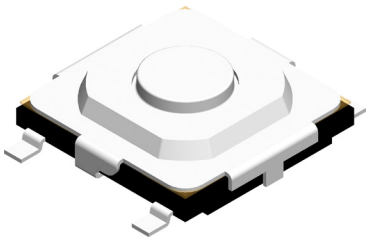
Tactile Switch

multicomp PRO

RoHS Compliant



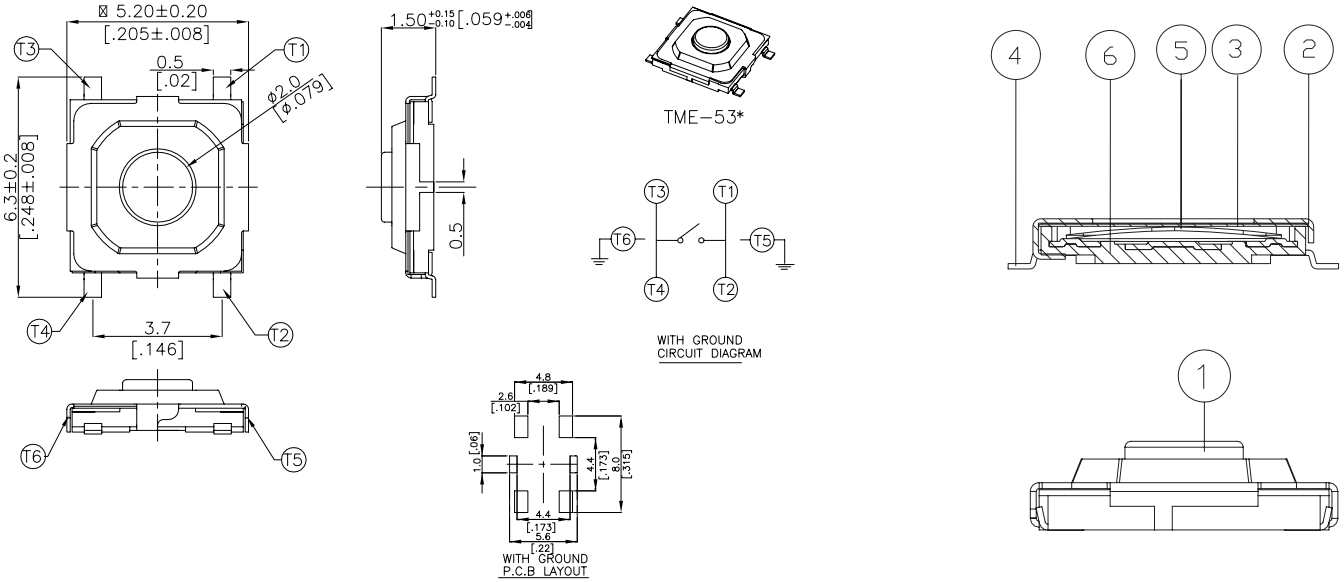
Description

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

Specifications

Operating Temperature Range	: -25°C to +70°C
Storage Temperature Range	: -30°C to +80°C
Current Range	: 50mA, 12V DC
Type of Actuation	: Tactile feedback

Diagram

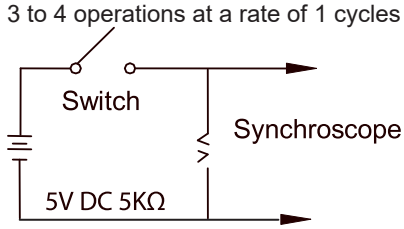
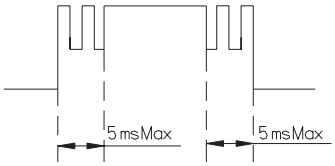


Dimensions : Millimetres (Inches)

Item	Description	Q'ty	Materials	Treatment
1	Stem	1	SPCF-SD	NI Plating 1.5~5um
2	Cover		□ =Nickel Silver S = Stainless Steel	□=None S = With Silver Plating
3	Adhesive Tape		PTFE	None
4	Terminal		Phosphor Bronze	With Silver Plating
5	Contact		Stainless Steel	With Silver Cladding
6	Base		High – Temp Thermoplastic LCP	Molded Black

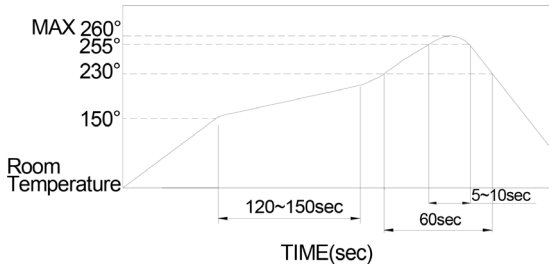
General tolerances : ±0.2mm

Test Sequence

Item	Description	Test Conditions	Requirements
Appearance			
1	Visual Examination	By Visual Examination choke 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 to 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.(Initial)
3	Insulation Resistance	Measurements shall be made following application of 500 V DC potential across terminals and cover for 1 minute ± 5 seconds	100MΩ Min.
4	Dielectric Withstanding Voltage	250 V 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 	5 m seconds Max. 
Mechanical Perfprmance			
6	Operation Force	Applied in the direction of operation. 	70±50g / 100±50g / 160±50g / 260±50g / 350±50g
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	0.25+0.1/-0.2mm
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	1) As shown in item 4~7 2) Contact Resistance: 200 mΩ Max. 3) Insulation Resistance: 10 MΩ Min
9	Solder Heat Resistance	1.PCB is 1.6mm in thickness 2.SMT Type ~MPTMG(E), TJG(E)-5 Series(4/4)	1)As shown in item 4, 5 2) Contact Resistance: 200mΩ Max 3) Insulation Resistance: 10MΩ min
10	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1) Frequency: 10-55-10 Hz in 1 minute/Cycle 2) Direction: 3 vertical directions including the direction of operation. 3) Test Time: 2 hours each direction.	1) As shown in item 4~7 2) Contact Resistance: 200mΩ Max 3) Insulation Resistance: 10MΩ min

Item	Description	Test Conditions	Requirements
Mechanical Performance			
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 Static Load = OF max 2 cycles/sec 3. Cycle of Operation: 1,000,000 cycles min. for 100, 160gf 200,000 cycles min. for 260, 350gf	1. As shown in item 4, 5 2. Operating force:±50% of initial force . 3. Contact Resistance: 10Ω Max 4. Insulation Resistance: 10MΩ min 5. Bounce: 10 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 1 hour before the measurements are made: 1.Temperature:-25±3°C 2.Time: 96 hours	1) As shown in item 4~7 2) Contact Resistance: 200mΩ Max 3) Insulation Resistance: 10MΩ min
14	Resistance High 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:80±2°C 2.Time: 96 hours	Ditto
15	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°C±2°C 2) Relative Humidity :90~95% 3) Time: 96 hour	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 fromswitch'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, 5.2mm × 5.2mm, SMT, G Pin, H1.5mm. 160g	MPTME-533-Q-T/R
Tactile Switch, 5.2mm × 5.2mm, SMT, G Pin, H1.5mm, 260g	MPTME-534-Q-T/R
Tactile Switch, 5.2mm × 5.2mm, SMT, G Pin, H2mm, 160g	MPTME-543-Q-T/R

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