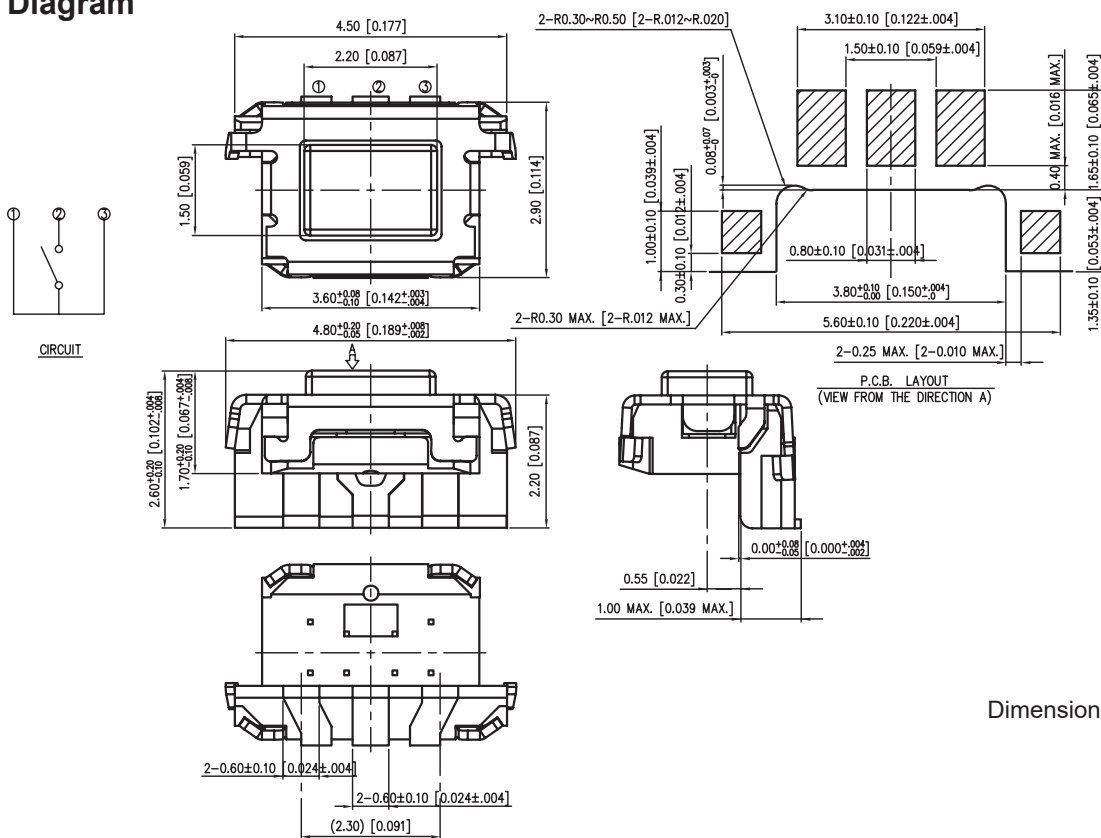


Specification

Rating	: 20mA 15V DC
Contact Resistance	: 1000mΩ Max.
Insulation Resistance	: 100V DC 100MΩ
Dielectric Strength	: 250V AC 1 minute
Operating Force	: 160 ±50gf. / 240 ±70 gf.
Life	: 200,000 Cycles
Operating Temperature Range	: -40°C to 85°C
Storage Temperature Range	: -40°C to 85°C
General tolerances	: ±0.2mm

**RoHS
Compliant**

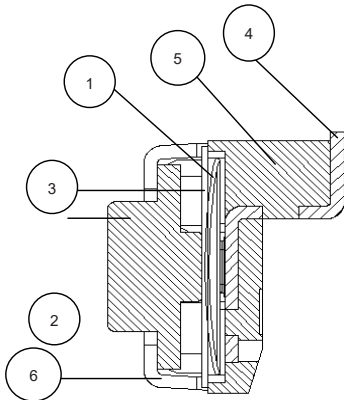
Diagram



Dimensions : Millimetres (Inches)

Item	Description	Q'ty	Materials	Treatment
1	Contact	2	Stainless Steel	With Silver Cladding
2	Stem	1	High-Temp Thermoplastic LCP UL 94V-0	--
3	Tape		Kapton	None
4	Terminal		Phosphor Bronze	With Silver Plating
5	Base		High-Temp Thermoplastic LCP UL 94V-0	Molded Black
6	Cover		Stainless Steel	With Silver Plating

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1. Style

This specification describes “Side-operational Edge Mount Light Touch Switches”, mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

1.1 Operating Temperature Range: -40c to +85°C

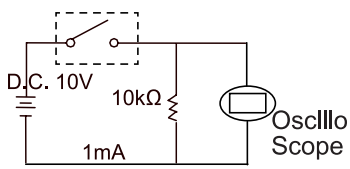
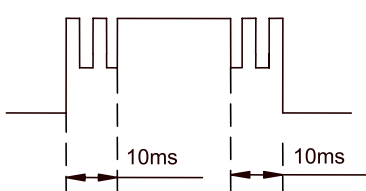
1.2 Storage Temperature Range : -40°C to +85°C (Bulk)
 -20°C to +85°C (Taping)


1.3 The shelf life of product is within 6 months.

2. **Current Range:** 10mA , 2V DC to 20mA 15V DC (Resistive load)

3. **Type of Actuation:** Snap action/Push-on type SPST

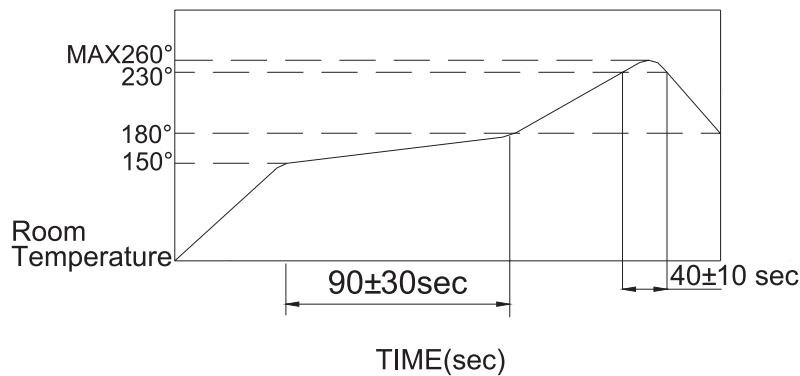
4. **Test Sequence:**

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 twice the actuating force to actuator. 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 100 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 	OFF 10 ms seconds max. ON 10 ms seconds max 

Mechanical Performance					
6	Operation Force	Applied in the direction of operation. 	OF	MPTCF3QR	
				160g ± 50g	240±70g
7	Travel to closure	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 3kgf(29.4N) shall be applied in the direction of stem operation for a period of 15 seconds	1) As shown in item 3, 5, 6, 7 2) Contact Resistance: 2000mΩ Max		
9	Solder Heat Resistance	SMT Type ~MPTCFQ Series(4/4) (PCB is 1.6mm 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: 2000mΩ 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: 2000mΩ Max 3) Insulation Resistance: 10MΩ Min		
Durability					
11	Operating Life	Measurements shall be made following the test forth below: 1) 20 mA, 15V DC resistive load 2) Operation speed: 2~3 times/s 3) Push force: Maximum value of operation force 4) Cycle of Operation: 200,000 cycle's Min	1) Variation rate of operation force shall be within ±30% to value before testing 2.7 2) Contact Resistance: 20Ω Max 3) Insulation Resistance: 10MΩ Min 4) Bounce: 10 m seconds Max		
Weather-Proof					
12	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: -40±2°C 2) Time: 500 hours 3) Take off a drop water.	1) As shown in item 2.5.6.7. 2) Contact Resistance: 2000mΩ Max		
13	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: 85±2°C 2. Time: 500 hours	Ditto		

14	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:60±2°C 2. Relative Humidity:90~95% 3. Time:500 hours	Ditto
15	Withstand H2S	1) Density:3±1 ppm 2) Temperature:40±2°C 3) Relative Humidity:80~85% 4) Duration of test:24 hr 5) Standard conditions after test:1 hr	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. 3 seconds

Part Number Table

Description	Part Number
Tactile Switch, 2.9 × 4.5, 240gf	MPTCF3QR

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