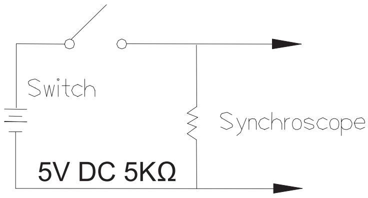
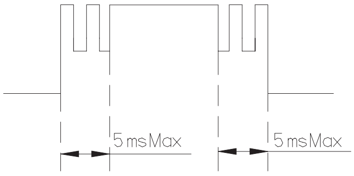
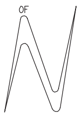
Tactile Switch

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:

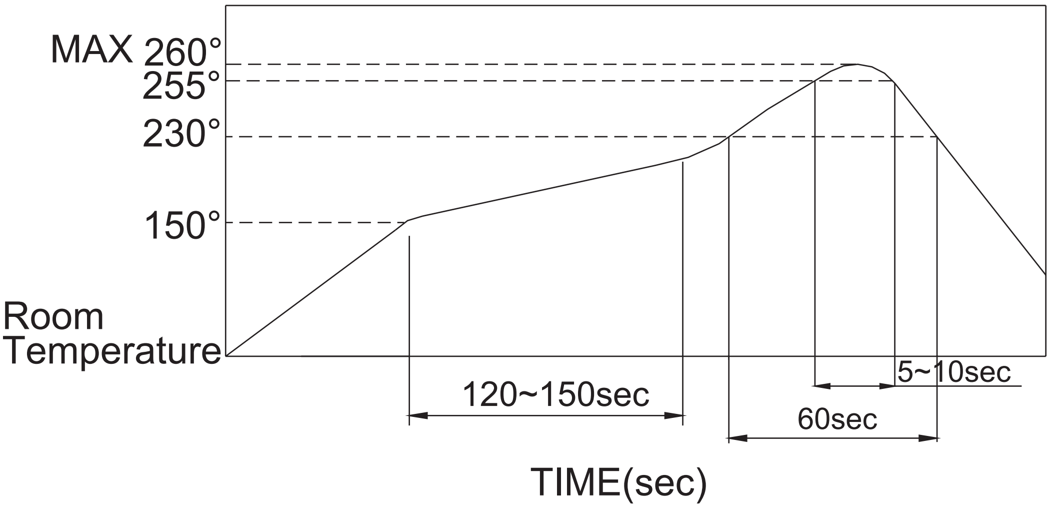
Features	Description	Test Conditions	Requirements
Appearance	Visual Examination	By visual examination check without any out pressure & testing	There shall be no defects that affect the serviceability of the product.
Electric Performance	Contact Resistance	Applying a static load 1.5-2 times the operating 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 Withstanding 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  	100 ±50g [.98 ±.49N] 160 ±50g [1.568 ±.49N] 260 ±50g [2.548 ±.49N] 520 ±130g [5.1 ±1.27N]
	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
Mechanical Performance	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.
Durability	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
Weather-Proof	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

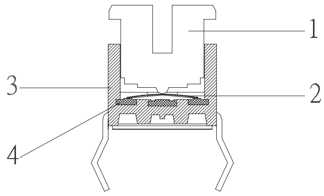


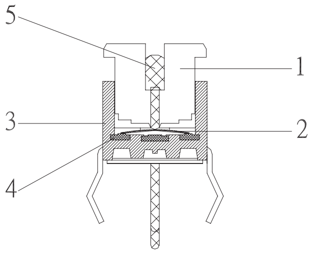
- The condition mentioned above is the temperature on the Cu foil of the PCB surface. There are cases where board's temperature greatly differs from switch's surface be used not to allow switch's surface temperature to exceed 260°C.

Manual Soldering

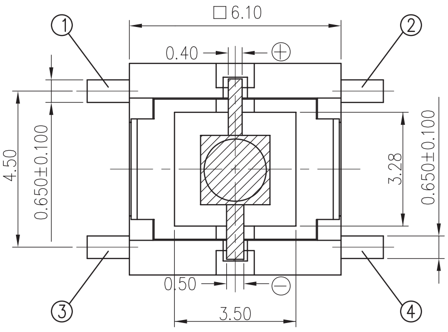
Soldering Temperature	Max. 350°C
Continuous Soldering Time	Max. 5 seconds

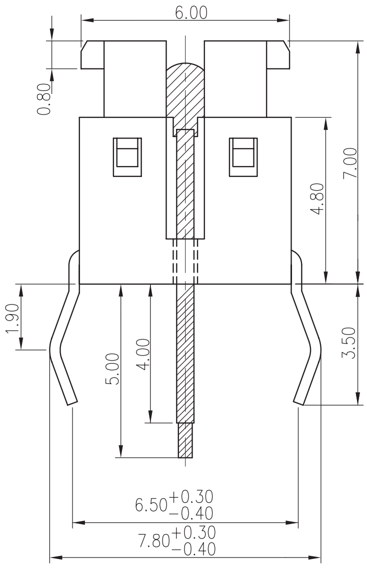
Diagram:

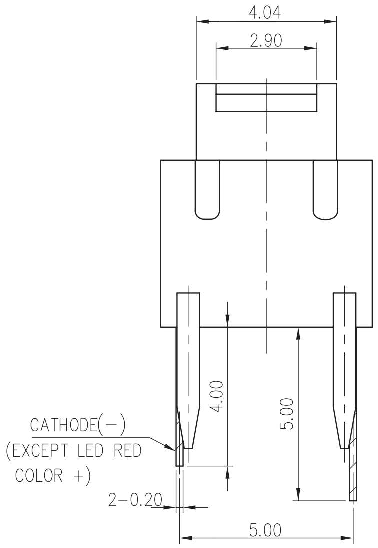




Item	Description	Materials	Qty.	Treatment
1	Stem	High-Temp Thermoplastic PA9T UL 94V-0	1	-
2	Contact	SUS301CSP-EH		With Silver Plating 0.5um min
3	Base	High-Temp Thermoplastic FR52 UL 94V-0		Molded Black
4	Terminal	Brass		With Silver Plating
5	Led	-		NONE
6	Tape	PTFE		-

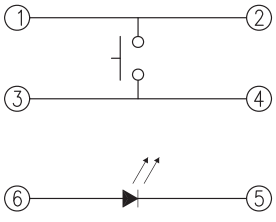




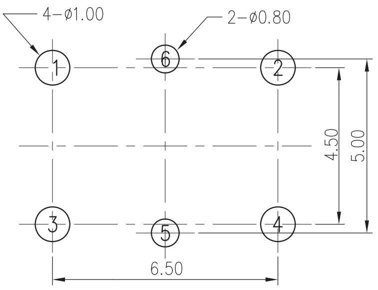


Dimensions : Millimetres

Note: General Tolerances : .±0.2mm Max.



CIRCUIT DIAGRAM



P.C.B LAYOUT

Part Number Table

Description	Part Number
Tactile Switch	MC35138

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