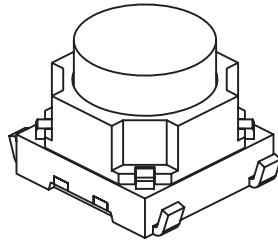


# Tactile Switches

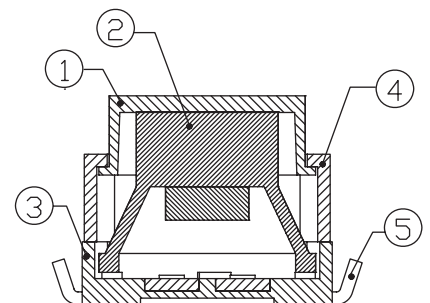
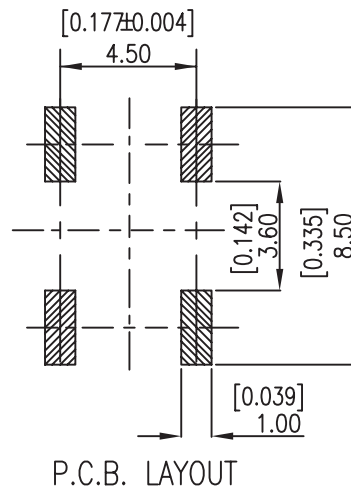
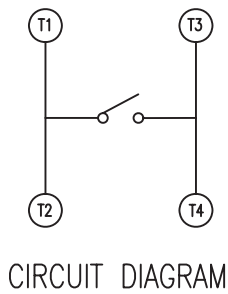
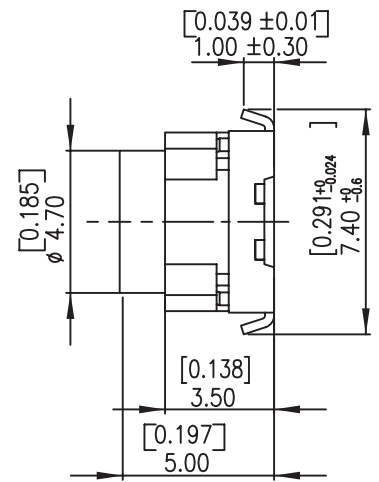
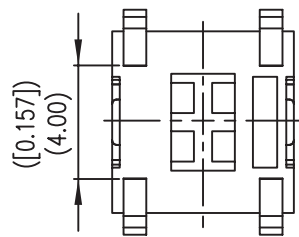
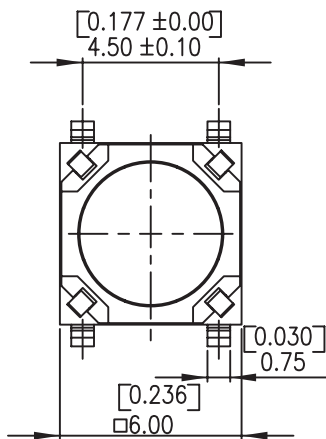
## Long Travel SMT Tactile Switches

## TP36 Series



**NOTE:**

1. ALL DIMENSIONS ARE IN MILLIMETER, BRACKETED DIMENSIONS ARE IN INCHES.
2. GENERAL TOLERANCES  $\pm 0.20\text{mm}$ .



### How to order:

TP36 1 2 3 4

- 1 TERMINAL TYPE:**  
B SMT Bending Terminals
- 2 TRAVEL:**  
13 1.3 mm
- 3 OPERATING FORCE:**  
C 200 gf  
S 350 gf
- 4 PACKAGING:**  
TR Tape and Reel

ITEM	DESC	QTY	MATERIALS	TREATMENT	REMARK
1	Stem	1	HIGH-TEMP THERMOPLASTIC NYLON UL 94V-0	Color : Red	-
2	Silicone Dome	1	Silicone rubber with metal contact	With Gold Plating	-
3	Base	1	HIGH-TEMP THERMOPLASTIC NYLON UL 94V-0	Color : Black	-
4	Cover	1	HIGH-TEMP THERMOPLASTIC NYLON UL 94V-0	Color : Black	-
5	Terminal	1	BRASS	With Silver Plating	-

### SPECIFICATIONS

#### 1. Style

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

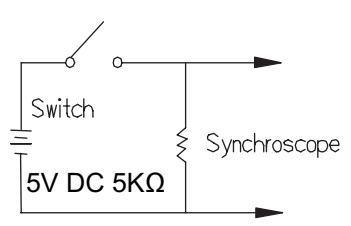
1.1 Operating Temperature Range:  $-40^{\circ}\text{C} +85^{\circ}\text{C}$

1.2 Storage Temperature Range :  $-40^{\circ}\text{C} +85^{\circ}\text{C}$

2. Current Range: 50mA, 12 VDC

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.
	2	Contact Resistance	Applying a static load 1.5~2 times the operating force to the center made with a 1 kHz small current contact resistance meter.	100mΩ Max.
ELECTRIC PERFORMANCE	3	Insulation Resistance	Measurements shall be made following application of 500 V DC potential across terminals and cover for 1 minute $\pm 5$ seconds.	100MΩ Min.
	4	Dielectric Withstanding Voltage	300 V 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 $\pm 10$ kHz	5 pF max.
	6.	Bounce	3 to 4 operations at a rate of 1 cycles per second 	10 m seconds Max.

# Tactile Switches

## Long Travel SMT Tactile Switches

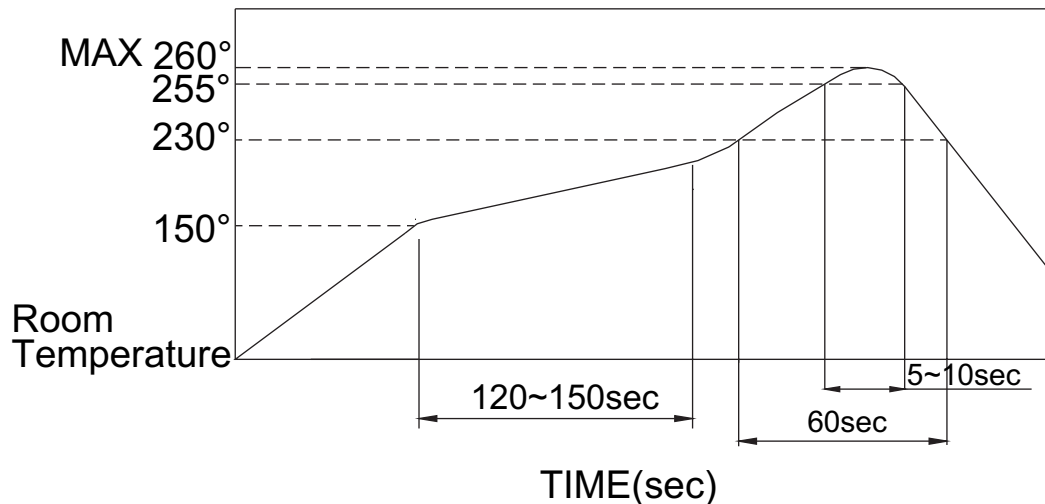
## TP36 Series

		Applied in the direction of operation.			C	S
MECHANICAL PERFORMANCE	7.	Operating Force		OF	200g+50g/-50g (2.04N+0.49N/ -0.49N)	350g±100g (3.43N±.98N)
	8.	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.	1.30+0.1/-0.3 mm		
	9.	Stop Strength	Placing the switch such that the direction of switch operation is vertical, a static load of 5 kgf(50N) shall be applied in the direction of stem operation for a period of 15 seconds	1)As shown in item 4~6 2)Contact Resistance: 200mΩ Max 3)Insulation Resistance: 10MΩ Min		
	10.	Solder Heat Resistance	(PCB is 1.2 mm in thickness) SMT Type	1)Shall be free from pronounced backlash and falling-off or breakage terminals 2)As shown in item 4~7 3)Contact Resistance: 200mΩ Max 4)Insulation Resistance: 10MΩ Min		
	11.	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F ①Frequency: 10-55-10Hz in 1-min/cycle. ②Direction: 3 vertical directions including the directions of operation ③Test time: 2 hours each direction. ④ Swing distance=1.5mm	1)As shown in item 4~7 2)Contact Resistance: 10Ω Max 3)Insulation Resistance: 10MΩ Min		

<b>MECHANICAL PERFORMANCE</b>	12	Shock	<p>Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F</p> <p>1)Acceleration; 50G 2)Action time:11±1m seconds 3)Testing Direction: 6 sides 4)Test Cycle: 3 times in each direction</p>	Ditto	
	<b>DURABILITY</b>	13	Operating Life	<p>Measurements shall be made following the test forth below:</p> <p>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 3)Cycle of Operation: 100,000 cycles Min. For 200g 30,000 cycles Min For 350g</p>	<p>1)As shown in item 4~6 2)Operating force:±50% of initial force. 3)Contact Resistance: 10Ω Max 4)Insulation Resistance: 10MΩ Min 5)Bounce: 20 m seconds Max</p>
<b>WEATHER-PROOF</b>		14	Resistance Low Temperature	<p>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:</p> <p>1)Temperature:-40±2℃ 2)Time:500 hours</p>	<p>1)As shown in item 4~7 2)Contact Resistance: 10Ω Max 3)Insulation Resistance: 10MΩ Min</p>
		15	Resistance High Temperature	<p>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:</p> <p>1)Temperature:85±2℃ 2)Time:500 hours</p>	Ditto
	16	Resistance Humidity	<p>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:</p> <p>1)Temperature:60±2℃ 2)Relative Humidity:90~95% 3)Time:500 hours</p>	Ditto	

### 5. 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

#### ■ Precautions in Handling

1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
2. Except for washable type do not wash the switch body.