

**TACT SWITCH SPECIFICATION****Product Number: PB6272L****1. GENERAL****1.1** Type of actuation: Momentary action**1.2** Range: 10mA, 12VDC**1.3** Operation temperature and humidity:

Temperature : -20 to +70°C (No dewing or icing) Humidity : 60%RH max.

Humidity : 35 to 85%RH (at +5 to +35°C)

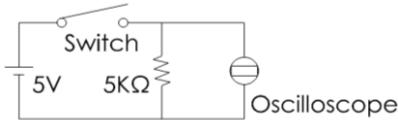
In terms of environment for use, please use within the range of operating temperature and humidity, and please avoid using and/or keeping the switch under high temperature and/or high humidity over the long term.

1.4 Standard test conditions:

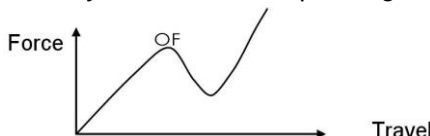
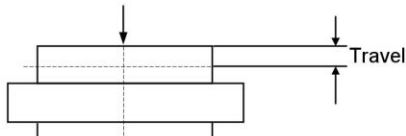
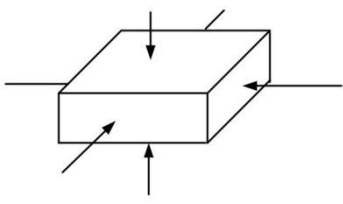
Temperature: 20±2°C

Humidity: 65± 5 % RH

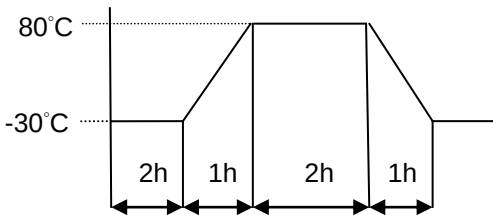
2. PERFORMANCE**2.1 Electrical characteristics**

NO	Item	Test Conditions	Performance
2.1.1	Contact resistance	Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1kHz small current contact resistance meter.	500Ω max.
2.1.2	Insulation resistance	Measurements shall be made following application of 500VDC potential across terminals and across terminals and frame for one minute.	100M Ω Min.
2.1.3	Dielectric withstanding voltage	AC 250V (50Hz or 60Hz) shall be applied across terminals and across terminals and frame for one minute.	There shall be no breakdown.
2.1.4	Bounce	Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec.) bounce shall be tested at "ON" and "OFF". 	5m sec. max.

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2.2 Mechanical characteristics

NO	Item	Test Conditions	Performance
2.2.1	Operation force	Push by recommended operating condition 	Operating force: 100±40gf
2.2.2	Travel	Push by recommended operating condition 	Travel: 1.0mm±0.2mm
2.2.3	Stop strength	Placing the switch such that the direction of switch operation is vertical, a static load of 20N shall be applied in the direction of stem operation for a period of 15 seconds	No 2.1.3 to 2.1.4 and 2.2.1 shall be satisfied. Contact Resistance: 200mΩ Max
2.2.4	Vibration	(1) Amplitude: 1.5mm (2) Sweep rate: 10-55-10Hz for 1 minute. (3) Sweep method: Logarithmic frequency sweep rate. (4) Vibration direction: X.Y.Z(3 directions) (5) Time: Each direction 2 hours (Total 6 hours)	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.5	Shock test	(1) Acceleration: 80G (782M/sec. ²) (2) Cycles of test: 3 cycle each in 6 directions, for a total 18 cycles. 	No contact openings longer than 10μs & contact resistance < 200mΩ No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.6	Solder heat resistance	Soldering area: t/2 of P.C.B thickness (P.C.B: t=1.6) Soldering temperature: 260 ±5°C Soldering time: 5 sec.	No damage (Electrical and mechanical)
2.2.7	Solder ability	1. Spread on flux 2. Soldering temperature: 260±5°C 3. Soldering time: 2±0.5 sec.	More than 90% of surface area of the portion immersed shall be covered with solder.

**TACT SWITCH SPECIFICATION****Product Number: PB6272L****2.3 Climatic characteristics**

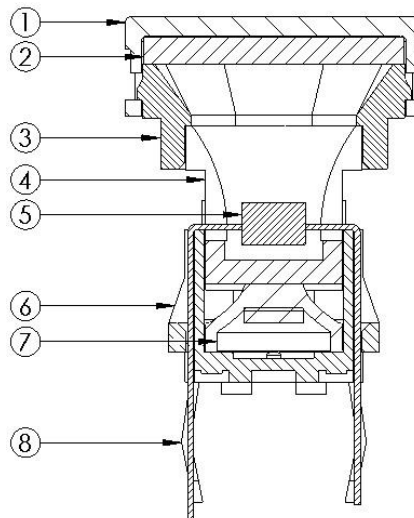
NO	Item	Test Conditions	Performance
2.3.1	Resistance Low Temperature	(1) Temperature : $-30\pm 2^{\circ}\text{C}$ (2) Duration of test : 96 hours (3) Take off a drop water (4) Standard condition after test : 1 hour	Contact resistance < 1000Ω max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.2	Resistance High Temperature	(1) Temperature : $+80\pm 2^{\circ}\text{C}$ (2) Duration of test : 96 hours (3) Standard conditions after test : 1 hour	Ditto
2.3.3	Temperature cycle	(1) Test cycles : 5 cycles (2) Standard conditions after test : 1 hour (3) 1 cycle 	Contact resistance : 1000Ω max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.4	Resistance Humidity	(1) Temperature : $60\pm 2^{\circ}\text{C}$ (2) Relative humidity : 90~95% (3) Duration of test : 96 hours (4) Take off a drop water (5) Standard conditions after test : 1 hour	Ditto
2.3.5	Operating life test	(1) 10mA, 12VDC Resistance load (2) Operation speed : 40-60cycles/min (3) Push force : Maximum value of operation force (4) Cycles of operation: 100,000cycles	Contact resistance: 1500Ω max. Insulation resistance: 100MΩ min. Bounce: 20m sec. max. Actuating force: $\pm 30\%$ initial force. No 2.1.2 to 2.1.3 and 2.2.2 shall be satisfied.

Note : Each performance item is mentioned only about each test condition , not mentioned to guarantee complex condition tests of all above items .

Please evaluate the switch in advance under actual use condition in your side, and confirm if there is no problem.

**TACT SWITCH SPECIFICATION****Product Number: PB6272L****3. Product code**

PB6272□-□□□-□□

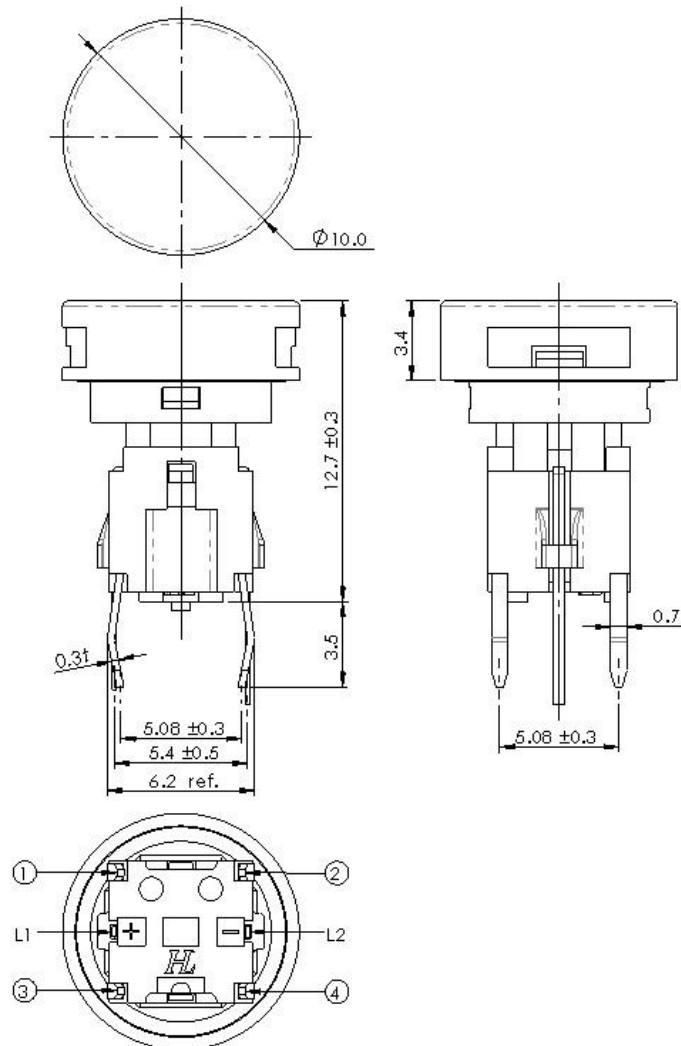
FUNCTIONBlank : Non LED
L : With LED**LED COLOR 1****LED COLOR 2**1 : Red 5 : White
2 : Yellow 6 : Pure Green
3 : Green 8 : Amber
4 : Blue※ LED color 2 was blank when a
single color.**LED BRIGHTNESS**Blank : Standard
C : High Brightness**Symbol On Cap**參考附件符號表
(ENE-PN-013)**CAP COLOR**1 : Misty Silver
2 : Bright Silver
3 : Gold
4 : White
5 : Bright Black
6 : Red
7 : Misty Black
8 : Sky Blue
9 : Gunme Black
A : Orange**4. MATERIALS****4.1** Cap : PC**4.2** Lens : PC**4.3** Holder : Thermoplastic PA66+15%GF, Flame class: UL94 V-0**4.4** Knob : Thermoplastic PA66+30%GF, Flame class: UL94 V-0**4.5** LED Resin : Epoxy**4.6** Base : Thermoplastic PA66+30%GF, Flame class: UL94 V-0**4.7** Contact : Silicone**4.8** Terminal : Brass, Thickness=0.30mm, Ag plating 20μ" min.



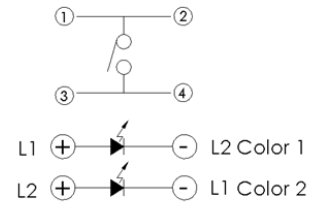
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5. Dimensions (Unit: mm)



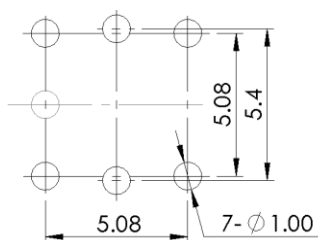
CIRCUIT



General tolerances $\pm 0.2\text{mm}$

6. PCB mounting hole and layout (Unit: mm)

Top view



General tolerances $\pm 0.1\text{mm}$

**7. SOLDERING CONDITIONS****7.1 Common cautions for soldering**

- Depending on the type of PCB or its pattern, it can cause the deformation of the switch by heat.
- Total number of soldering shall be twice maximum including re-soldering like manual adjustment.
- On that occasion an interval shall be taken for 5 minutes at least between first soldering and second soldering and shall wait until it returns to the normal temperature.
- Continuous heating can be a cause of deformation of the external portions, deteriorated characteristics.

7.2 Automatic soldering baths

- Soldering temperature: 265°C max
- Soldering time: 5 s max. for a 1.6-mm thick single-side PCB
- Preheating temperature: 100°C max. (ambient temperature)
- Preheating time: Within 60 s
- Make sure that no flux will rise above the level of the PCB. if flux overflows onto the mounting surface of the PCB, it may enter the Switch and cause a malfunction .

7.3 Manual soldering

- Soldering temperature: 350°C max. at the tip of the soldering iron.
- Soldering time: 3 s max. for a 1.6-mm thick single-side PCB
- Before soldering the switch on a PCB, make sure that there is no unnecessary space between the switch and the PCB.

**8. Safety Precautions****8.1 Rating :**

- Please use the switch within the rated voltage and current ranges. otherwise the switch may have a shortened service life, radiate heat, or burn out.
- Please use the switch within rated voltage and rated current including inrush voltages and currents .

8.2 Washing

- It is not able to wash this switch .
- If it is washed, flux or foreign substances on the PCB can enter to the switch inside together with solvents and can be a cause of failure.

8.3 Printed circuit board

- The switch is designed for a 1.6mm thick, single-side PCB .
- Please pay attention to handling of PCB after switch mounted. During the PCB parting process, shattered PCB powder can into switch inside. please do not stack PCBs .

8.4 Handling

- Use environment
Please confirm in advance if corrosive gas is not generated from peripheral components in actual use condition.
 - Please do not use in malignant gas atmosphere such as sulfuric gas (H₂S, SO₂), ammonia gas (NH₃), chlorine gas (Cl₂) or in high temperature and humidity. Otherwise it can cause the faulty function such as contact failure or damage by corrosion.
 - In case of silicone existing atmosphere, contact failure can occur.
If there is silicon related product such as silicon oil, silicon infilling or silicon wires around the switch, please refrain from arc by contact protected circuit or remove source of silicon generation.
- Operation
 - Do not repeatedly operate switch with excessive force. Applying excessive pressure or applying additional force after the plunger has stopped may deform the parts, resulting in malfunction.
 - Be sure to set up the switch so that the plunger will operate in a straight vertical line, a decrease in the life of the switch may result if the plunger is pressed is pressed off-center or from an angle.
- Dust protection
 - Do not use this switch in the areas where dust is generated . doing so may cause dust to penetrate inside the switch and cause faulty contact .
 - If it is compelled to use in such condition , conduct protective measures such as protecting by sheet .
- Waterproof , Watertight
 - The switch is not waterproof or watertight type.
 - Mounting or usage in the area where can wet shall be avoided .

**9. Storage****9.1 Storage environment**

Temperature : -30 to +80°C (No dewing or icing) Humidity : 85%RH Max.
(at +5 to +35°C).

To prevent degradation, such as discoloration, in the terminals during storage, do not store the Switch in locations that are subject to the following conditions.

- High temperature or humidity
- Corrosive gases and dust
- Direct sunlight

9.2 Storage method

Please store with packaged condition.

After you break the seal, you should put the remaining in a plastic bag to separate it from the outside and store it in the same environment mentioned above. You should use it up as soon as possible.