

## TECHNICAL SPECIFICATION OF THERMAL PROTECTOR, ST-12

### 1. APPLICATION SCOPE

ST-12 is an Automatic Reset Thermal Protector and is applied to OVERHEAT PROTECTION.

### 2. STRUCTURE

2-1. Type: Single-Pole Type using Bi-metal

2-2. Dimension: Please refer to the attachment.

### 3. SPECIFICATIONS

#### 3-1. Electrical Ratings

Rated Voltage	AC 125 V	AC 250 V
Rated Current	15 A	13 A
Rated Load	Resistive Load	

#### 3-2. Pre-setting Temperature

Operating Temperature	Preset Temp. $\pm 5^{\circ}\text{C}$
Reset Temperature	Operating Temperature $- 10^{\circ}\text{C}$ or Below

During rising of temperature, when the contacts are open, it's called "Open Temperature". During dropping of temperature, when the contacts are closed, it's called "Reset Temperature".

Calibration Verification: The temperature in a convection oven (electrically heated, static air-oven) is to be increased or decreased at the rate of  $1^{\circ}\text{C}$  per minute. The current should be within 100mA.

#### 3-3. Insulation Resistance

With insertion of a 0.5mm-thick-insulating material between both contacts,

the insulation resistance between both terminals should be over 100M $\Omega$  when measured with DC500V tester.

#### 3-4. Contact Resistance

Not greater than 50m $\Omega$  between two terminals using DC6V/1A voltage drop method.

### **4. RELIABILITY TESTING**

#### 4-1. Endurance Test

It should have no defects after 10,000 cycles of on-off testing through repeated heating and cooling with 60Hz rated voltage and rated current(power factor = above 90%). And when measuring the operating temperature with a method of above 3-2, the temperature should be within  $\pm 5^{\circ}\text{C}$  in case of under-100 $^{\circ}\text{C}$ -products and  $\pm 5\%$  temperature in case of over-100 $^{\circ}\text{C}$ -products compared with measured value before testing and satisfy the requirement of above 3-3 and 3-4 and the contact resistance should be below 100 m $\Omega$ .

#### 4-2. Heat Resistance Test

It should satisfy the requirements described in the above 3-2, 3-3, 3-4 & 3-5 after placing 24 hours in convection oven set by 200 $^{\circ}\text{C}\pm 3^{\circ}\text{C}$ .

#### 4-3. Vibration Resistance Test

It should satisfy the requirements described in the above 3-2 & 3-5 after 30 minutes of vibration in three ways under oscillation conditions of 20-60Hz and amplitude of 1mm.

#### 4-4. Tensile Strength Test

With fastening one terminal to the jig, it should have no damage when applying 5kg-pulling force to the opposite terminal in axial direction.

### **5. MARKING & PACKING**

#### 5-1. Marking

Brand name, model number, operating temperature and approval marks will

be printed on the surface of the product. Product name, model number, operating temperature, electrical rating (voltage/current), approval marks, manufacturing lot no., quantity and manufacturer's name would be printed on inner box.

#### 5-2. Packing

Inner Box: 1,000pcs (100pcs per each plastic container X 10 packs)

Outer Box: 10,000pcs (10 inner boxes)

### **6. PRECAUTIONS**

6-1. Do not drop thermal protectors to hard concrete plate to prevent possible damages.

6-2. Do not use thermal protectors in applications exceeding the rated voltage and current. Otherwise the electrical contacts may melt and cause a malfunction in the thermal protector.

6-3. In case of applying pressure to the product, it may cause a malfunction in the thermal protector. Therefore please make sure to use the product kept in the plastic container provided.

6.4. Transformed thermal protectors may not work properly.

6-5. In case that the products are exposed to humidity, salt and moisture, it may rust and cause a malfunction.

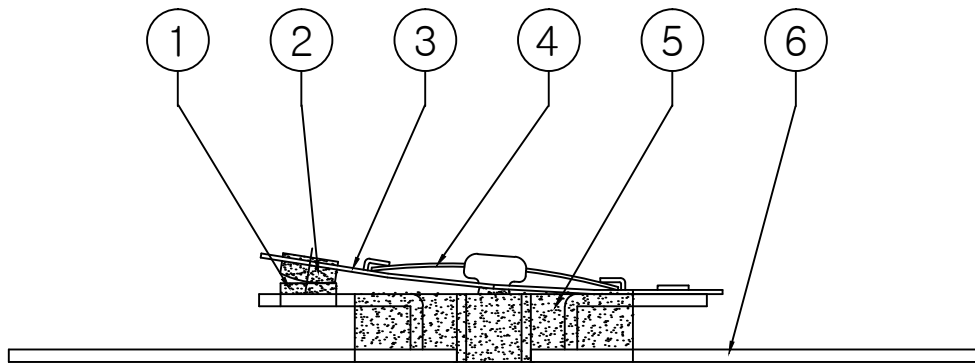
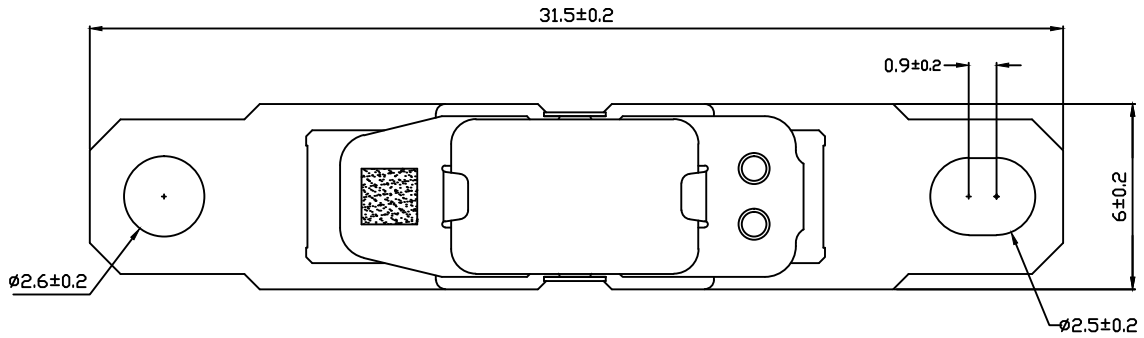
6-6. In case of handling the product with bare hands, it may be corroded due to salt and cause a malfunction.

### **7. Others**

7-1. Those subjects which are not defined in this specifications or any doubt arising from the execution of the specifications will be discussed separately and added or corrected specially when mutually agreed.

- 7-2. If any doubt arise during the incoming inspection at your end regarding the specifications of the thermal protector, please inform us immediately and we shall make an effort to settle the matter in an amicable manner.
- 7-3. If any doubt arise about the specifications after secondary process at your end, the scope of discussion to settle the matter will be limited to the thermal protector only.
- 7-4. Specifications described in this leaflet can be changed without any notice for quality improvement.

# ST-12 CONSTRUCTION



MODEL NO		PART LIST		
ST - 12				
Part No	Items	Materials	Manufacturer	Type and Rating
6	FIXED PLATE	Brass	POONG SAN / LEE KU	0.4t
5	BASE	LCP	SUMITOMO, POLYPLASTICS	94V-0
4	DISK	Bimetal	SUMITOMO, TOSHIBA, CHACE, NEOMAX	BR-1, BL-2, NIY, 6650
3	ACTION PLATE	Be-Cu	NGK	0.13t
2	MOVABLE CONTACT	Ag-Ni/Cu	HOKKO METAL, CO. Chang Sung	90Ag-10Ni/Cu
1	FIXED CONTACT	Ag-Ni/Cu	HOKKO METAL, CO. Chang Sung	90Ag-10Ni/Cu