Description

SETsafe | SETfuse 12TP series' special structure makes it very low profile available for narrow installation space. 100% ensure thermal disc offers high speed snap action and reliable performance. Compact size and excellent life cycle characteristics.

Features

- Low Contact Resistance
- Snap Action Disc
- RoHS & REACH Compliance

Applications

- Water Heaters
- Car Electric Heated Seats
- Battery Protection
- Transformers
- Dryers

Structure Diagrams

Agency Approvals

Agency	Standards	File No.
CQC	GB/T14536.1-2008 GB/T14536.10-2008	On-going

Part Number System

12TP - 125 - K - 9 C

Terminal Type

See Table-3

Default / A / B / C / D / E / F / G / H

(Default has the same terminal type as A)

Material Type

See Table-2

Default / 1 / 3 / 5 / 7 / 9

(Default has the same material type as 7)

Contact Status

Default: Normal Close

K: Normal Open

Temperature Code

See Table-1

Series

12TP

Glossary

Item	Description
Operating Temperature	**Operating Temperature** The actual temperature at which the thermal protector contacts are closed (normal open) or disconnected (normal close).
Recovery Temperature	**Recovery Temperature** After the thermal protector contact is closed or disconnected, the contact produces the actual temperature value corresponding to the open (normal open) or closed (normal close) contact.
Rated Current (I_r)	**Rated Current (I_r)** The current used to classify a thermal protector, which is the maximum current that Thermal Protector allows to carry and is able to cut off the circuit safely.
Rated Voltage (U_r)	**Rated Voltage (U_r)** The voltage used to classify a thermal protector, which is the maximum voltage that Thermal Protector allows to carry and is able to cut off the circuit safely.
Cycle Life	**Cycle Life** The number of periodic changes in the temperature of a bimetal element from its original state to its open (or closed) state.
Delta Temperature	**Delta Temperature** Is the difference between the zero current calibrated opening temperature and ambient temperature at the protector location.

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Specifications

Contact Capacity	Cycles Life	Rated Voltage (U_r)	Rated Current (I_r)
	Cycles	(V)	(A)
	≥ 10,000	AC 277	12
	≥ 10,000	AC 125	20
	≥ 100,000	DC 24	8
Contact Resistance	≤ 30 mΩ		
Operating Temperature	30 ~ 155 ºC in increments of 5*K*		
Long-term Service Temperature	-20 ~ 160 ºC		
Electric Strength	1700 V.r.m.s. 60 Hz, 1 minute, Terminal to case		
Lead Wire Type	UL3135 18 AWG 600 V other wire size is also available		

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TABLE-1 Temperature Code

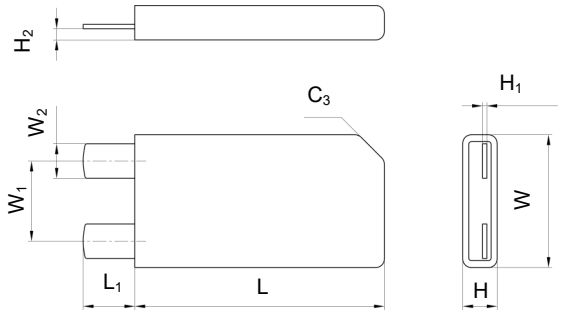
Temperature Code	Operating Temperature	Recovery Temperature	Temperature Code	Operating Temperature	Recovery Temperature
	(ºC)	(ºC)		(ºC)	(ºC)
030	30	≥ 20	095	95	70
035	35	≥ 25	100	100	75
040	40	≥ 30	105	105	75
045	45	≥ 35	110	110	80
050	50	≥ 35	115	115	85
055	55	≥ 35	120	120	85
060	60	45	125	125	90
065	65	45	130	130	90
070	70	50	135	135	95
075	75	55	140	140	100
080	80	60	145	145	100
085	85	65	150	150	105
090	90	65	155	155	105

TABLE-2 Material Type

Code	Hardware	Contact	Rivet
1	Nippon Steel	Silver Layer 0.1 mm	Copper
3	Brass	Silver Layer 0.1 mm	Copper
5	Brass silver Plated	Silver Layer 0.1 mm	Copper
7	Brass silver Plated	Silver Layer 0.1 mm	Copper Silver Plated
9	Brass silver Plated	Silver Layer 0.1 mm Gold Plated	Copper Silver Plated

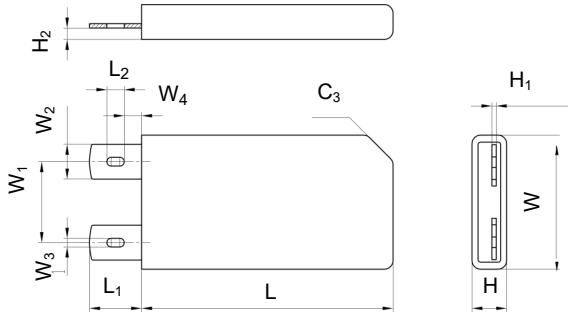
TABLE-3 Terminal Type

A



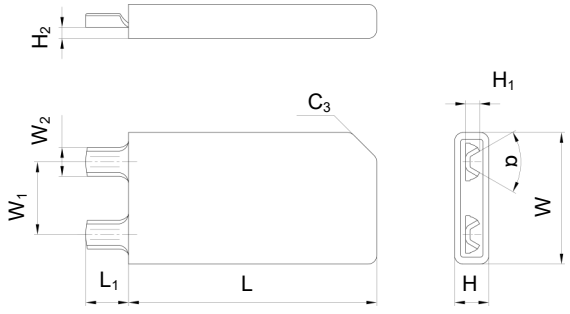
L (±0.5)	L_1 (±0.2)	H (±0.2)	H_1 (±0.1)
29.0	6.0	4.0	0.5
H_2 (±0.2)	W (±0.2)	W_1 (±0.2)	W_2 (±0.2)
1.3	15.4	9.3	4.0

B



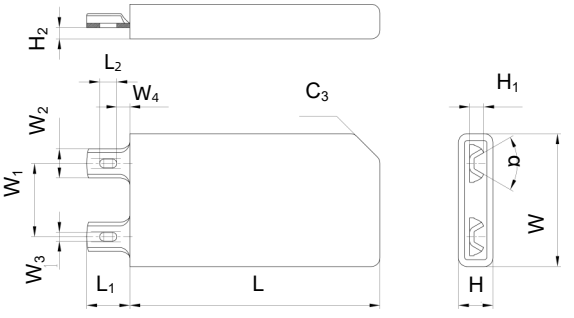
L (±0.5)	L_1 (±0.2)	H (±0.2)	H_1 (±0.1)	L_2 (±0.1)	H_2 (±0.2)
29.0	6.0	4.0	0.5	2.0	1.3
W (±0.2)	W_1 (±0.2)	W_2 (±0.2)	W_3 (±0.1)	W_4 (±0.1)	
15.4	9.3	4.0	1.0	2.0	

C



L (±0.5)	L_1 (±0.2)	H (±0.2)	H_1 (±0.1)	H_2 (±0.2)
29.0	5.0	4.0	1.6	1.3
W (±0.2)	W_1 (±0.2)	W_2 (±0.2)	α (±2°)	
15.4	8.5	3.4	60	

D

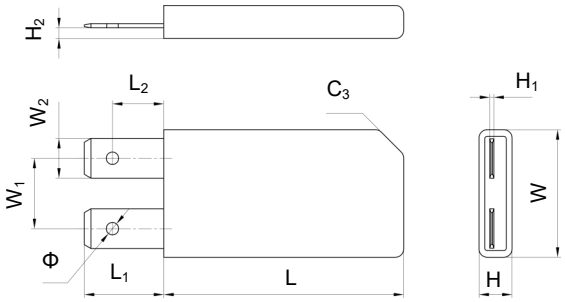


L (±0.5)	L_1 (±0.2)	L_2 (±0.1)	H (±0.2)	H_1 (±0.1)	H_2 (±0.2)
29.0	6.0	2.0	4.0	1.6	1.3
W (±0.2)	W_1 (±0.2)	W_2 (±0.2)	W_3 (±0.1)	W_4 (±0.1)	α (±2°)
15.4	8.5	3.4	1.0	1.5	60

TABLE-3 Terminal Type

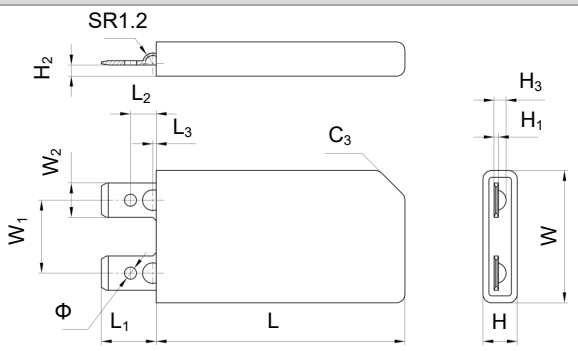
Code	Dimensions (mm)	Code	Dimensions (mm)

E



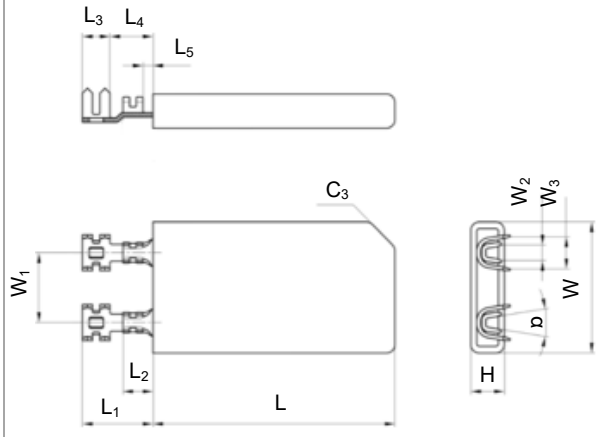
L (±0.5)	L_1 (±0.2)	L_2 (±0.1)	H (±0.2)	H_1 (±0.1)
29.0	9.6	6.2	4.0	0.5
H_2 (±0.2)	W (±0.2)	W_1 (±0.2)	W_2 (±0.2)	Φ (±0.2)
1.3	15.4	8.5	4.8	1.5

F



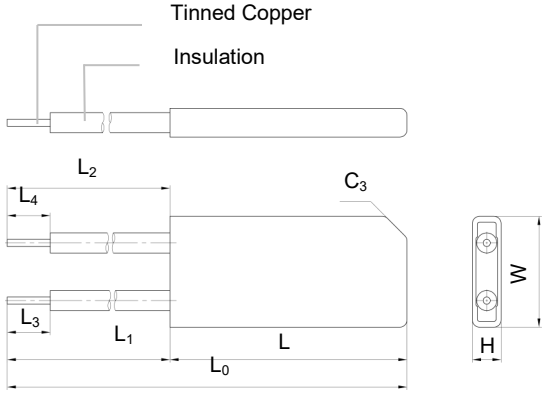
L (±0.5)	L_1 (±0.2)	L_2 (±0.1)	L_3 (±0.1)	H (±0.2)	H_1 (±0.1)
29.0	6.4	3.0	0.4	4.0	0.5
H_2 (±0.2)	H_3 (±0.2)	W (±0.2)	W_1 (±0.2)	W_2 (±0.2)	Φ (±0.2)
1.3	1.4	15.4	8.5	3.4	1.4

G



L (±0.5)	L_1 (±0.2)	L_2 (±0.1)	L_3 (±0.1)	L_4 (±0.1)	L_5 (±0.1)
29.0	8.45	3.6	3.3	5.15	1.2
H (±0.2)	W (±0.2)	W_1 (±0.2)	W_2 (±0.2)	W_3 (±0.2)	α (±1°)
4.0	15.4	8.2	1.85	3.8	18

H

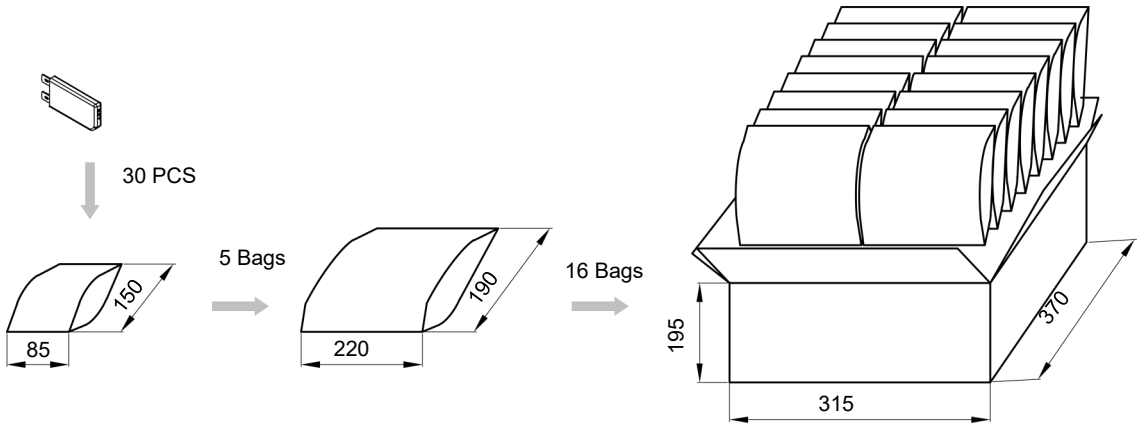


L (±0.5)	H (±0.2)	W (±0.2)	L_0, L_1, L_2, L_3, L_4 can be customized
33.0	4.0	15.4	

Packaging Information

Bulk (take 12TP Table-3 type C terminal as an example)

Item	PE Bag	PE Bag	Carton
Dimensions (mm)	150 × 85	220 × 190	370 × 315 × 195
Quantity (PCS)	30	150	2400
Remark: The dimensions and quantity of packaging is for reference only			



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Usage

1. These devices are not intended for use as service or repair components, strictly for use by Original Equipment Manufacturer. This product is not rated as explosion proof and should not be applied in any application where flammable vapors or dust is present. End of life failure of this device may result in either open or closed circuit condition, and as such, OEMs must apply end of life protection in series, per agency requirements.
2. Users are solely responsible for proper design, application and function of this product in the end product or system. Users must evaluate the suitability of these devices in their application with respect to Temperature Settings, Mechanical and Electrical Life Cycles, Electrical loads and Environmental conditions.
3. When atmosphere press is from 80 kPa to 106 kPa, the related altitude shall be from 2000 meter to –500 meter.

Replacement

The product is a non-repairable product. For safety sake, it shall be replaced by an equivalent part and mounted in the same way.

Storage

Do not store the product at high temp, high humility or corrosive gas environment, avoid influencing the solder-ability or contact resistance of the lead wires. The product shall be used up within 1 year after your receiving goods.

Installation Position

1. The product should be as close to the protected parts as possible. For example, in the motor, the product should be embedded in the upper end of the motor stator coil. If the test conditions are met, the temperature field of the motor should be measured to determine the highest temperature point.
2. During the installation of the product, it is forbidden to strike by gravity, and the product shall not be extruded at the installation position, so as to avoid deformation of the product shell, which will seriously affect the protection performance of the product.

Warnings

Risk of Material Damage and Hot Enclosure

1. The product's side panels may be hot, allow the product to cool before touching.
2. Follow proper mounting instructions including force values. Failure to follow these instructions can result in serious injury, or equipment damage. Hazard of Electric Shock, Explosion or Arch Flash.
3. Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.
4. Disconnect all power before installing or working with this equipment.

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