

## SPECIFICATION FOR APPROVAL

<p><b>CUSTOMER'S APPROVAL CHOP</b></p>  <p>Approval's condition: _____</p> <p>Approved date: _____</p>
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KINDLY RETURN A SET WITH YOUR COMPANY'S OFFICIAL STAMP  
ON APPROVAL OF THIS ITEM

**CUSTOMER'S NAME :** \_\_\_\_\_

**CUSTOMER'S MODEL NO :** \_\_\_\_\_

**CUSTOMER'S PART NO. :** \_\_\_\_\_

**DESCRIPTION :** PTC thermistor for overcurrent protection

**Semitel'S MODEL NO. :** SCT500D

**VERSION :** A

**DATE :** 2018.10.12

**Attachments:**

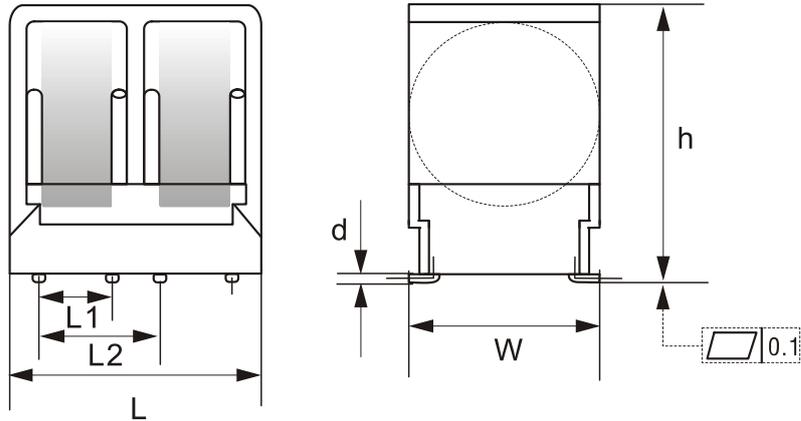
- Product specification
- Sample Qty.:

Prepared By	Checked By	Approved By
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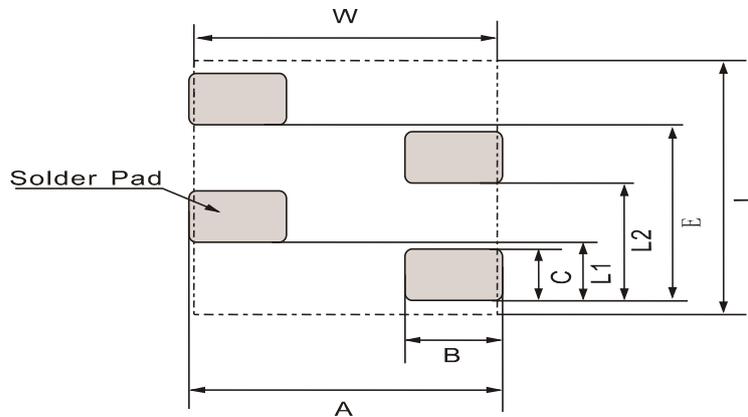
### 1. Structure and Dimension



1-1 Chip Size unit: mm

	h	L	W	L1	d	L2
Max	10.2	8.75	7.3		0.5	
Min						
Typ				2.4		3.9

Symbol: 50R



1-2 Foot spacing size unit: mm

W	L	B	A	C	L1	L2	E
7.3	8.75	3.2	9.2	2.0	2.4	3.9	6.3

Semitel'S MODEL NO. :	SCT500D	CUSTOMER'S MODEL NO.:	
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## 2. Electrical characteristics

Item	Testing condition	Requirement
2-1.Rated zero power resistance R25	50 Ω ± 20% ±1Ω choice	25 ± 2 °C ± 0.5%
2-2.Non-trip current Int	90mA@25°C	25±2°C 220VACrms, 90mA, 1H, PTC ΔR/Rn≤±50%。
	60mA@40°C	40±2°C 220VACrms, 60mA, 1H, PTC ΔR/Rn≤±50%。
2-3.Trip current Int	190 mA	25± 2 °C 220VACrms , 190mA, 300S will be in high impedance
2-4.Trip Time	2.5A→1.5A, ≤0.2S	At=25± 2 °C,Supply voltage 220Vrms
	1A→0.5A, ≤1S	
	0.75A→0.15A, ≤5S	
2-5.Resistance to power frequency current	ΔR/Rn  ≤20%	25 ± 2 °C , 220VACrms, 3A, 1min, turn off 10min , 20times , after test, recover under normal temperature and normal humidity conditions for 4~5 hours, retest the rated zero power resistance value.
2-6.Shock resistance	ΔR/Rn  ≤20%	25 ± 2 °C , 10/1000μs, 1.0KV, 25A, 3min, 30times. after test, recover under normal temperature and normal humidity conditions for 4~5 hours, retest the rated zero power resistance value.
2-7.Resistance to working frequency voltage	ΔR/Rn  ≤20%	25 ± 2 °C , 250VACrms, 3A, 24H, after test, recover under normal temperature and normal humidity conditions for 4~5 hours, retest the rated zero power resistance value.
2-8.Failure Mode	Allow open circuit or high impedance. No allow burn and flashover.	25 ± 2 °C 250VACrms, 0Ω, 15min

Semitel'S MODEL NO. :	SCT500D	CUSTOMER'S MODEL NO.:	
VERSION :	A	CUSTOMER'S PART NO. :	
DATE :	2018-10-12		

2-9.耐电压能力	$ \Delta R/R_n  \leq 20\%$	电源电压 220 VACrms, 频率 50HZ, 起始电流为 3A, 持续时间 10S。然后转换成高压 400VACrms, 持续时间 30S。在常温常湿条件下恢复 4~5 小时, 复测额定零功率电阻值。
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### 3.Reliability

No.	Item	Requirement	Test measurement
3.1	Appearance	No visible damage, clear marking	Visual testing
3.2	Solderability	At least 95% of terminal electrode covered by new solder	Refer to IEC68-2-20(GB2423.28) Ta Dip each lead into 235±5℃ solder for 3~5sec to the 5mm above body
3.3	Resistance to solder heat	$ \Delta R/R_n  \leq 20\%$ No damage observed	Refer to IEC68-2-20(GB2423.28) Tb Dip each lead into 260±5℃ solder for 5±1S to 3mm above body. Recheck Rated zero power resistance after 4-5 hours recovery under normal temperature often wet condition.
3.4	Tensile strength of terminal	$ \Delta R/R_n  \leq 20\%$ No damage observed	Refer to IEC68-2-21(GB2423.29) Test Ua: Pull force 10N, for 10 sec. Test Ub: Bending 90°, pull force 5N, twice Test Uc: Rotating 180°, twice. Recheck Rated zero power resistance after 4-5 hours recovery under normal temperature often wet condition.
3.5	Vibration testing	No visual damage $\Delta R/R_n \leq 20\%$	AT=25±5℃ Amplitude : 0.75mm Vibration frequency from 10Hz to 55Hz, and then to 10Hz within 1min., do 3 times of X、Y、Z directions. After testing, at 25±2℃, put it in still air for 4Hr and retest the R25.
3.6	Collision experiment	No visual damage before and after test $ \Delta R/R_n  \leq 20\%$	According GB2423.6 Eb collision experiment testing, 100m/s <sup>2</sup> 11ms, 60-80/min, 1000times as X,Y directions  After testing, at 25±2℃, put it in still air for 4Hr and retest the R25.

Semitel'S MODEL NO. :	SCT500D	CUSTOMER'S MODEL NO.:	
VERSION :	A	CUSTOMER'S PART NO. :	
DATE :	2018-10-12		

3.7	Steady-state heat and humidity	No visual damage before and after test $ \Delta R/R_n  \leq 20\%$	IEC 68-2-3 (GB/T2423.3) Ca test Temperature: $40^\circ\text{C} \pm 2^\circ\text{C}$ , Relative Humidity: 90%-95% No press voltage Time: 48 hours Recheck Rated zero power resistance after 1-2 hours recovery under normal temperature often wet condition.
3.8	High temperature	No visual damage before and after test $ \Delta R/R_n  \leq 20\%$	According to GB/T2423.2 Ba testing, $70^\circ\text{C}$ , 2H After testing, at $25 \pm 2^\circ\text{C}$ , put it in still air for 4Hr and retest the R25.
3.9	low temperature	No visual damage before and after test $ \Delta R/R_n  \leq 20\%$	According to GB/T2423.2 Ab testing, $-40^\circ\text{C}$ , 2H After testing, at $25 \pm 2^\circ\text{C}$ , put it in still air for 4Hr and retest the R25.
3.10	Quick change of temperature	No visual damage before and after test $ \Delta R/R_n  \leq 20\%$	According to IEC68-2-14(GB2423.22) testing Na, 5 times, lasting 30 mins, and turn for 2-3mins, $-40^\circ\text{C}$ and $70^\circ\text{C}$ . After testing, at $25 \pm 2^\circ\text{C}$ , put it in still air for 4Hr and retest the R25.

#### 4. Standard Packaging

- Bulk : \_\_\_\_\_ PCS / bag
- Tape : \_\_\_\_\_ PCS / tape
- Reel : 400 PCS / reel

#### 5. Storage Condition of Products

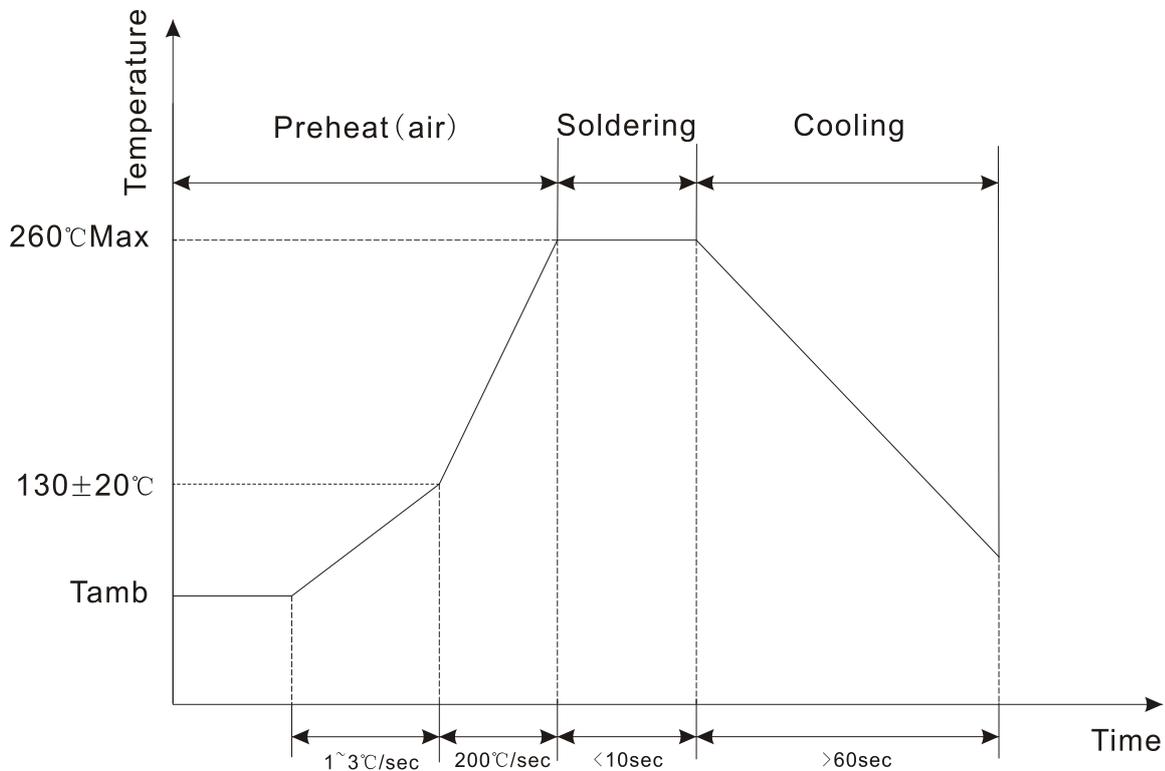
Storage temperature	$-40 \sim 85^\circ\text{C}$
Relative humidity	$\leq 95\% \text{ HR } (+40^\circ\text{C})$
Barometric pressure	86 ~ 106Kpa
Vibration frequency	10 Hz ~ 50Hz ~ 10 Hz
Collision	$100\text{m/s}^2 : 16\text{ms}$
Other requirement	No acid, alkali and reducing atmosphere

#### 6. Recommended Reworking Conditions With Soldering Iron

Welding condition	reference craftwork
Soldering iron temperature	$360^\circ\text{C} (\text{max})$
Soldering time	2sec(max)
Distance to coating material	6mm (min)

Semitel'S MODEL NO. :	SCT500D	CUSTOMER'S MODEL NO.:	
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### 7.Wave Flow Soldering Profile



### 8. Attention & Declaration

8.1 PTC thermistor is designed under normal environment, so do not use in following environment

- A、Corrosiveness or reducibility gas, (Cl<sub>2</sub>、H<sub>2</sub>S、NH<sub>3</sub>、SO<sub>x</sub>、Noxetc.)
- B、volatile gas
- C、The place which directly contact with water and easy to icing
- D、The place which is put brine, oil, liquid medicine.
- E、The place which vibrates badly

8.2.In high impedance state, the temperature itself will surpass 120°C,so confirm whether it has influence to other parts.

8.3 It is ceramic product; fall will make the components fracture and damage because of excessive extrusion

8.4 This specification approval is to assure the quality of each unit, estimate under the situation when the components are fixed to the customer's products.

8.5 PTC thermistor is designed according to the appointed function, so do not violate the rule

8.6 If there is any doubtful point, please notice our company asap.

8.7 If this specification is confirmed by customer, post back according to the cover address, if not, we will treat that the customer has confirmed the specification.

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