



SEA & LAND ELECTRONIC CORP.

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ALPHA-TOP TECHNOLOGY CORP.

[www.alpha-top.cn](http://www.alpha-top.cn)

## APPROVAL SHEET

MODEL NO.: SMD330L-24V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

HEAD OFFICE:

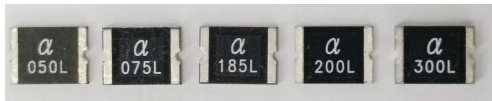
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Submitted by: Chen  
Approved by: YC Lin  
DATE: 10-Apr-24

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## SMD330L-24V

### Features

- Surface Mount Devices
- Lead free device
- Size 7.5\*5.5 mm 0.29\*0.20 inch
- Surface Mount packaging for automated assembly

### Applications

- Almost anywhere there is a low voltage power supply, up to 60V and a load to be protected, including:
- Computer mother board, Modem.
  - Telecommunication equipments.

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### Performance Specification

| Model       | V <sub>max</sub><br>(Vdc) | I <sub>max</sub><br>(A) | I <sub>hold</sub><br>@25°C<br>(A) | I <sub>trip</sub><br>@25°C<br>(A) | P <sub>d</sub><br>Typ.<br>(W) | Maximum<br>Time To Trip<br>Current<br>(A) | Maximum<br>Time To Trip<br>Time<br>(Sec) | Resistance                |                           | Agency Approval |     |
|-------------|---------------------------|-------------------------|-----------------------------------|-----------------------------------|-------------------------------|-------------------------------------------|------------------------------------------|---------------------------|---------------------------|-----------------|-----|
|             |                           |                         |                                   |                                   |                               |                                           |                                          | R <sub>i min</sub><br>(Ω) | R <sub>1 max</sub><br>(Ω) | UL              | TUV |
| SMD330L-24V | 24                        | 40                      | 3.30                              | 6.50                              | 1.5                           | 12.0                                      | 20.0                                     | 0.012                     | 0.045                     |                 |     |

**I<sub>hold</sub>** = Hold Current. Maximum current device will not trip in 25°C still air.

**I<sub>trip</sub>** = Trip Current. Minimum current at which the device will always trip in 25°C still air.

**V<sub>max</sub>** = Maximum operating voltage device can withstand without damage at rated current (I<sub>max</sub>).

**I<sub>max</sub>** = Maximum fault current device can withstand without damage at rated voltage (V<sub>max</sub>).

**P<sub>d</sub>** = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

**R<sub>i min</sub>/max** = Minimum/Maximum device resistance prior to tripping at 25°C.

**R<sub>1 max</sub>** = Maximum device resistance is measured one hour post reflow.

**CAUTION** : Operation beyond the specified ratings may result in damage and possible arcing and flame.

### Environmental Specifications

| Test                                                                     | Conditions                  |
|--------------------------------------------------------------------------|-----------------------------|
| Passive aging                                                            | +85°C, 1000 hrs.            |
| Humidity aging                                                           | +85°C, 85% R.H. , 168 hours |
| Thermal shock                                                            | +85°C to -40°C, 20 times    |
| Resistance to solvent                                                    | MIL-STD-202,Method 215      |
| Vibration                                                                | MIL-STD-202,Method 201      |
| Ambient operating conditions : - 40 °C to +85 °C                         |                             |
| Maximum surface temperature of the device in the tripped state is 125 °C |                             |
| In case of special use, please contact our engineer                      |                             |

### Agency Approvals :

Regulation/Standard:



2015/863/EU



EN14582

### I<sub>hold</sub> Versus Temperature

| Model       | Maximum ambient operating temperature (T <sub>mao</sub> ) vs. hold current (I <sub>hold</sub> ) |       |      |      |      |      |      |      |      |
|-------------|-------------------------------------------------------------------------------------------------|-------|------|------|------|------|------|------|------|
|             | -40°C                                                                                           | -20°C | 0°C  | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| SMD330L-24V | 4.72                                                                                            | 4.22  | 3.72 | 3.30 | 2.70 | 2.45 | 2.16 | 1.91 | 1.47 |



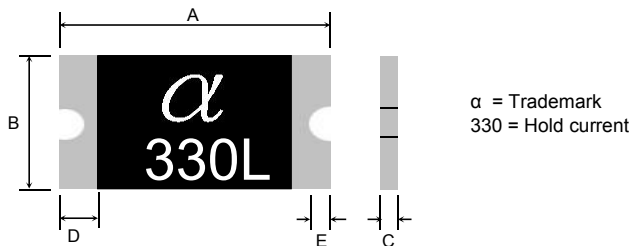
# SMD330L-24V

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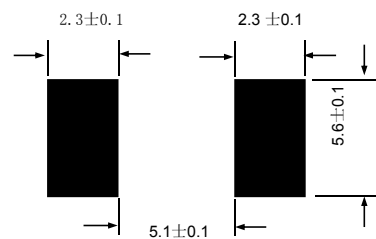
## Construction And Dimension (Unit:mm)

| Model       | A    |      | B    |      | C    |      | D    |      | E    |
|-------------|------|------|------|------|------|------|------|------|------|
|             | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. |
| SMD330L-24V | 6.73 | 7.98 | 4.80 | 5.44 | 0.90 | 1.80 | 0.30 | 0.30 | 0.30 |

## Dimensions & Marking



## Recommended Pad Layout (mm)



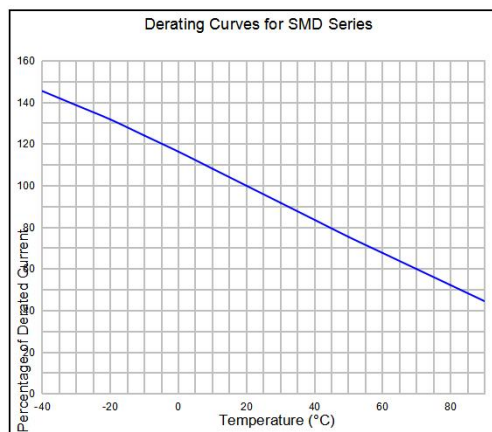
## Termination Pad Characteristics

Terminal pad materials : Tin-plated Nickel-Copper  
Terminal pad solderability : Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

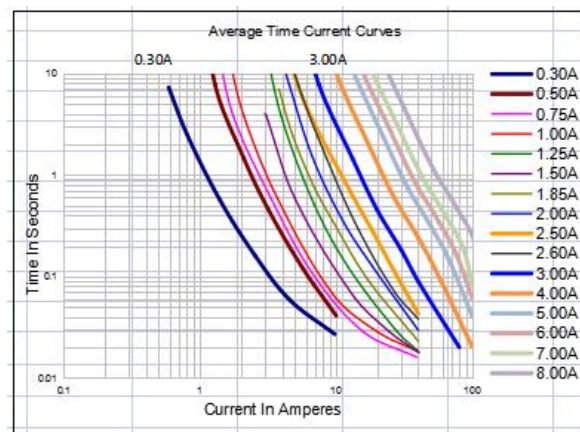
## Rework

Use standard industry practices, the removal device must be replaced with a fresh one.

## Thermal Derating Curve

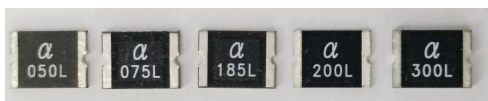


## Typical Time-To-Trip At 25°C



## WARNING:

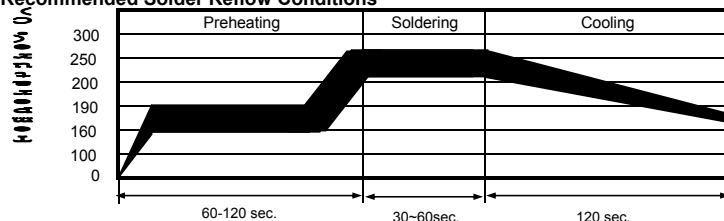
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- Use PPTC with a large inductance in circuit will generate a circuit voltage (L di/dt) above the rated voltage of the PPTC.
- Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
- Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices. PPTC SMD can be cleaned by standard methods.
- Requests that customers comply with our recommended solder pad layouts and recommended reflow profile. Improper board layouts or reflow profile could negatively impact solderability performance of our devices.



## SMD330L-24V

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### Recommended Solder Reflow Conditions

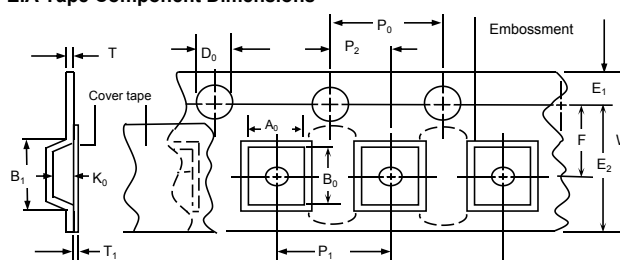


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

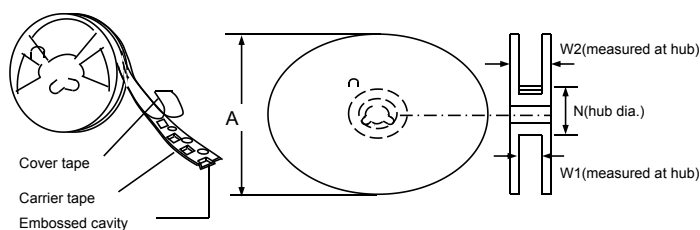
### Tape And Reel Specifications (mm)

| Governing Specifications | EIA 481-2        |
|--------------------------|------------------|
| W                        | 16.0 ± 0.3       |
| P <sub>0</sub>           | 4.0 ± 0.10       |
| P <sub>1</sub>           | 8.0 ± 0.10       |
| P <sub>2</sub>           | 2.0 ± 0.05       |
| A <sub>0</sub>           | 5.70 ± 0.10      |
| B <sub>0</sub>           | 8.00 ± 0.10      |
| B <sub>1</sub> max.      | 12.1             |
| D <sub>0</sub>           | 1.5 ± 0.1, -0    |
| F                        | 7.5 ± 0.05       |
| E <sub>1</sub>           | 1.75 ± 0.10      |
| E <sub>2</sub> min.      | 14.25            |
| Tmax.                    | 0.6              |
| T <sub>1</sub> max.      | 0.1              |
| K <sub>0</sub>           | 0.80 ± 0.1       |
| Leader min.              | 390              |
| Trailer min.             | 160              |
| Reel Dimensions          |                  |
| A max.                   | 178              |
| N min.                   | 60               |
| W <sub>1</sub>           | 16.4 ± 2.0, -0.0 |
| W <sub>2</sub> max.      | 22.4             |

### EIA Tape Component Dimensions



### EIA Reel Dimensions



### Storage And Handling

- Storage conditions : 40°C max, 70% R.H.
- Devices may not meet specified performance if storage conditions are exceeded.

### Order Information

| SMD                        | 330L-24V | Packaging            |
|----------------------------|----------|----------------------|
| Product name               | Hold     | Tape & Reel Quantity |
| Size 7555 mm /2920 inch    | Current  |                      |
| SMD : surface mount device | 3.30A    | 1.500 pcs/reel       |

Tape & reel packaging per EIA481-1

### Labeling Information

