



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.: SMD1210-110-24V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

### MANUFACTURER:

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Submitted by: Chen  
Approved by: YC Lin  
DATE: 20-May-24

SEA & LAND ELECTRONIC CORP.



#### Features

- Surface Mount Devices
- Lead free device
- Size 3.2\*2.5mm/0.12\*0.10 inch
- Surface Mount packaging for automated assembly

#### Applications

Almost anywhere there is a low voltage power supply, up to 30V and a load to be protected, including:  
■ Computer mother board, Modem.  
■ Telecommunication equipments.

## SMD1210-110-24V

Alpha-Top (Sea&Land Alliance)

### Performance Specification

| Model           | Marking | $V_{max}$ | $I_{max}$ | $I_{hold}$   | $I_{trip}$   | $P_d$       | Maximum Time To Trip |               | Resistance           |                   | Agency Approval |     |
|-----------------|---------|-----------|-----------|--------------|--------------|-------------|----------------------|---------------|----------------------|-------------------|-----------------|-----|
|                 |         | (Vdc)     | (A)       | @25°C<br>(A) | @25°C<br>(A) | Max.<br>(W) | Current<br>(A)       | Time<br>(Sec) | $R_{i_{min}}$<br>(Ω) | $R_{1max}$<br>(Ω) | UL              | TUV |
| SMD1210-110-24V | αH      | 24        | 100       | 1.10         | 2.20         | 0.6         | 8.0                  | 0.30          | 0.050                | 0.210             |                 |     |

**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/max</sub>** = 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 |
| SMD1210-110-24V | 1.69  | 1.48  | 1.29 | 1.10 | 0.88 | 0.76 | 0.65 | 0.57 | 0.43 |



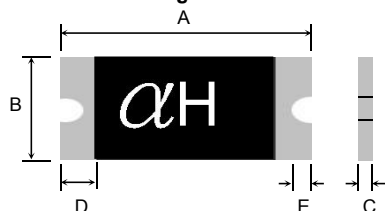
## SMD1210-110-24V

Alpha-Top (Sea&Land Alliance)

### Construction And Dimension (Unit:mm)

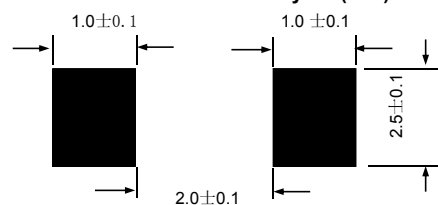
| Model           | A    |      | B    |      | C    |      | D    |      | E    |      |
|-----------------|------|------|------|------|------|------|------|------|------|------|
|                 | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| SMD1210-110-24V | 3.00 | 3.43 | 2.35 | 2.80 | 0.50 | 1.20 | 0.30 | 0.30 | 0.10 | 0.10 |

### Dimensions & Marking



α = Trademark  
H = Part identification

### Recommended Pad Layout (mm)



### Termination Pad Characteristics

Terminal pad materials :

Tin-plated Nickel-Copper

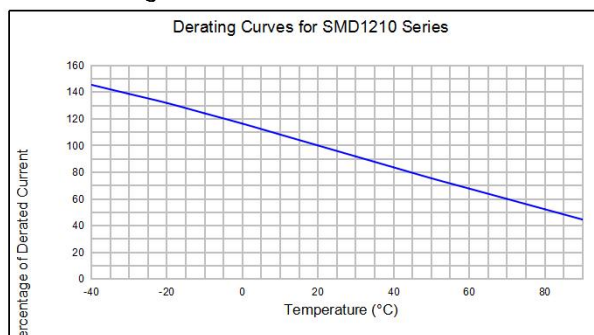
Terminal pad solderability :

Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

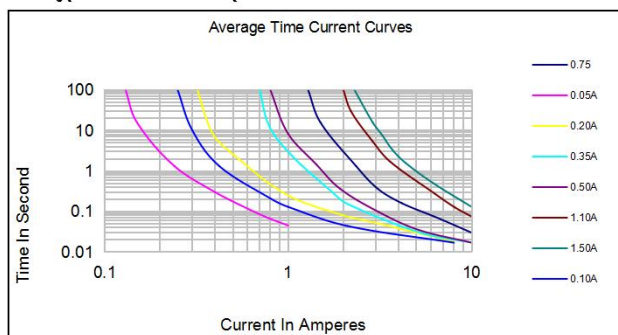
### Rework

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:

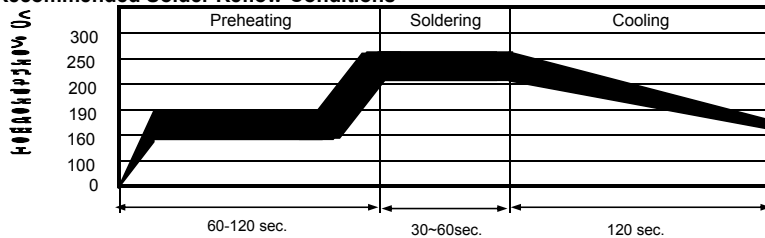
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events 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.



## SMD1210-110-24V

Alpha-Top (Sea&Land Alliance)

### Recommended Solder Reflow Conditions

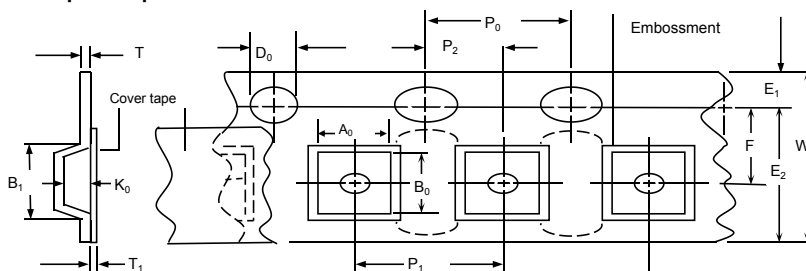


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

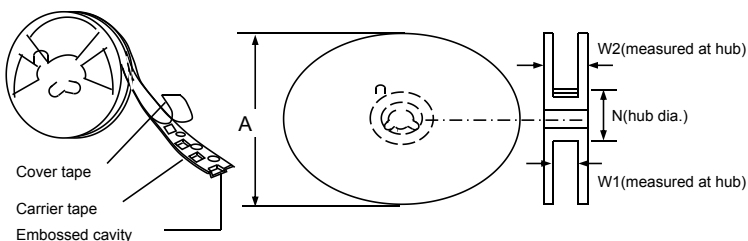
### Tape And Reel Specifications (mm)

| Governing Specifications | EIA 481-2       |
|--------------------------|-----------------|
| W                        | 8.0 ± 0.20      |
| P0                       | 4.0 ± 0.10      |
| P1                       | 4.0 ± 0.10      |
| P2                       | 2.0 ± 0.10      |
| A0                       | 2.82 ± 0.10     |
| B0                       | 3.52 ± 0.10     |
| B1max.                   | 4.35            |
| D0                       | 1.5 + 0.1, -0.0 |
| F                        | 7.5 ± 0.05      |
| E1                       | 1.75 ± 0.10     |
| E2min.                   | 6.25            |
| Tmax.                    | 0.6             |
| T1max.                   | 0.1             |
| K0                       | 0.90 ± 0.1      |
| Leader min.              | 390             |
| Trailer min.             | 160             |
| Reel Dimensions          |                 |
| A max.                   | 178             |
| N min.                   | 50              |
| W1                       | 8.4 + 1.5, -0.0 |
| W2max.                   | 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

| SMD1210                    | 110-24V | Packaging            |
|----------------------------|---------|----------------------|
| Product name               | Hold    | Tape & Reel Quantity |
| Size 3225 mm / 1210 inch   | Current | 4,500 pcs/reel       |
| SMD : surface mount device | 1.10A   |                      |

Tape & reel packaging per EIA481-1

### Labeling Information

