SEA & LAND ELECTRONIC CORP.
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ALPHA-TOP TECHNOLOGY CORP.
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# APPROVAL SHEET

MODEL NO.: SMD1210-010

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE



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| | |
|---|---|
| Submitted by: | Chung Cheng |
| Approved by: | YC Lin |
| DATE: | 2-Mar-22 |

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.

# SMD1210-010

Alpha-Top (Sea&Land Alliance)

**Performance Specification**

| Model | Marking | $V_{max}$ (Vdc) | $I_{max}$ (A) | $I_{hold}$ @25°C (A) | $I_{trip}$ @25°C (A) | $P_d$ Max. (W) | Maximum Time To Trip Current (A) | Maximum Time To Trip Time (Sec) | Resistance $Ri_{min}$ (Ω) | Resistance R1max (Ω) | Agency Approval UL | Agency Approval TUV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMD1210-010 | αB | 30 | 100 | 0.10 | 0.30 | 0.6 | 0.50 | 0.60 | 0.800 | 15.000 | | |

**Ihold** = Hold Current. Maximum current device will not trip in 25°C still air.
**Itrip** = Trip Current. Minimum current at which the device will always trip in 25°C still air.
**Vmax** = Maximum operating voltage device can withstand without damage at rated current (Imax).
**Imax** = Maximum fault current device can withstand without damage at rated voltage (Vmax).
**Pd** = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
**Rimin/max** = Minimum/Maximum device resistance prior to tripping at 25°C.
**$R1_{max}$** = 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 | Resistance change |
|---|---|---|
| Passive aging | +85°C, 1000 hrs. | ±5% typical |
| Humidity aging | +85°C, 85% R.H. , 168 hours | ±5% typical |
| Thermal shock | +85°C to -40°C, 20 times | ±33% typical |
| Resistance to solvent | MIL-STD-202,Method 215 | No change |
| Vibration | MIL-STD-202,Method 201 | No change |
| Ambient operating conditions : - 40 °C to +85 °C | | |
| Maximum surface temperature of the device in the tripped state is 125 °C | | |



**Agency Approvals :**

**Regulation/Standard:** Pb RoHS **2015/863/EU**

HF **EN14582**

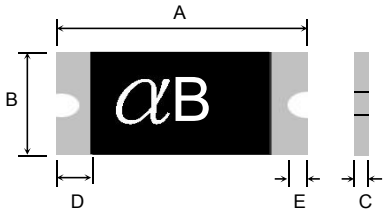
**$I_{hold}$ Versus Temperature**

| Model | Maximum ambient operating temperature ($T_{mao}$) vs. hold current ($I_{hold}$) -40°C | -20°C | 0°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
|---|---|---|---|---|---|---|---|---|---|
| SMD1210-010 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.07 | 0.06 | 0.05 | 0.03 |

**Construction And Dimension (Unit:mm)**

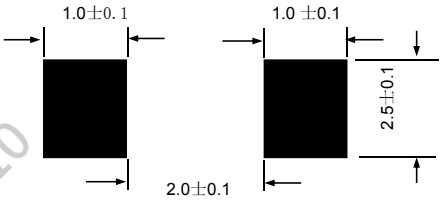
| Model | A | | B | | C | | D | E |
|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Min. |
| SMD1210-010 | 3.00 | 3.43 | 2.35 | 2.80 | 0.40 | 0.90 | 0.30 | 0.10 |

**Dimensions & Marking**




α = Trademark
B = Part identification

**Recommended Pad Layout (mm)**



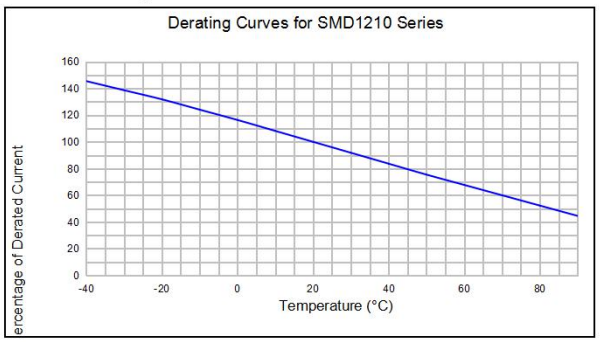

**Termination Pad Characteristics**

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

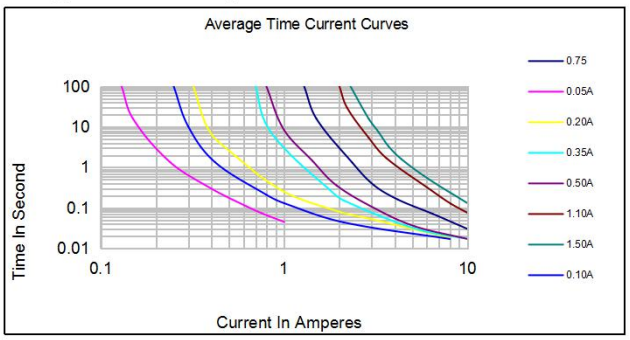
**Rework**

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.

## Recommended Solder Reflow Conditions

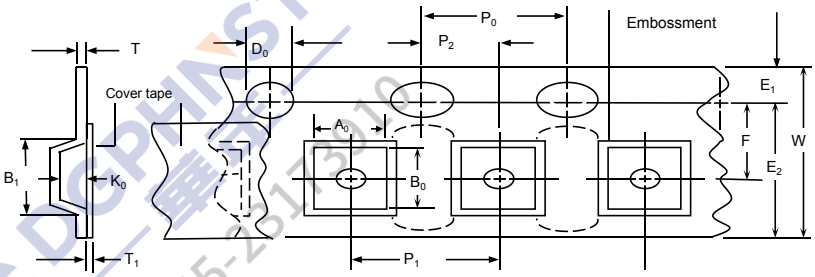

- Recommended reflow methods：IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.

Note：If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

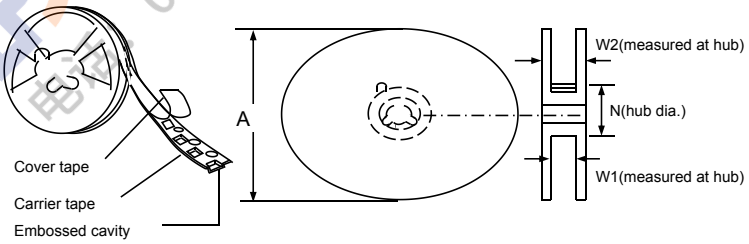
## Tape And Reel Specifications (mm)

| 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

## Packaging

| SMD1210 | 010 | Tape & Reel Quantity |
|---|---|---|
| Product name | Hold | |
| Size 3225 mm / 1210 inch | Current | 4,500 pcs/reel |
| SMD：surface mount device | 0.10A | |

Tape & reel packaging per EIA481-1

Labeling Information