



SEA & LAND ELECTRONIC CORP.

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ALPHA-TOP TECHNOLOGY CORP.

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## APPROVAL SHEET

MODEL NO.: SMD1210-010-60V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

HEAD OFFICE:

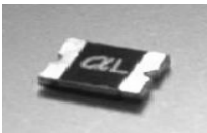
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Approved by: YC Lin  
DATE: 11-Apr-13

SEA & LAND ELECTRONIC CORP.



SMD1210-010-60V

**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.

Alpha-Top (Sea&Land Alliance)

**Performance Specification**

Model	Marking	V <sub>max</sub> (Vdc)	I <sub>max</sub> (A)	I <sub>hold</sub> @25°C (A)	I <sub>trip</sub> @25°C (A)	P <sub>d</sub> Typ. (W)	Maximum Time To Trip		Resistance	
							Current (A)	Time (Sec)	R <sub>i_min</sub> (Ω)	R <sub>1_max</sub> (Ω)
SMD1210-010-60V	α B	60	100	0.1	0.30	0.6	0.5	0.60	0.800	15.000

**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>imin/max</sub>** = Minimum/Maximum device resistance prior to tripping at 25°C.  
**R<sub>1max</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	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 :

UL pending

Regulation/Standard:



2002/95/EC



EN14582

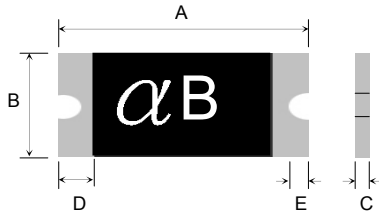
**I<sub>hold</sub> Versus Temperature**

Model	Maximum ambient operating temperature (T <sub>mac</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
SMD1210-010-60V	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03

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

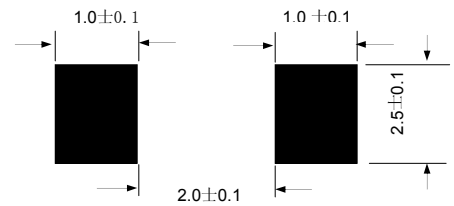
Model	A		B		C		D		E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
SMD1210-010-60V	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.80	0.10

**Dimensions & Marking**



α = Trademark  
B = Part identification

**Recommended Pad Layout (mm)**



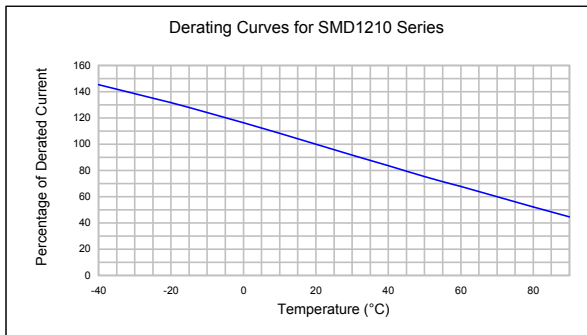
**Termination Pad Characteristics**

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

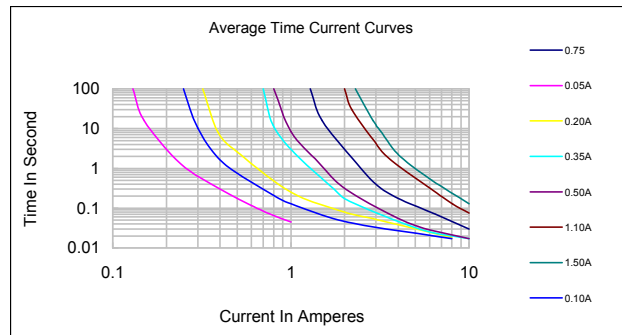
**Rework**

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

**Thermal Derating Curve**



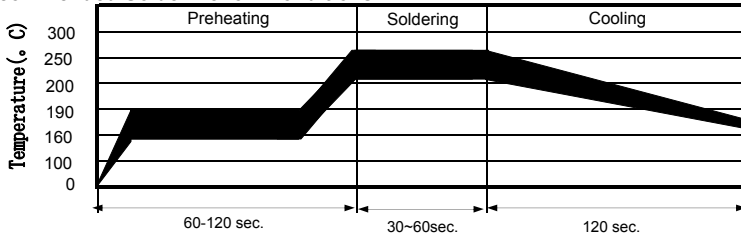
**Typical Time-To-Trip At 25°C**



**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**

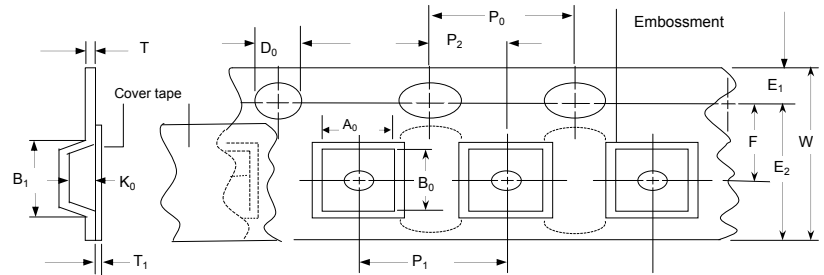


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

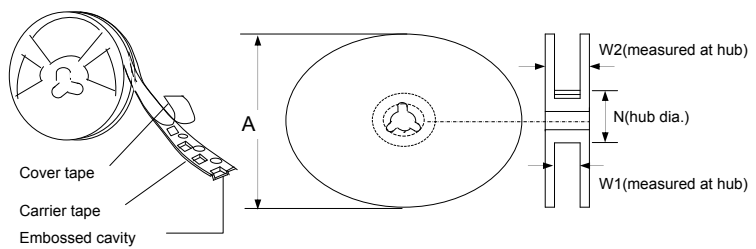
**Tape And Reel Specifications (mm)**

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**

SMD1210	'010	-60V	Packaging	Tape & Reel Quantity
Product name	Hold	Max		
Size 3225 mm / 1210 inch	Current			4,500 pcs/reel
SMD : surface mount device	0.10A			

Tape & reel packaging per EIA481-1

**Labeling Information**

**Sea & Land Electronic Corp.**

HF   Pb   RoHS

Model:  
Part no.:  
Spec.:  
Lot no.:  
Q'ty:

倉儲: 密封! 溫度: 18~33°C/濕度: 30~60% A

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