



SEA & LAND ELECTRONIC CORP.

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ALPHA-TOP TECHNOLOGY CORP.

## APPROVAL SHEET

MODEL NO.: nSMD110-16V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

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Approved by: YC Lin  
DATE: 1-Mar-22

SEA & LAND ELECTRONIC CORP.



## nSMD110-16V

### Features

- Surface Mount Devices
- Lead free device
- Size 3.2\*1.6 mm/0.12\*0.06 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, USB hub
  - PDAs & Charger, Analog & digital line card
  - Digital cameras, Disk drivers, CD-ROMs,

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 (A)	@25°C (A)	Max. (W)	Current (A)	Time (Sec)	$R_{imin}$ (Ω)	$R1max$ (Ω)	UL	TUV
nSMD110-16V	αH	16.0	100	1.10	2.20	0.6	8.00	0.30	0.050	0.250	✓	

**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</sub>/max** = 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 :



E201504(Alpha-Top)/E319079(Sea&Land)

Regulation/Standard:



2015/863/EU



EN14582

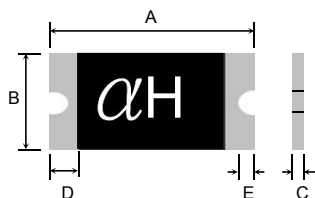
### I<sub>hold</sub> Versus Temperature

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
nSMD110-16V	1.600	1.450	1.300	1.100	0.950	0.800	0.720	0.660	0.550

## Construction And Dimension (Unit:mm)

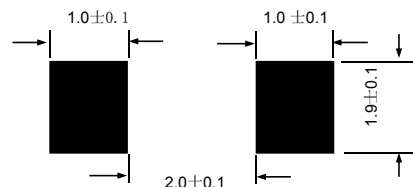
Model	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
nSMD110-16V	3.00	3.50	1.50	1.80	0.50	1.20	0.15	0.15	0.10	0.10

## Dimensions & Marking



α = Trademark  
H = Part identification

## Recommended Pad Layout (mm)



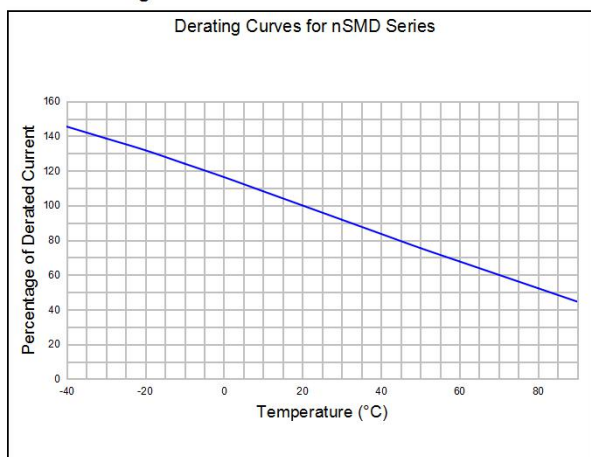
## Termination Pad Characteristics

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

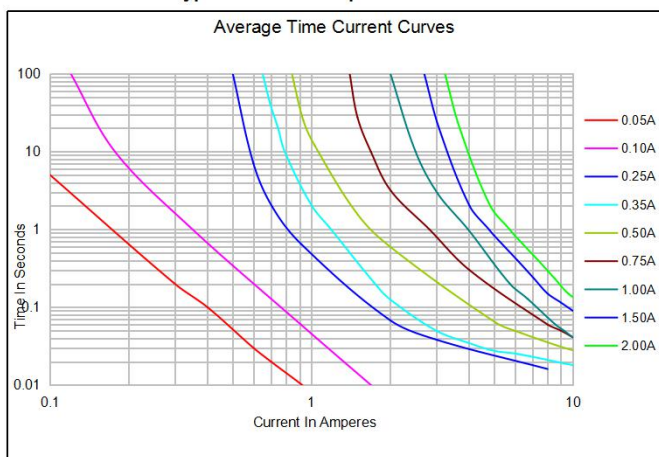
## Rework

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

## Thermal Derating Curve



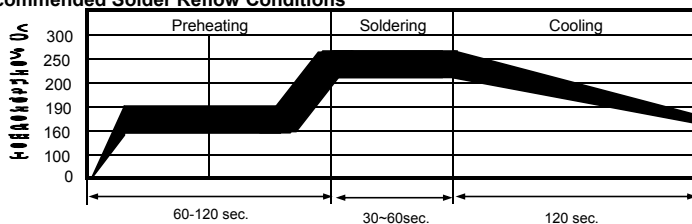
## Typical Time-To-Trip At 25°C



## 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.

## Recommended Solder Reflow Conditions

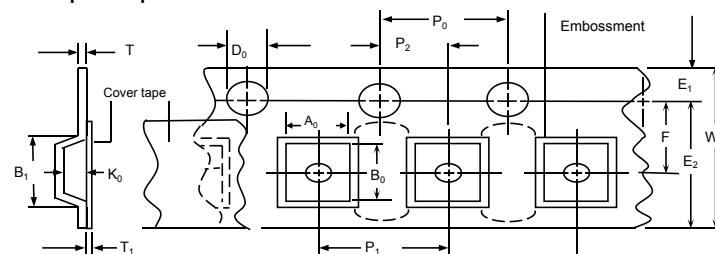


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

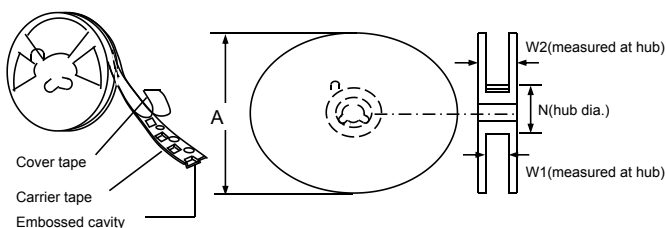
## Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	8.15 ± 0.3
P0	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.05
A0	1.95 ± 0.10
B0	3.45 ± 0.10
B1max.	4.35
D0	1.5 + 0.1, -0
F	3.5 ± 0.05
E1	1.75 ± 0.10
E2min.	6.25
Tmax.	0.6
T1max.	0.1
K0	1.04 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	9 ± 0.5
W2	12.6 ± 0.5

## 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

nSMD	110-16V	Packaging	Tape & Reel Quantity
Product name	Hold		
Size 3216 mm / 1206 inch	Current		
SMD : surface mount device	1.10A		3,500 pcs/reel

Tape & reel packaging per EIA481-1

## Labeling Information

