



SEA & LAND ELECTRONIC CORP.

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ALPHA-TOP TECHNOLOGY CORP.

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## APPROVAL SHEET

MODEL NO.: SMD500L-16V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Submitted by: Chung Cheng  
Approved by: YC Lin  
DATE: 28-May-21

SEA & LAND ELECTRONIC CORP.



#### 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.

## SMD500L-16V

Alpha-Top (Sea & Land Alliance)

### 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 Time To Trip |               | Resistance                |                           | Agency Approval |     |
|-------------|---------------------------|-------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|---------------|---------------------------|---------------------------|-----------------|-----|
|             |                           |                         |                                   |                                   |                               | Current<br>(A)       | Time<br>(Sec) | R <sub>i min</sub><br>(Ω) | R <sub>1 max</sub><br>(Ω) | UL              | TUV |
| SMD500L-16V | 16                        | 100                     | 5.00                              | 10.00                             | 1.8                           | 20.0                 | 10.0          | 0.005                     | 0.031                     |                 |     |

**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                  | 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:



2015/863/EU

EN14582

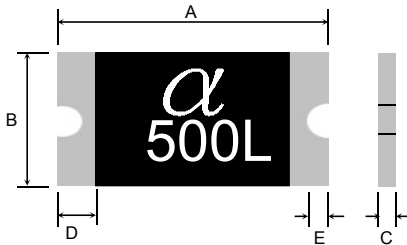
### I<sub>hold</sub> Versus Temperature

| 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 |
| SMD500L-16V | 7.55  | 6.70  | 5.85 | 5.00 | 4.15 | 3.75 | 3.30 | 2.90 | 2.25 |

### Construction And Dimension (Unit:mm)

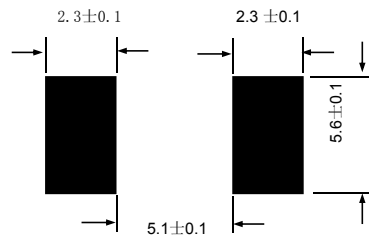
| Model       | A    |      | B    |      | C    |      | D    |
|-------------|------|------|------|------|------|------|------|
|             | Min. | Max. | Min. | Max. | Min. | Max. | Min. |
| SMD500L-16V | 6.73 | 7.98 | 4.80 | 5.44 | 0.06 | 1.30 | 0.30 |

### Dimensions & Marking



α = Trademark  
500 = Hold current

### Recommended Pad Layout (mm)



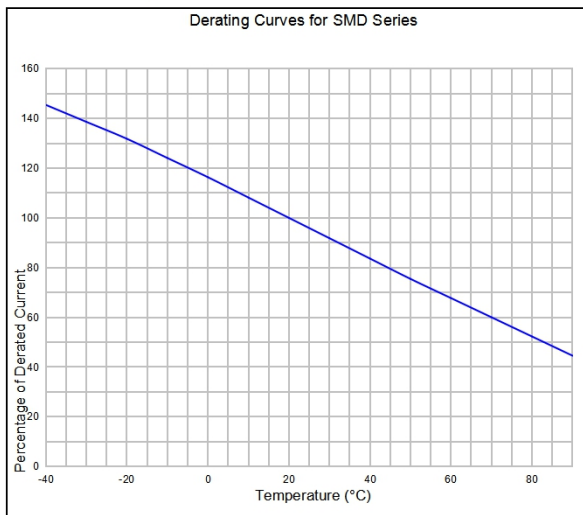
### Termination Pad Characteristics

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

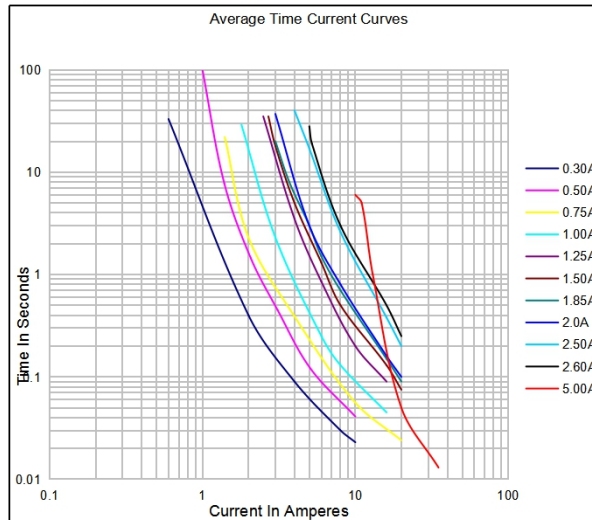
### Rework

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

### Thermal Derating Curve



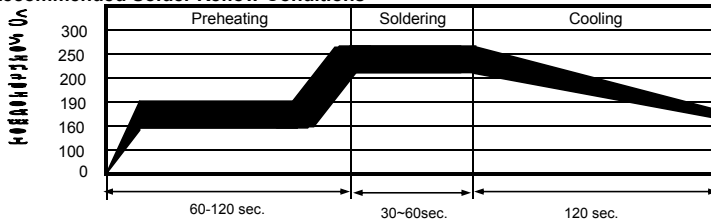
### Typical Time-To-Trip At 25°C



### 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

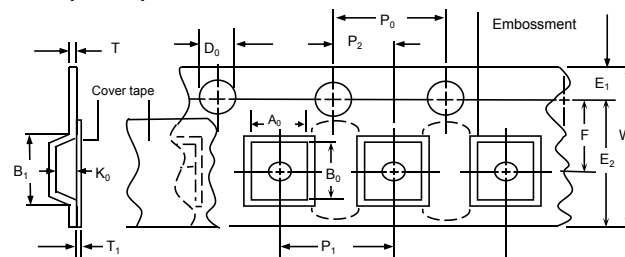


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

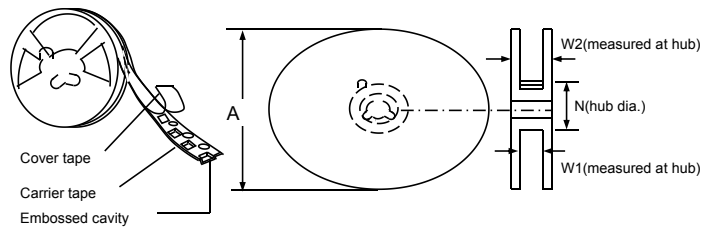
### Tape And Reel Specifications (mm)

| Governing Specifications | EIA 481-2        |
|--------------------------|------------------|
| W                        | 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              |
| <b>Reel Dimensions</b>   |                  |
| 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                        | 500L-16V | Packaging            |
|----------------------------|----------|----------------------|
| Product name               | Hold     | Tape & Reel Quantity |
| Size 7555 mm /2920 inch    | Current  |                      |
| SMD : surface mount device | 5.00A    |                      |

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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