



SEA & LAND ELECTRONIC CORP.

[www.sealand-pptc.com](http://www.sealand-pptc.com)

ALPHA-TOP TECHNOLOGY CORP.

[www.alpha-top.cn](http://www.alpha-top.cn)

## APPROVAL SHEET

MODEL NO.: SMD500L-30V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Submitted by: Chen  
Approved by: YC Lin  
DATE: 28-Nov-23

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-30V

Alpha-Top (Sea & Land Alliance)

#### Performance Specification

Model	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		Agency Approval	
						Current (A)	Time (Sec)	R <sub>i min</sub> (Ω)	R <sub>1 max</sub> (Ω)	UL	TUV
SMD500L-30V	30	40	5.00	10.00	1.8	20.0	10.0	0.005	0.031		
<p><b>I<sub>hold</sub></b> = Hold Current. Maximum current device will not trip in 25°C still air.</p> <p><b>I<sub>trip</sub></b> = Trip Current. Minimum current at which the device will always trip in 25°C still air.</p> <p><b>V<sub>max</sub></b> = Maximum operating voltage device can withstand without damage at rated current (I<sub>max</sub>).</p> <p><b>I<sub>max</sub></b> = Maximum fault current device can withstand without damage at rated voltage (V<sub>max</sub>).</p> <p><b>P<sub>d</sub></b> = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.</p> <p><b>R<sub>i min</sub>/max</b> = Minimum/Maximum device resistance prior to tripping at 25°C.</p> <p><b>R<sub>1 max</sub></b> = Maximum device resistance is measured one hour post reflow.</p> <p><b>CAUTION</b> : Operation beyond the specified ratings may result in damage and possible arcing and flame.</p>											

#### 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
SMD500L-30V	7.55	6.70	5.85	5.00	4.15	3.75	3.30	2.90	2.25



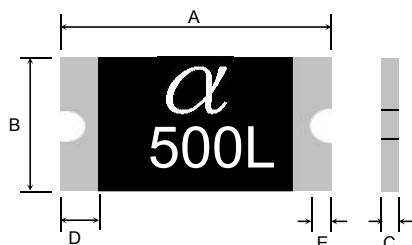
## SMD500L-30V

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### Construction And Dimension (Unit:mm)

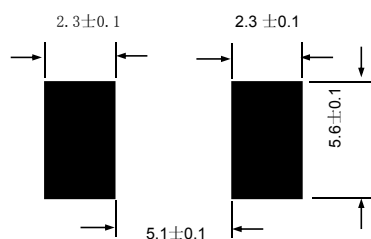
Model	A		B		C		D		E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
SMD500L-30V	6.73	7.98	4.80	5.44	0.60	1.30	0.30	0.30	0.30

### Dimensions & Marking



α = Trademark  
500 = Hold current

### Recommended Pad Layout (mm)



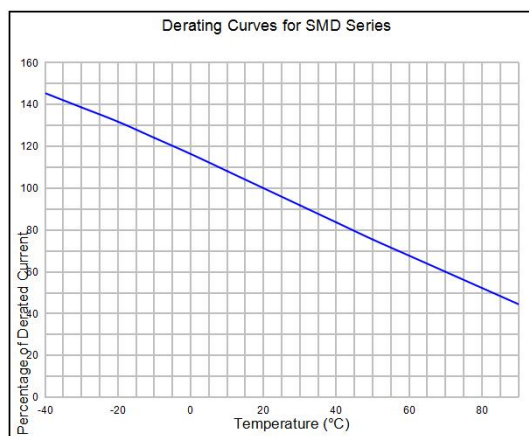
### Termination Pad Characteristics

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

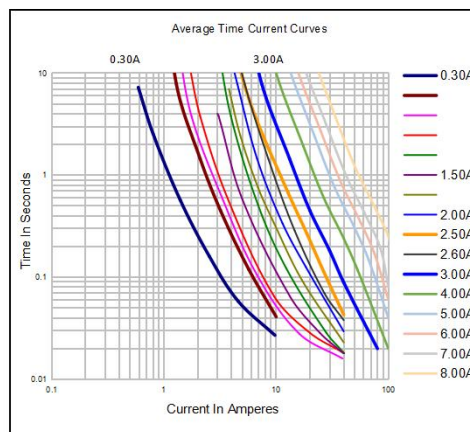
### Rework

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:

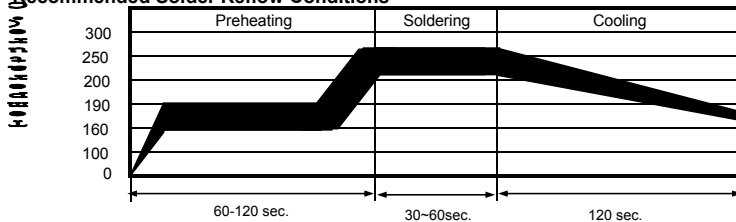
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events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



## SMD500L-30V

Alpha-Top (Sea & Land Alliance)

### Recommended Solder Reflow Conditions

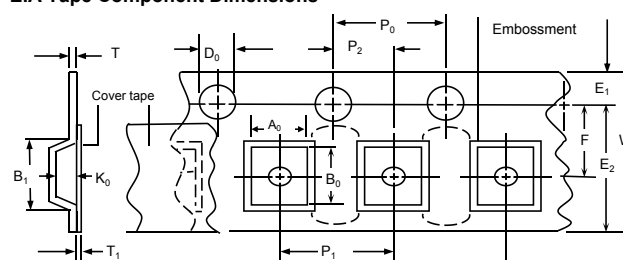


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

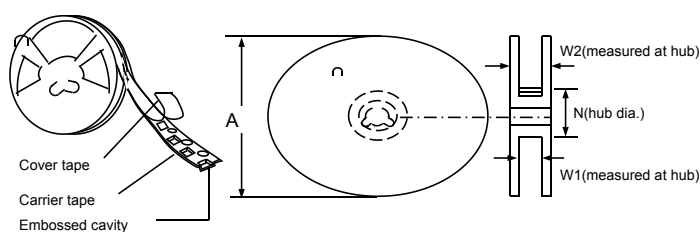
### Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-2
W	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
Reel Dimensions	
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-30V	Packaging
Product name	Hold	Tape & Reel Quantity
Size 7555 mm /2920 inch	Current	1500 pcs/reel
SMD : surface mount device	5.00A	

Tape & reel packaging per EIA481-1

### Labeling Information

