



SEA & LAND ELECTRONIC CORP.

www.sealand-pptc.com

ALPHA-TOP TECHNOLOGY CORP.

www.alpha-top.cn

APPROVAL SHEET

MODEL NO.:	SMD500L-24V
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CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Submitted by:	Chen
Approved by:	YC Lin
DATE:	10-Apr-24

SEA & LAND ELECTRONIC CORP.



SMD500L-24V

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.

Alpha-Top (Sea & Land Alliance)

Performance Specification

Model	V _{max} (Vdc)	I _{max} (A)	I _{hold} @25°C (A)	I _{trip} @25°C (A)	P _d Typ. (W)	Maximum Time To Trip		Resistance		Agency Approval	
						Current (A)	Time (Sec)	R _i _{min} (Ω)	R _i _{max} (Ω)	UL	TUV
SMD500L-24V	24	100	5.00	10.00	1.8	20.0	10.0	0.005	0.031	✓	

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

V_{max} = Maximum operating voltage device can withstand without damage at rated current (I_{max}).

I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).

P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

R_i_{min/max} = Minimum/Maximum device resistance prior to tripping at 25°C.

R_i_{1max} = 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
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 :



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

Regulation/Standard:



2015/863/EU

EN14582

I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T _{max}) vs. hold current (I _{hold})								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD500L-24V	7.55	6.70	5.85	5.00	4.15	3.75	3.30	2.90	2.25



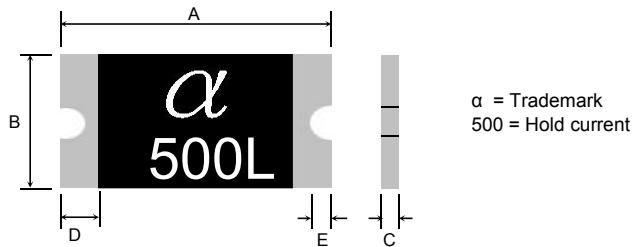
SMD500L-24V

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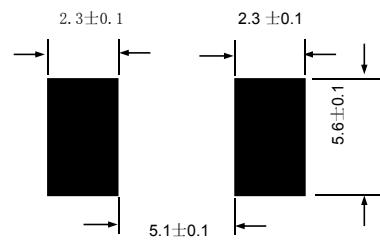
Construction And Dimension (Unit:mm)

Model	A		B		C		D		E	
	Min.	Max.								
SMD500L-24V	6.73	7.98	4.80	5.44	0.90	1.80	0.30	0.30	0.30	0.30

Dimensions & Marking



Recommended Pad Layout (mm)



Termination Pad Characteristics

Terminal pad materials :

Tin-plated Nickel-Copper

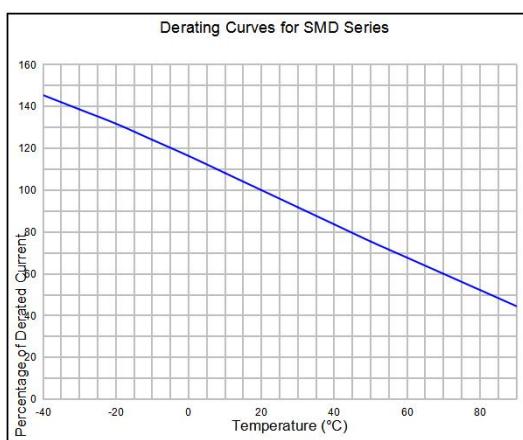
Terminal pad solderability :

Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

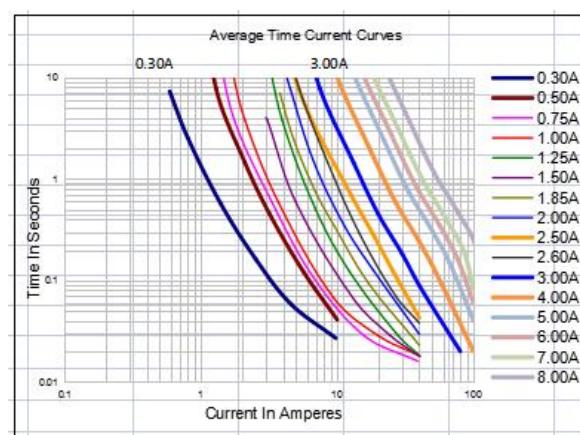
Rework

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:

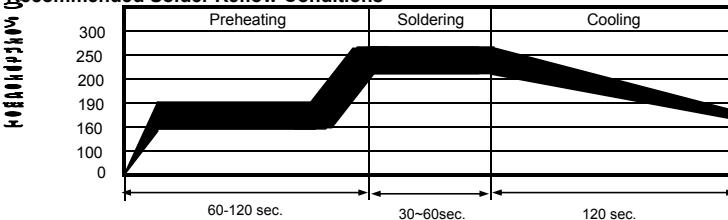
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events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



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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).

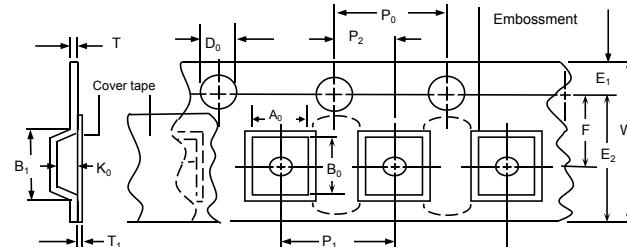
• Devices can be cleaned using standard method and solvents.

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

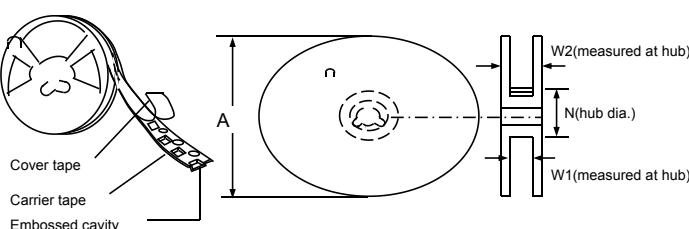
Tape And Reel Specifications (mm)

Governing Specifications		EIA 481-2
W		16.0 ± 0.3
P ₀		4.0 ± 0.10
P ₁		8.0 ± 0.10
P ₂		2.0 ± 0.05
A ₀		5.70 ± 0.10
B ₀		8.00 ± 0.10
B ₁ max.		12.1
D ₀		1.5 + 0.1, -0
F		7.5 ± 0.05
E ₁		1.75 ± 0.10
E ₂ min.		14.25
Tmax.		0.6
T ₁ max.		0.1
K ₀		0.80 ± 0.1
Leader min.		390
Trailer min.		160
Reel Dimensions		
A max.		178
N min.		60
W ₁		16.4 + 2.0, -0.0
W ₂ 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-24V	Packaging	Tape & Reel Quantity
Product name Size 7555 mm /2920 inch SMD : surface mount device	Hold Current 5.00A		1.500 pcs/reel

Tape & reel packaging per EIA481-1

Labeling Information

