



SEA & LAND ELECTRONIC CORP.

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ALPHA-TOP TECHNOLOGY CORP.

WWW.ALPHA-TOP.CN

APPROVAL SHEET

MODEL NO.:	mSMD300-16V
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CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Approved by:	YC Lin
DATE:	24-Feb-22

SEA & LAND ELECTRONIC CORP.



mSMD300-16V

Features

- Surface Mount Devices
- Lead free device
- Size 4.5*3.2 mm/0.18*0.12 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 drives, CD-ROMs,

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
mSMD300-16V	16	100	3.00	5.00	0.8	8.0	4.00	0.012	0.040	✓	✓

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_{max} = 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		
In case of special use, please contact our engineer		

Agency Approvals :



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



R 50481056



2015/863/EU



EN14582

I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T _{mao}) vs. hold current (I _{hold})								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
mSMD300-16V	4.15	3.76	3.46	3.00	2.55	2.28	2.01	1.61	1.33

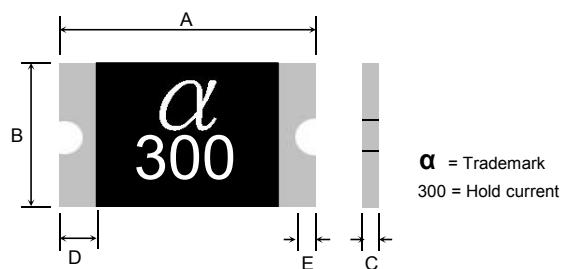
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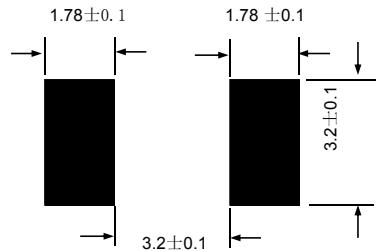
Construction And Dimension (Unit:mm)

Model	A	B	C	D	E
	Min.	Max.	Min.	Max.	Min.
mSMD300-16V	4.37	4.73	3.07	3.41	0.90

Dimensions & Marking



Recommended Pad Layout (mm)



Termination Pad Characteristics

Terminal pad materials :

Tin-plated Nickel-Copper

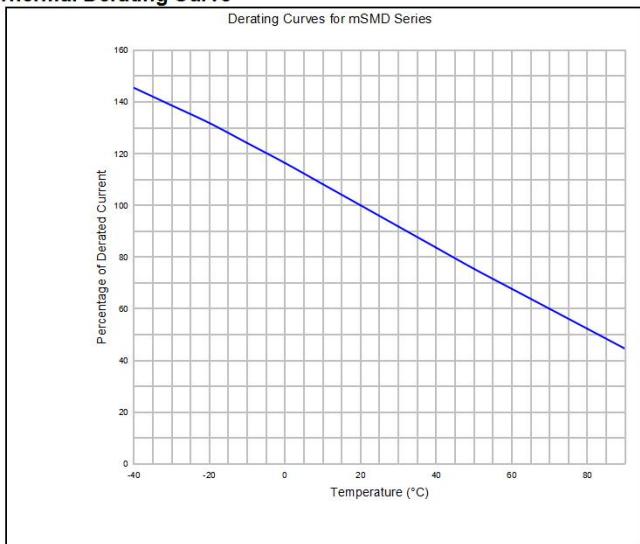
Terminal pad solderability :

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

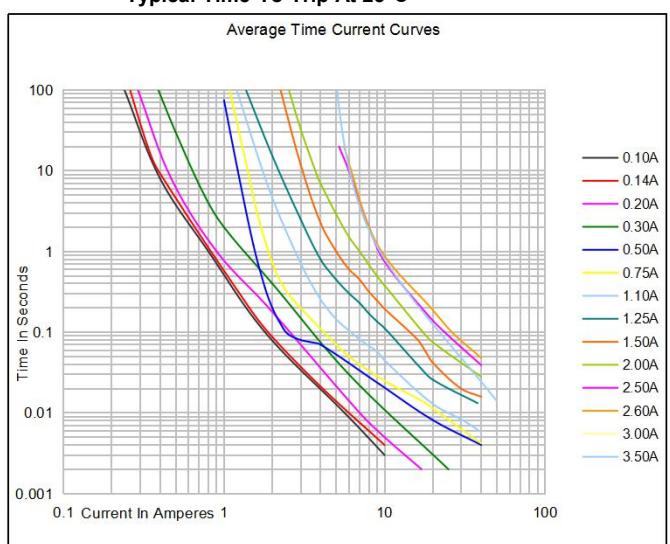
Rework

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

Thermal Derating Curve



Typical Time-To-Trip At 25°C



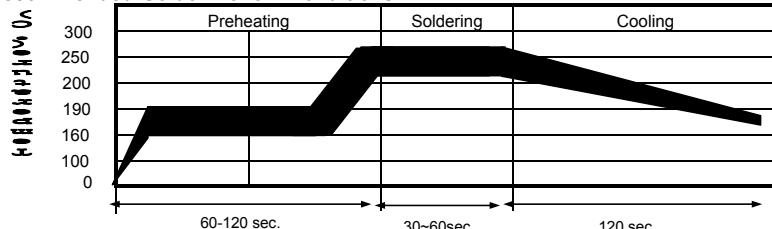
WARNING:

- 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.

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Recommended Solder Reflow Conditions



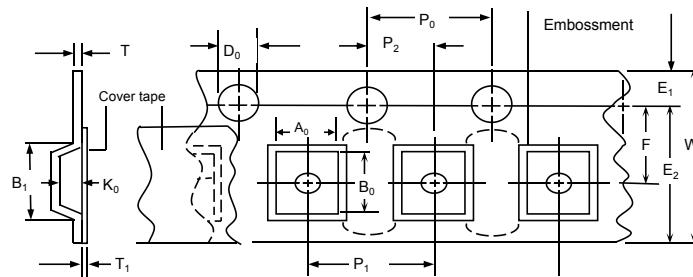
- Recommended reflow methods : IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.

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

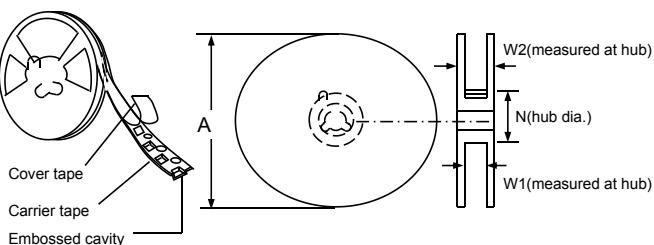
Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	12 ± 0.3
P0	4.0 ± 0.10
P1	8.0 ± 0.10
P2	2.0 ± 0.05
A0	3.5 ± 0.23
B0	5.1 ± 0.15
B1max.	5.9
D0	1.5 + 0.1, -0
F	5.5 ± 0.05
E1	1.75 ± 0.10
E2min.	10.25
Tmax.	0.6
T1max.	0.1
K0	0.9 ± 0.15
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	12.4 + 2.0, -0.0
W2max.	18.4

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

mSMD	300-16V	Packaging	Tape & Reel Quantity
Product name Size 4532mm/1812 inch SMD : surface mount device	Hold Current 3.00A		1,500 pcs/reel

Tape & reel packaging per EIA481-1

Labeling Information

