



SEA & LAND ELECTRONIC CORP.

www.sealand-pptc.com

ALPHA-TOP TECHNOLOGY CORP.

www.alpha-top.cn

APPROVAL SHEET

MODEL NO.: mSMD005-100V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Submitted by: Chen
Approved by: YC Lin
DATE: 11-Jun-24

SEA & LAND ELECTRONIC CORP.



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 drivers, CD-ROMs,

mSMD005-100V

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Performance Specification

Model	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)	Typ. (W)	Current (A)	Time (Sec)	$R_{i_{min}}$ (Ω)	$R_{1_{max}}$ (Ω)	UL	TUV
mSMD005-100V	100	100	0.05	0.20	0.8	0.5	1.00	2.000	25.000		

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.
 $R_{imin/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.
 $R_{1_{max}}$ = 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
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_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T_{mso}) vs. hold current (I_{hold})								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
mSMD005-100V	0.085	0.076	0.063	0.050	0.043	0.038	0.035	0.030	0.026



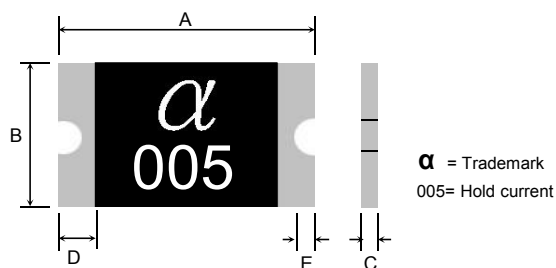
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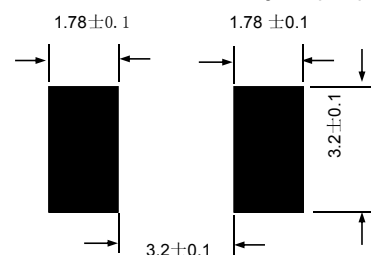
Construction And Dimension (Unit:mm)

Model	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
mSMD005-100V	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.30	0.25	0.25

Dimensions & Marking



Recommended Pad Layout (mm)



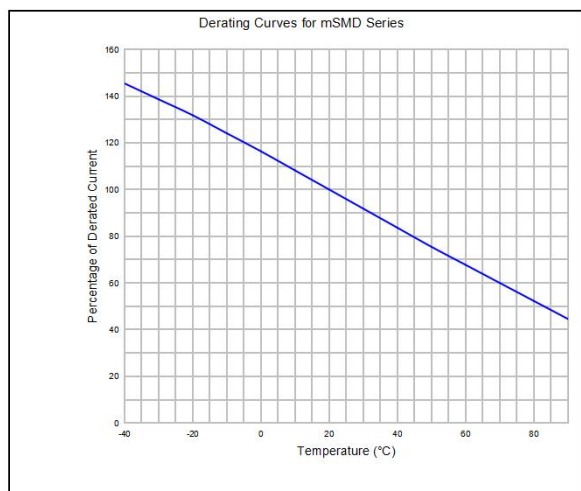
Termination Pad Characteristics

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

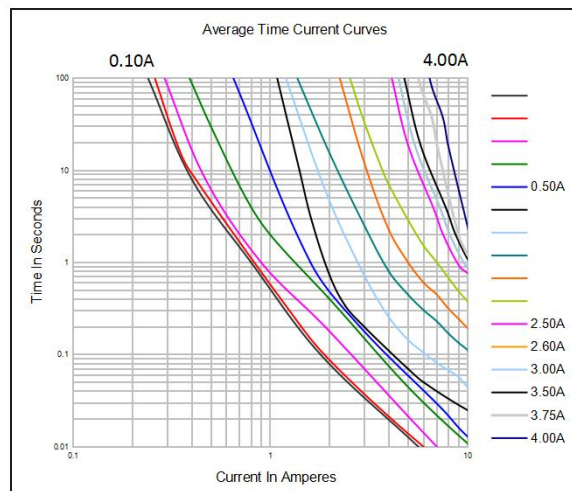
Rework

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:

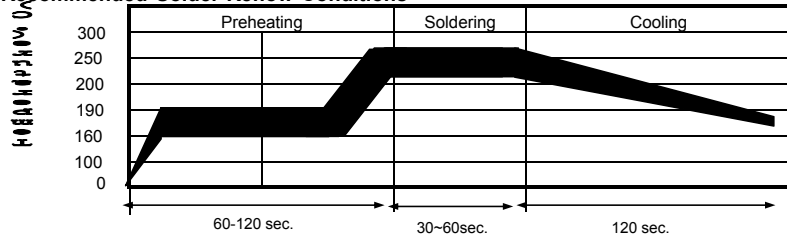
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events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

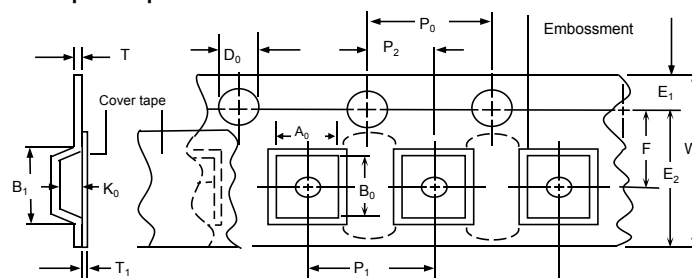


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

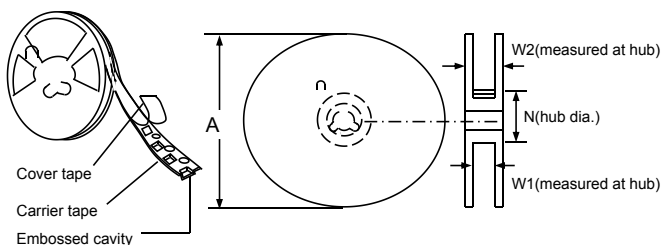
Tape And Reel Specifications (mm)

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	005-100V	Packaging
Product name	Hold	Tape & Reel Quantity
Size 4532mm/1812 inch	Current	1,500 pcs/reel
SMD : surface mount device	0.05A	

Tape & reel packaging per EIA481-1

Labeling Information

