



SEA & LAND ELECTRONIC CORP.

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ALPHA-TOP TECHNOLOGY CORP.

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

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## APPROVAL SHEET

MODEL NO.:

SMD0805-100-12V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Submitted by:

Chen

Approved by:

YC Lin

DATE:

6-Jan-23

SEA & LAND ELECTRONIC CORP.

12 V 0 2 5

## SMD0805-100-12V

### Features

- Surface Mount Devices
- Lead free device
- Size 2.0\*1.2 mm / 0.08\*0.05 inch
- Surface Mount packaging for automated assembly

### Applications

- Almost anywhere there is a low voltage power supply, up to 15V 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	Marking	V <sub>max</sub> (Vdc)	I <sub>max</sub> (A)	I <sub>hold</sub> @25°C		I <sub>trip</sub> @25°C (A)	P <sub>d</sub> Typ. (W)	Maximum Time To Trip		Resistance		Agency Approval UL	TUV
				1.00	1.95			Current (A)	Time (Sec)	R <sub>i</sub> <sub>min</sub> (Ω)	R <sub>1max</sub> (Ω)		
SMD0805-100-12V	0	12	100	1.00	1.95	0.6	8.0	0.30	0.060	0.230			

**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</sub><sub>min/max</sub>** = Minimum/Maximum device resistance prior to tripping at 25°C.  
**R<sub>1max</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
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
SMD0805-100-12V	1.35	1.25	1.15	1.00	0.82	0.74	0.65	0.55	0.42

12V 10A 12V 15V

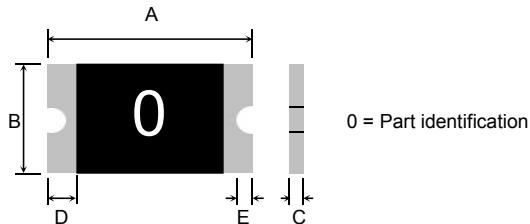
## SMD0805-100-12V

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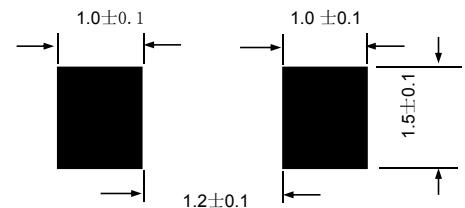
### Construction And Dimension (Unit:mm)

Model	A	B	C	D	E
	Min.	Max.	Min.	Max.	Min.
SMD0805-100	1.90	2.20	1.20	1.50	0.50
					1.10
				0.20	0.10

### Dimensions & Marking



### Recommended Pad Layout (mm)



### Termination Pad Characteristics

Terminal pad materials :

Tin-plated Nickel-Copper

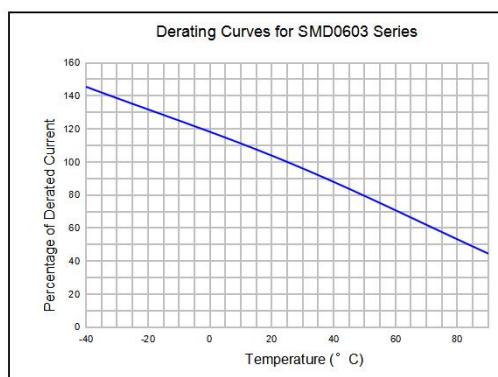
Terminal pad solderability :

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

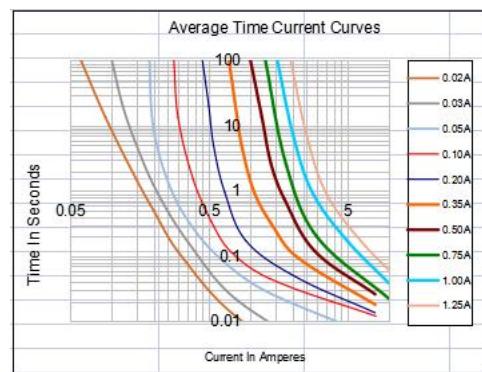
### Rework

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

### Thermal Derating Curve



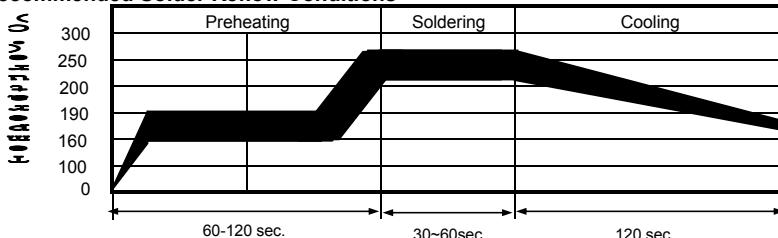
### Typical Time-To-Trip At 25°C



### 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.

## Recommended Solder Reflow Conditions

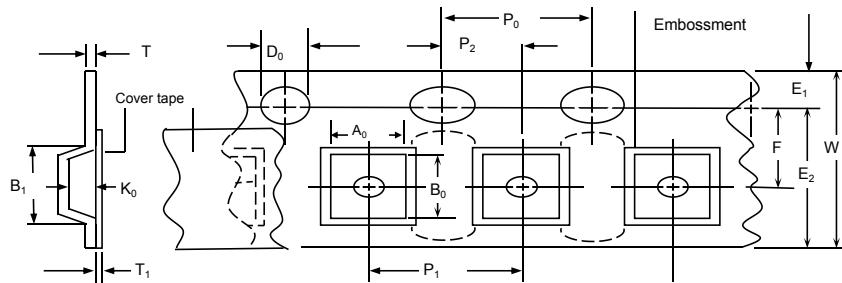


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

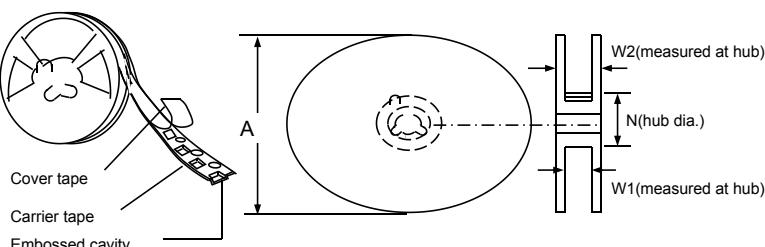
## Tape And Reel Specifications (mm)

Governing Specifications		EIA 481-1
W		8.0 ± 0.3
P0		4.0 ± 0.10
P1		4.0 ± 0.10
P2		2.0 ± 0.05
A0		1.45 ± 0.10
B0		2.30 ± 0.10
B1max.		4.35
D0		1.55 + 0.1, -0
F		3.5 ± 0.05
E1		1.75 ± 0.10
E2min.		6.25
T		0.25
T1max.		0.1
K0		0.74 ± 0.1
Leader min.		390
Trailer min.		160
<b>Reel Dimensions</b>		
A max.		178
N min.		60
W1		9.0 ± 0.5
W2		12.0 ± 0.05

## 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

SMD0805	100-12V	Packaging	Tape & Reel Quantity
Product name Size 2012 mm / 0805 inch SMD: surface mount device	Hold Current 1.00A		4,000 pcs/reel

Tape &amp; reel packaging per EIA481-1

## Labeling Information

