



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.:

SMD0603-025-24V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

MANUFACTURER:

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Submitted by:

Chen

Approved by:

YC Lin

DATE:

14-Feb-25

SEA & LAND ELECTRONIC CORP.



#### Features

- Surface Mount Devices
- Lead free device
- Size 1.5\*0.8 mm / 0.06\*0.03 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 drivers, CD-ROMs,

**SMD0603-025-24V**

Alpha-Top (Sea & Land Alliance)

#### Performance Specification

Model	Marking	$V_{max}$	$I_{max}$	$I_{hold}$ @25°C	$I_{trip}$ @25°C	$P_d$ Typ.	Maximum Time To Trip		Resistance		Agency Approval	
		(Vdc)	(A)	(A)	(A)	(W)	Current (A)	Time (Sec)	$R_{min}$ (Ω)	$R_{1max}$ (Ω)	UL	TUV
SMD0603-025-24V	2	24	40	0.25	0.55	0.5	1.0	0.08	0.500	3.000		

**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>min</sub>/max** = 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

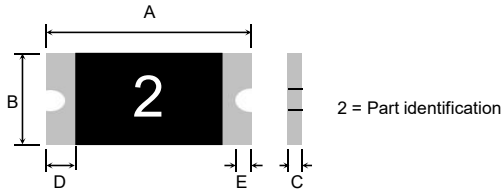
#### I<sub>hold</sub> Versus Temperature

Model	Maximum ambient operating temperature (T <sub>mbao</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
SMD0603-025-24V	0.32	0.29	0.27	0.25	0.21	0.18	0.16	0.11	0.08

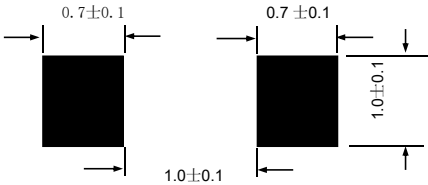
Construction And Dimension (Unit:mm)

Model	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SMD0603-025-24V	1.45	1.85	0.65	1.05	0.50	1.20	0.15	0.15	0.10	0.10

Dimensions & Marking



Recommended Pad Layout (mm)



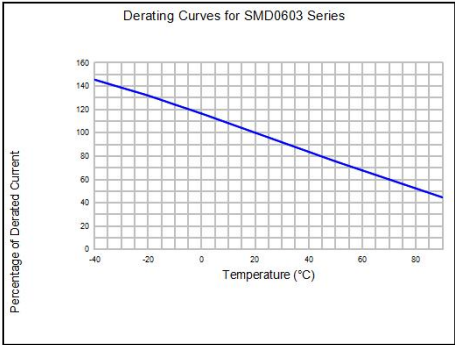
Termination Pad Characteristics

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

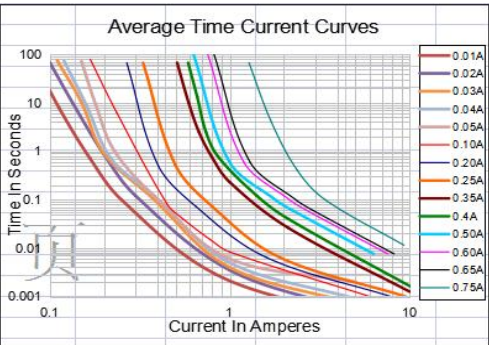
Rework

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

Thermal Derating Curve



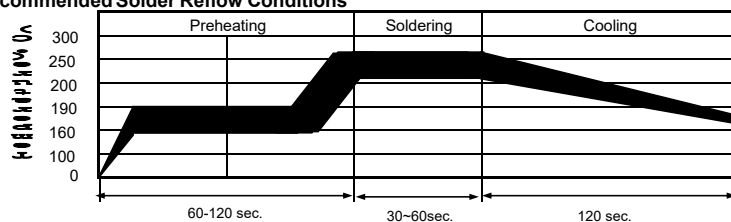
Typical Time-To-Trip At 25°C



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 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



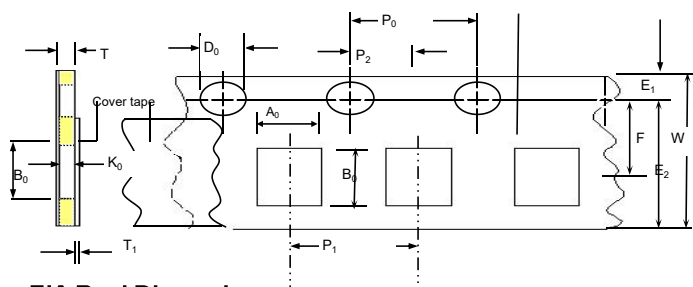
- Recommended reflow methods: IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note: If reflow temperatures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

## Tape And Reel Specifications (mm)

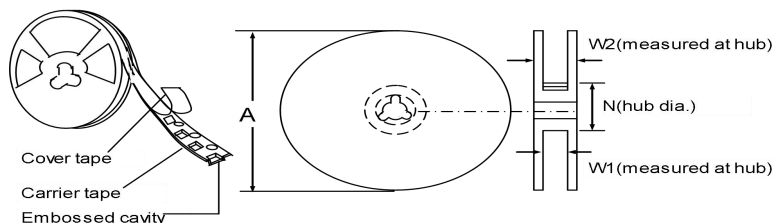
## Governing Specifications

W	8.0 ± 0.2
P <sub>0</sub>	4.0 ± 0.10
P <sub>1</sub>	4.0 ± 0.10
P <sub>2</sub>	2.0 ± 0.05
A <sub>0</sub>	1.05 ± 0.10
B <sub>0</sub>	1.85 ± 0.10
D <sub>0</sub>	1.55 ± 0.05
F	3.5 ± 0.05
E <sub>1</sub>	1.75 ± 0.10
E <sub>2</sub> min.	6.25
T	0.75
T <sub>1</sub> max.	0.1
K <sub>0</sub>	0.75/0.95 ± 0.1
Leader min.	390
Trailer min.	160
<b>Reel Dimensions</b>	
A max.	178
N min.	60
W <sub>1</sub>	9.0 ± 0.5
W <sub>2</sub>	12.0 ± 0.05

## Paper 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

SMD0603	025-24V	Packaging
Product name	Hold	Tape & Reel Quantity
Size 1508 mm / 0603 inch	Current	5,000 pcs/reel
SMD: surface mount device	0.25A	

Tape &amp; reel packaging per EIA481-1

Labeling Information

**Sea & Land Electronic Corp.**

HF Pb RoHS

Model:  
Part no.:  
Spec.:  
Lot no.:  
Q'ty:

倉儲: 密封! 溫度: 18~33℃/濕度: 30~60% A