



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.: SMD2018-050

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

### MANUFACTURER:

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Submitted by: Chen  
Approved by: YC Lin  
DATE: 4-Mar-25

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,

# SMD2018-050

Alpha-Top (Sea & Land Alliance)

#### 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)	Max. (W)	Current (A)	Time (Sec)	$R_{i_{min}}$ (Ω)	$R_{1max}$ (Ω)	UL	TUV
SMD2018-050	60	100	0.55	1.20	1.0	2.5	3.00	0.200	1.000	✓	

**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>imin/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 :



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

#### 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
SMD2018-050	0.87	0.77	0.67	0.55	0.46	0.41	0.36	0.31	0.23



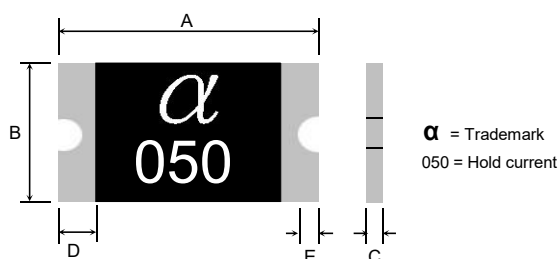
# SMD2018-050

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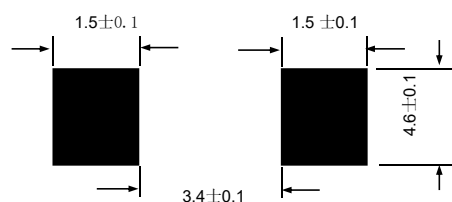
## Construction And Dimension (Unit:mm)

Model	A		B		C		D		E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
SMD2018-050	4.72	5.44	4.22	4.93	0.70	1.30	0.30	0.30	0.30

## Dimensions & Marking



## Recommended Pad Layout (mm)



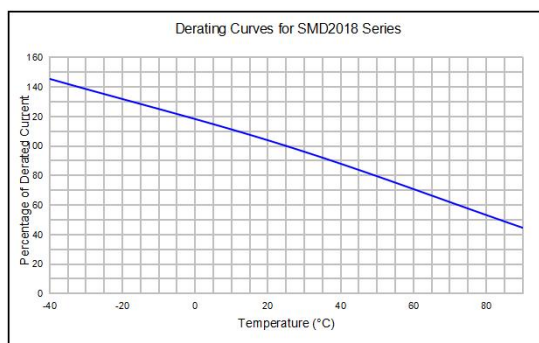
## Termination Pad Characteristics

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

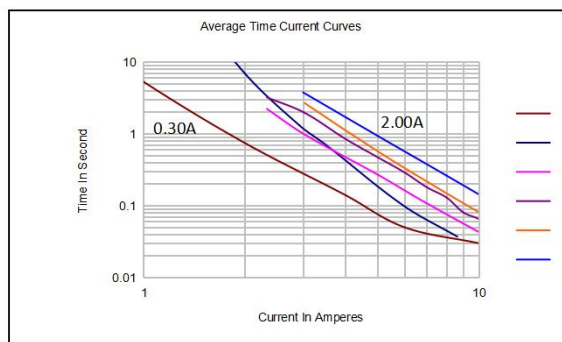
## Rework

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:

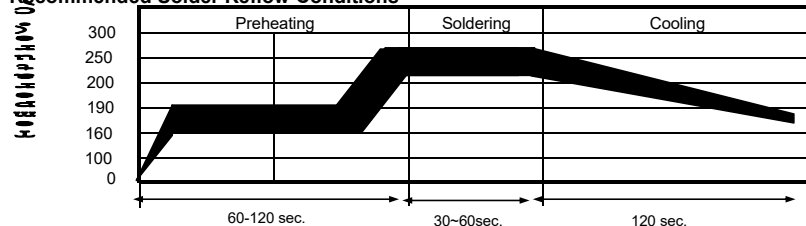
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events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



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### Recommended Solder Reflow Conditions

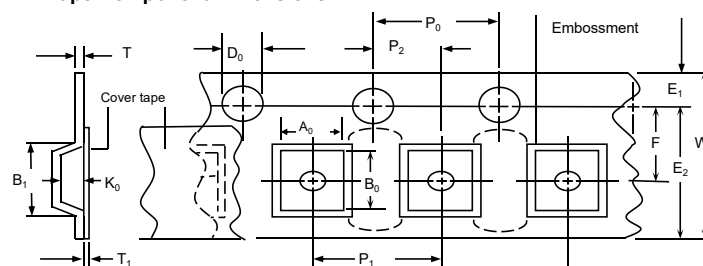


- Recommended reflow methods: IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.
- Note: If reflow temperatures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

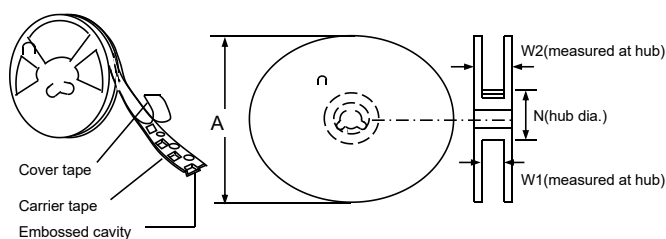
### Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-2
W	12.0 ± 0.20
P <sub>0</sub>	4.0 ± 0.10
P <sub>1</sub>	8.0 ± 0.10
P <sub>2</sub>	2.0 ± 0.05
A <sub>0</sub>	4.40 ± 0.10
B <sub>0</sub>	5.50 ± 0.10
B <sub>1</sub> max.	8.2
D <sub>0</sub>	1.5 ± 0.1, -0.0
F	5.5 ± 0.05
E <sub>1</sub>	1.75 ± 0.10
E <sub>2</sub> min.	10.25
Tmax.	0.6
T <sub>1</sub> max.	0.1
K <sub>0</sub>	1.36 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	50
W <sub>1</sub>	12.4 + 2.0, -0.0
W <sub>2</sub> max.	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

### Packaging

SMD2018	050	Tape & Reel Quantity
Product name	Hold	
Size 5045mm/2018 inch	Current	1,500 pcs/reel
SMD: surface mount device	0.55A	

Tape & reel packaging per EIA481-1

### Labeling Information

