

## SMD2018 Series

### Features

- Surface Mount Devices
- Lead free device
- Size 5.0\*4.5mm/0.20\*0.18 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.
  - Telecommunication equipments.

Alpha-Top (Sea & Land Alliance)

### Performance Specification

Model	V <sub>max</sub> (Vdc)	I <sub>max</sub> (A)	I <sub>hold</sub> @25°C (A)	I <sub>trip</sub> @25°C (A)	P <sub>d</sub> Typ. (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	R <sub>i_min</sub> (Ω)	R <sub>1_max</sub> (Ω)
SMD2018-030	60	100	0.30	0.60	0.9	1.5	3.00	0.500	2.300
SMD2018-050	60	100	0.55	1.20	1.0	2.5	3.00	0.200	1.000
SMD2018-100	15	100	1.10	2.20	1.1	8.0	0.40	0.060	0.360
SMD2018-100-33V	33	100	1.10	2.20	1.1	8.0	0.40	0.060	0.360
SMD2018-150	15	100	1.50	3.00	1.1	8.0	0.80	0.050	0.170
SMD2018-200	10	100	2.00	4.00	1.1	8.0	2.40	0.030	0.100

**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>1\_max</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	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		

### AGENCY APPROVALS :

UL pending

### Regulation/Standard:



2002/95/EC

EN14582

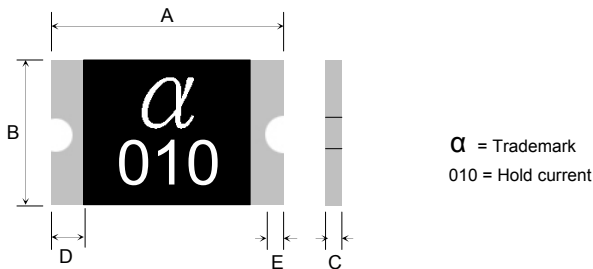
### I<sub>hold</sub> Versus Temperature

Model	Maximum ambient operating temperature (T <sub>max</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
SMD2018-030	0.48	0.42	0.35	0.30	0.24	0.21	0.17	0.15	0.10
SMD2018-050	0.87	0.77	0.67	0.55	0.46	0.41	0.36	0.31	0.23
SMD2018-100	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
SMD2018-100-33V	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
SMD2018-150	2.38	2.10	1.82	1.50	1.27	1.13	0.99	0.85	0.64
SMD2018-200	2.95	2.65	2.35	2.00	1.74	1.59	1.44	1.29	1.06

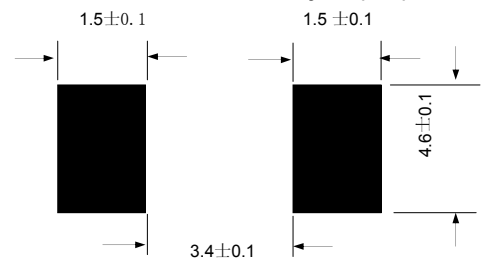
**Construction And Dimension (Unit:mm)**

Model	A		B		C		D
	Min.	Max.	Min.	Max.	Min.	Max.	Min.
SMD2018-030	4.72	5.44	4.22	4.93	0.60	1.10	0.30
SMD2018-050	4.72	5.44	4.22	4.93	0.70	1.30	0.30
SMD2018-100	4.72	5.44	4.22	4.93	0.45	0.80	0.30
SMD2018-100-33V	4.72	5.44	4.22	4.93	0.45	0.80	0.30
SMD2018-150	4.72	5.44	4.22	4.93	0.45	0.80	0.30
SMD2018-200	4.72	5.44	4.22	4.93	0.45	0.80	0.30

**Dimensions & Marking**



**Recommended Pad Layout (mm)**



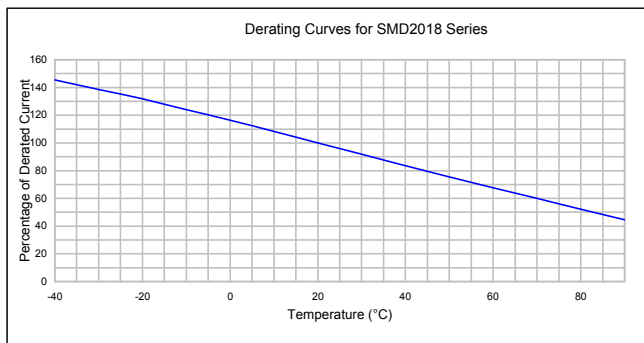
**Termination Pad Characteristics**

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

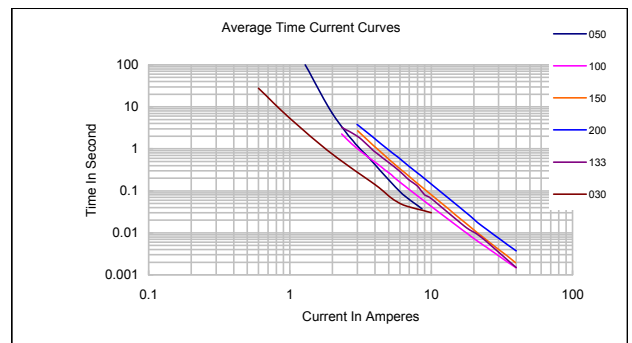
**Rework**

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

**Thermal Derating Curve**



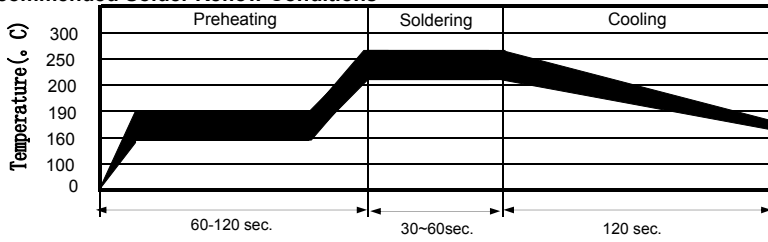
**Typical Time-To-Trip At 25°C**



**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 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**

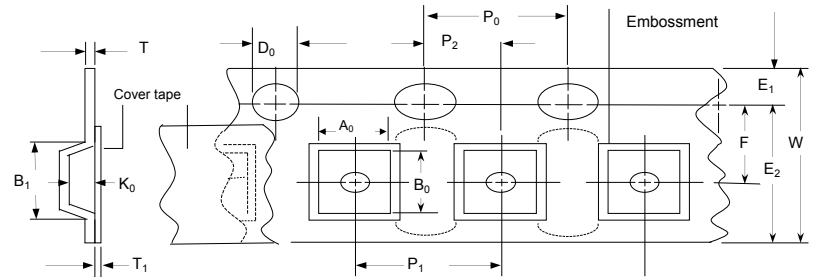


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

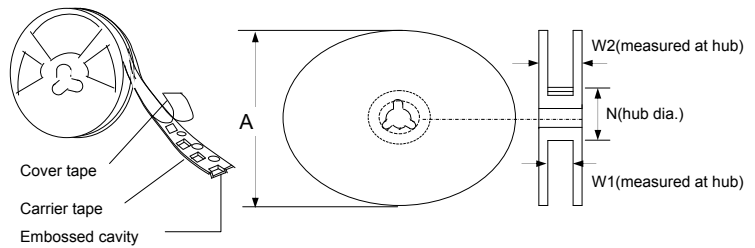
**Tape And Reel Specifications (mm)**

Governing Specifications	EIA 481-2
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
<b>Reel Dimensions</b>	
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**

SMD2018	050	Packaging	Tape & Reel Quantity
Product name	Hold		030, 050 1,500 pcs/reel
Size 5045mm/2018 inch	Current		100, 100-33V, 150, 200 2,500 pcs/reel
SMD : surface mount device	0.50A		

Tape & 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

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