

## Positive Thermal Coefficient Diodes

### SMD2018P030~200 Series

The SMD2018 Series PTC provides surface mount overcurrent protection for applications where space is at a premium and resettable protection is desired.

#### Features

- RoHS compliant, lead-free and halogen-free
- Fast response to fault currents
- Compact design saves board space
- Low resistance
- Low-profile
- Compatible with high temperature solders

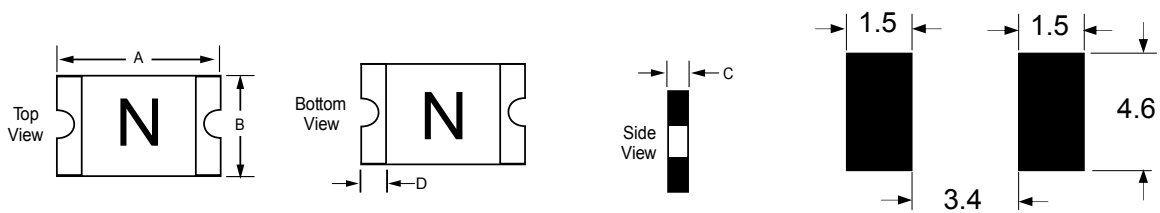
#### Applications

- USB peripherals
- Disk drives
- CD-ROMs
- Plug and play protection for motherboards and peripherals
- Mobile phones - battery and port protection
- Disk drives
- PDAs / digital cameras
- Game console port protection



#### Dimension

MARKING CODE VARIES  
WITH AMPERAGE RATING  
(See Electrical Characteristic Table)  
SHOWN IS 1.0AMP RATING



Model	A		B		C		D
	Min.	Max.	Min.	Max.	Min.	Max.	Min.
SMD2018P030TF	4.72	5.44	4.22	4.93	0.60	1.10	0.30
SMD2018P050TF	4.72	5.44	4.22	4.93	0.60	1.10	0.30
SMD2018P100TF	4.72	5.44	4.22	4.93	0.45	0.80	0.30
SMD2018P100TF/33	4.72	5.44	4.22	4.93	0.45	0.80	0.30
SMD2018P150TF	4.72	5.44	4.22	4.93	0.45	0.80	0.30
SMD2018P200TF	4.72	5.44	4.22	4.93	0.40	0.80	0.30

## Electrical Characteristics

Type Number	$I_{hold}$	$I_{trip}$	$V_{max}$	$I_{max}$	$P_d$ max.	Maximum Time To Trip		Resistance	
	(A)	(A)	$V_{(dc)}$	(A)	(W)	Current (A)	Time (Sec.)	$R_{min}$ ( $\Omega$ )	$R_{1max}$ ( $\Omega$ )
SMD2018P030TF	0.30	0.60	60	100	0.9	1.5	3.0	0.50	2.30
SMD2018P050TF	0.55	1.20	60	100	1.0	2.5	3.0	0.20	1.00
SMD2018P100TF	1.10	2.20	15	100	1.1	8.0	0.4	0.06	0.36
SMD2018P100TF/33	1.10	2.20	33	100	1.1	8.0	0.4	0.06	0.36
SMD2018P150TF	1.50	3.00	15	100	1.1	8.0	0.8	0.05	0.17
SMD2018P200TF	2.00	4.20	10	100	1.1	8.0	2.4	0.03	0.10

$I_{hold}$  = Hold current: maximum current device will pass without tripping in 20°C still air.

$I_{trip}$  = Trip current: minimum current at which the device will trip in 20°C still air.

$V_{max}$  = Maximum voltage device can withstand without damage at rated current ( $I_{max}$ )

$I_{max}$  = Maximum fault current device can withstand without damage at rated voltage ( $V_{max}$ )

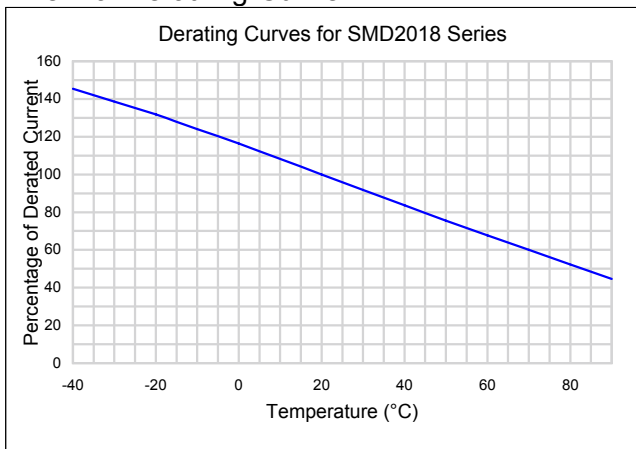
$P_d$  = Power dissipated from device when in the tripped state at 20°C still air.

$R_{min}$  = Minimum resistance of device in initial (un-soldered) state.

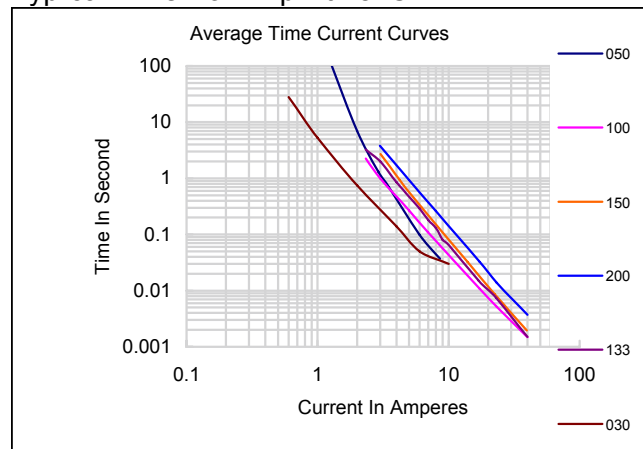
## Thermal Derating Chart-IH(A)

Model	Maximum ambient operating temperature ( $T_{mao}$ ) vs. hold current ( $I_{hold}$ )								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD2018P030TF	0.48	0.42	0.35	0.30	0.24	0.21	0.17	0.15	0.10
SMD2018P050TF	0.87	0.77	0.67	0.55	0.46	0.41	0.36	0.31	0.23
SMD2018P100TF	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
SMD2018P100TF/33	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
SMD2018P150TF	2.38	2.10	1.82	1.50	1.27	1.13	0.99	0.85	0.64
SMD2018P200TF	2.95	2.65	2.35	2.00	1.74	1.59	1.44	1.29	1.06

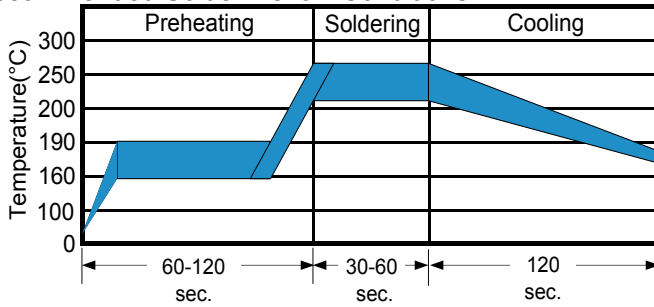
Thermal Derating Curve



Typical Time-To-Trip At 25°C



## Recommended Solder Reflow Conditions

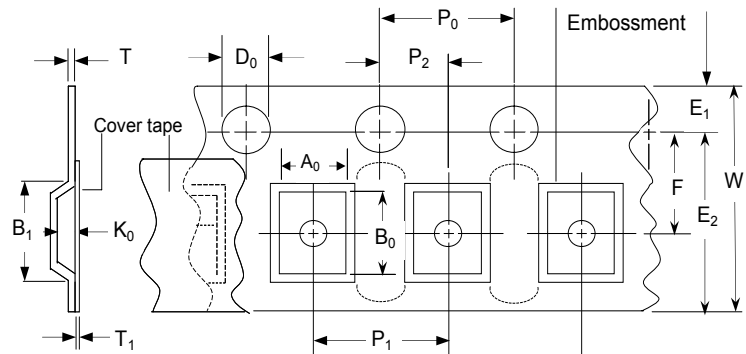


- Recommended reflow methods: IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note: If reflow temperatures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

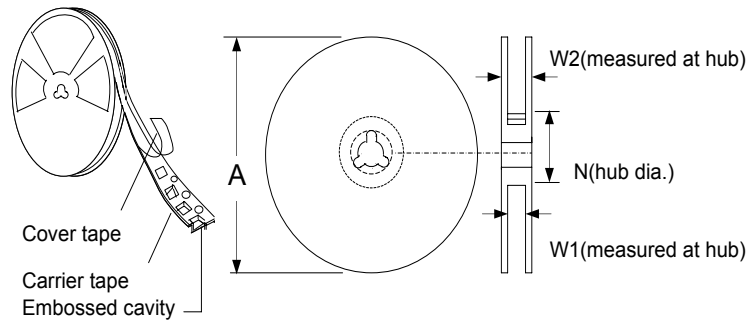
## Tape And Reel Specifications (mm)

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>1max.</sub>	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>2min.</sub>	10.25
Tmax.	0.6
T <sub>1max.</sub>	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>2max.</sub>	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
Product name	Hold
Size 5045 mm / 2018 mils	Current
SMD : surface mount device	0.50A

## Packaging

Tape & Reel Quantity	
030, 050	1,500 pcs/reel
100, 100-33V, 150, 200	2,500 pcs/reel

Tape & reel packaging per EIA481-1

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