

Positive Thermal Coefficient Diodes

SMD1812P010~350 Series

The SMD1812 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
- AEC-Q101

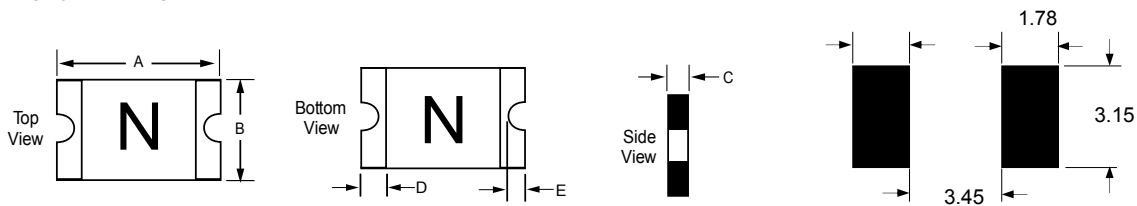
Applications

- 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

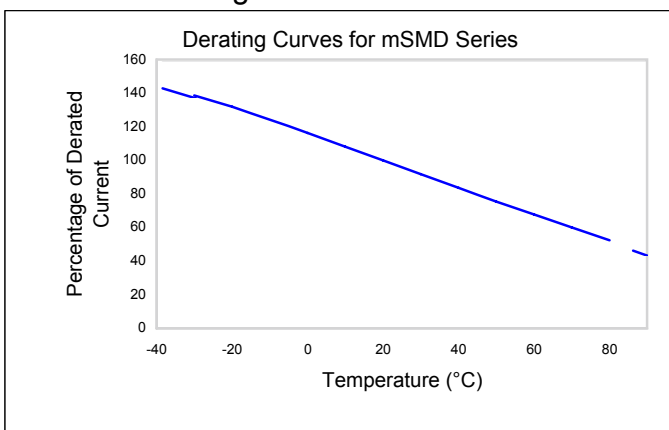
MARKING CODE VARIES
WITH AMPERAGE RATING
(See Electrical Characteristic Table)
SHOWN IS 1.0AMP RATING



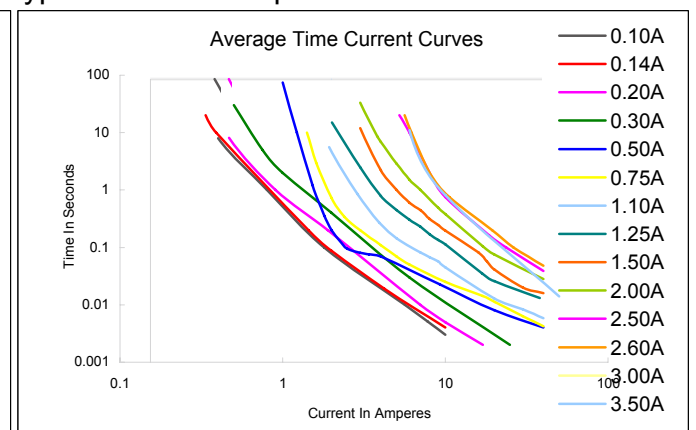
Model	A		B		C		D
	Min.	Max.	Min.	Max.	Min.	Max.	Min.
SMD1812P010TF	4.37	4.73	3.07	3.41	0.50	1.00	0.25
SMD1812P014TF	4.37	4.73	3.07	3.41	0.50	1.00	0.25
SMD1812P020TF	4.37	4.73	3.07	3.41	0.50	1.00	0.25
SMD1812P030TF	4.37	4.73	3.07	3.41	0.50	1.00	0.25
SMD1812P050TF	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P050TF/30	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P075TF	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P075TF/24	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P075TF/33	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P110TF/8	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P110TF/16	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P110TF/24	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P110TF/33	4.37	4.73	3.07	3.41	0.40	0.90	0.25
SMD1812P125TF/16	4.37	4.73	3.07	3.41	0.30	1.05	0.25
SMD1812P125TF	4.37	4.73	3.07	3.41	0.30	1.05	0.25
SMD1812P150TF	4.37	4.73	3.07	3.41	0.30	1.10	0.25
SMD1812P150TF/12	4.37	4.73	3.07	3.41	0.30	1.10	0.25
SMD1812P150TF/24	4.37	4.73	3.07	3.41	0.30	1.10	0.25
SMD1812P160TF	4.37	4.73	3.07	3.41	0.30	1.10	0.25
SMD1812P200TF	4.37	4.73	3.07	3.41	0.40	1.10	0.25
SMD1812P260TF	4.37	4.73	3.07	3.41	0.50	1.10	0.25
SMD1812P260TF/12	4.37	4.73	3.07	3.41	0.50	1.10	0.25
SMD1812P300TF	4.37	4.73	3.07	3.41	0.50	1.20	0.25
SMD1812P350TF	4.37	4.73	3.07	3.41	0.50	1.20	0.25

Thermal Derating Chart-IH(A)

Thermal Derating Curve



Typical Time-To-Trip At 25°C



Electrical Characteristics

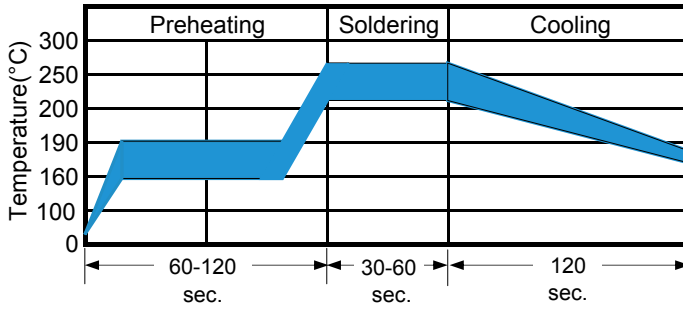
Type Number	I _{hold}	I _{trip}	V _{max}	I _{max}	P _d max.	Maximum Time To Trip		Resistance	
	(A)	(A)	V _(dc)	(A)	(W)	Current (A)	Time (Sec.)	R _{min} (Ω)	R _{1max} (Ω)
SMD1812P010TF	0.10	0.30	30	100	0.8	0.5	1.50	0.750	15.00
SMD1812P014TF	0.14	0.34	60	100	0.8	1.5	0.15	0.650	6.00
SMD1812P020TF	0.20	0.40	30	100	0.8	8.0	0.02	0.350	5.00
SMD1812P030TF	0.30	0.60	30	100	0.8	8.0	0.10	0.250	3.00
SMD1812P050TF	0.50	1.00	15	100	0.8	8.0	0.15	0.150	1.00
SMD1812P050TF/30	0.50	1.00	30	100	0.8	8.0	0.15	0.150	1.00
SMD1812P075TF	0.75	1.50	13.2	40	0.8	8.0	0.20	0.090	0.45
SMD1812P075TF/24	0.75	1.50	24	40	0.8	8.0	0.20	0.090	0.45
SMD1812P075TF/33	0.75	1.50	33	40	0.8	8.0	0.20	0.090	0.45
SMD1812P110TF/8	1.10	2.20	8	100	0.8	8.0	0.30	0.050	0.25
SMD1812P110TF/16	1.10	2.20	16	100	0.8	8.0	0.30	0.050	0.25
SMD1812P110TF/24	1.10	2.20	24	100	0.8	8.0	0.30	0.050	0.25
SMD1812P110TF/33	1.10	2.20	33	100	0.8	8.0	0.30	0.050	0.25
SMD1812P125TF/16	1.25	2.50	16	100	0.8	8.0	0.40	0.050	0.14
SMD1812P125TF	1.25	2.50	6	100	0.8	8.0	0.40	0.050	0.14
SMD1812P150TF	1.50	3.00	8	100	0.8	8.0	0.50	0.040	0.16
SMD1812P150TF/12	1.50	3.00	12	100	0.8	8.0	0.50	0.040	0.16
SMD1812P150TF/24	1.50	3.00	24	100	0.8	8.0	0.50	0.040	0.16
SMD1812P160TF	1.60	2.80	8	100	0.8	8.0	1.00	0.030	0.13
SMD1812P200TF	2.00	4.00	8	100	0.8	8.0	2.00	0.020	0.10
SMD1812P260TF	2.60	5.00	8	100	0.8	8.0	2.50	0.015	0.05
SMD1812P260TF/12	2.60	5.00	12	100	0.8	8.0	2.50	0.015	0.05
SMD1812P300TF	3.00	5.00	8	100	0.8	8.0	4.00	0.012	0.04
SMD1812P350TF	3.00	6.00	6	100	2.0	10.0	4.00	0.008	0.03

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
SMD1812P010TF	0.16	0.14	0.12	0.11	0.08	0.07	0.06	0.05	0.03
SMD1812P014TF	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
SMD1812P020TF	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10
SMD1812P030TF	0.44	0.39	0.35	0.30	0.26	0.23	0.21	0.18	0.15
SMD1812P050TF	0.59	0.57	0.55	0.50	0.45	0.43	0.35	0.30	0.23
SMD1812P050TF/30	0.59	0.57	0.55	0.50	0.45	0.43	0.35	0.30	0.23
SMD1812P075TF	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812P075TF/24	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812P075TF/33	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812P110TF/8	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812P110TF/16	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812P110TF/24	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812P110TF/33	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812P125TF/16	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
SMD1812P125TF	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
SMD1812P150TF	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812P150TF/12	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812P150TF/24	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812P160TF	2.80	2.06	1.88	1.60	1.26	1.12	0.98	0.84	0.63
SMD1812P200TF	2.88	2.61	2.25	2.00	1.80	1.66	1.45	1.09	0.80
SMD1812P260TF	3.90	3.42	2.96	2.60	2.33	2.07	1.94	1.35	1.00
SMD1812P260TF/12	3.90	3.42	2.96	2.60	2.33	2.07	1.94	1.35	1.00
SMD1812P300TF	4.15	3.76	3.46	3.00	2.55	2.28	2.01	1.61	1.33
SMD1812P350TF	4.84	4.39	4.04	3.50	2.98	2.66	2.35	1.88	1.55

All data is subject to change, Please check our data sheets at www.leiditech.com for updates.

Recommended Solder Reflow Conditions

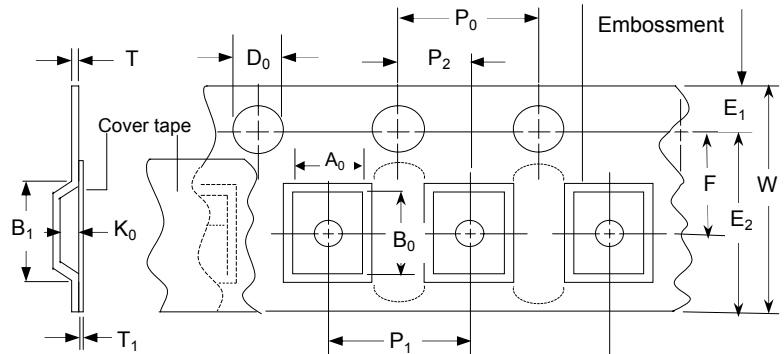


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
 - Devices are not designed to be wave soldered to the bottom side of the board.
 - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
 - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

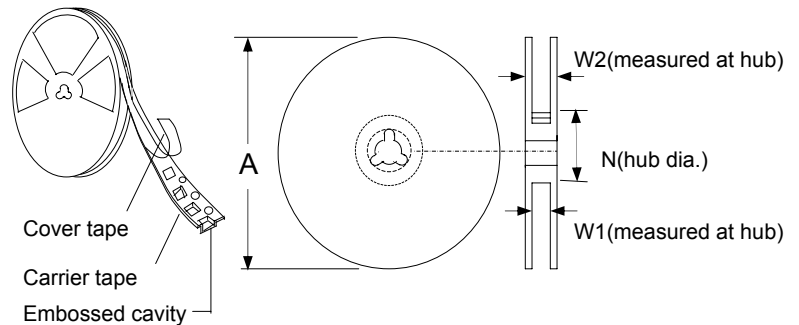
Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	12 ± 0.3
P ₀	4.0 ± 0.10
P ₁	8.0 ± 0.10
P ₂	2.0 ± 0.05
A ₀	3.5 ± 0.23
B ₀	5.1 ± 0.15
B _{1max.}	5.9
D ₀	1.5 + 0.1, -0
F	5.5 ± 0.05
E ₁	1.75 ± 0.10
E _{2min.}	10.25
Tmax.	0.6
T _{1max.}	0.1
K ₀	0.9 ± 0.15
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W ₁	12.4 + 2.0, -0.0
W _{2max.}	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

SMD1812	110	Tape & Reel Quantity
Product name	Hold	010,014,020,030,260,300,350 1,500 pcs/reel
Size 4532 mm / 1812 mils	Current	050,075,110,150,160,200 2,000 pcs/reel
SMD : surface mount device	1.10A	

Tape & reel packaging per EIA481-1

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SHANGHAI LEIDITECH ELECTRONICS CO.,LTD

Tel: +86- 021 50828806

Fax: +86- 021 50477059-8008

Email: sale1@leiditech.com

Website: <http://www.leiditech.com>