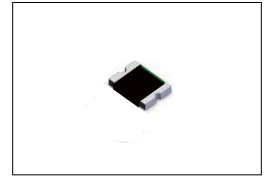


DESCRIPTION

The SMD1812 Series PTC provides surface mount over-current protection for applications where space is at a premium and resettable protection is desired.



FEATURES

- > RoHS compliant, Lead-Free and Halogen-Free
- > Fast time-to-trip
- > Compact design saves board space
- > Low resistance
- > Low-profile

APPLICATIONS

- > PC motherboard - plug and play protection
- > Mobile phones - battery and port protection
- > Game console port protection
- > USB peripherals
- > Disk drive
- > PDAS / digital cameras
- > Power ports
- > General electronics

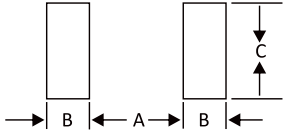
ELECTRICAL PARAMETERS

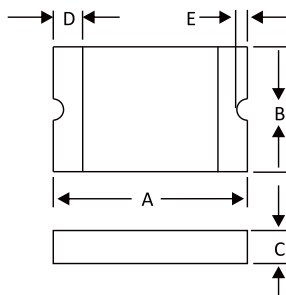
Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Maximum Time to Trip		Resistance	
	I _{hold} (A)	I _{trip} (A)	V _{max} (V _{DC})	I _{max} (A)	P _{dtyp} (W)	Current (A)	Time (Sec)	R _{min} (Ω)	R _{imax} (Ω)
SMD1812-010	0.10	0.30	30	100	0.8	0.5	1.50	0.750	15.000
SMD1812-010/60	0.10	0.30	60	100	0.8	0.5	1.50	0.750	15.000
SMD1812-014/33	0.14	0.34	33	100	0.8	1.5	0.15	0.650	6.000
SMD1812-014	0.14	0.34	60	100	0.8	1.5	0.15	0.650	6.000
SMD1812-020	0.20	0.40	30	100	0.8	8.0	0.02	0.350	5.000
SMD1812-030	0.30	0.60	30	100	0.8	8.0	0.10	0.250	3.000
SMD1812-050	0.50	1.00	15	100	0.8	8.0	0.15	0.150	1.000
SMD1812-050/24	0.50	1.00	24	100	0.8	8.0	0.15	0.150	1.000
SMD1812-050/30	0.50	1.00	30	100	0.8	8.0	0.15	0.150	1.000
SMD1812-050/60	0.50	1.00	60	100	0.8	8.0	0.15	0.150	1.400
SMD1812-075	0.75	1.50	13.2	100	0.8	8.0	0.20	0.090	0.450
SMD1812-075/24	0.75	1.50	24	100	0.8	8.0	0.20	0.090	0.450
SMD1812-075/33	0.75	1.50	33	100	0.8	8.0	0.20	0.090	0.450
SMD1812-110	1.10	2.20	8.0	100	0.8	8.0	0.30	0.050	0.250
SMD1812-110/16	1.10	2.20	16.0	100	0.8	8.0	0.30	0.050	0.250
SMD1812-110/24	1.10	2.20	24.0	100	0.8	8.0	0.30	0.050	0.250
SMD1812-110/33	1.10	2.20	33.0	100	0.8	8.0	0.30	0.050	0.250
SMD1812-125/8	1.25	2.50	8.0	100	0.8	8.0	0.40	0.050	0.200
SMD1812-125	1.25	2.50	16.0	100	0.8	8.0	0.40	0.050	0.200
SMD1812-150	1.50	3.00	8.0	100	0.8	8.0	0.50	0.040	0.160



Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Maximum Time to Trip		Resistance	
	I _{hold} (A)	I _{trip} (A)	V _{max} (V _{DC})	I _{max} (A)	P _{dtyp} (W)	Current (A)	Time (Sec)	R _{min} (Ω)	R _{1max} (Ω)
SMD1812-150/16	1.50	3.00	16.0	100	0.8	8.0	0.50	0.040	0.160
SMD1812-150/24	1.50	3.00	24.0	100	0.8	8.0	0.50	0.040	0.160
SMD1812-160	1.60	2.80	8.0	100	0.8	8.0	1.00	0.030	0.130
SMD1812-200	2.00	4.00	8.0	100	0.8	8.0	2.00	0.020	0.100
SMD1812-200/12	2.00	4.00	12.0	100	0.8	8.0	2.00	0.020	0.100
SMD1812-200/16	2.00	4.00	16.0	100	0.8	8.0	2.00	0.020	0.100
SMD1812-260	2.60	5.00	8.0	100	0.8	8.0	2.50	0.015	0.050
SMD1812-260/12	2.60	5.00	12.0	100	0.8	8.0	2.50	0.015	0.060
SMD1812-260/16	2.60	5.00	16.0	100	0.8	8.0	2.50	0.015	0.060
SMD1812-300	3.00	5.00	8.0	100	0.8	8.0	4.00	0.012	0.040

PAD LAYOUTS(UNIT:mm)

 <p>The dimension in the table below provide the recommended pad layout for each SMD1812 device</p>	Device	A	B	C
		Nominal	Nominal	Nominal
	1812 Series	3.2	1.78	3.2

DIMENSIONS(UNIT:mm)


Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1812-010	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-010/60	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-014/33	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-014	4.37	4.73	3.07	3.41	0.50	1.10	0.30	0.15



Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1812-020	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-030	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-050	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.15
SMD1812-050/24	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.15
SMD1812-050/30	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
SMD1812-050/60	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.25
SMD1812-075	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.15
SMD1812-075/24	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.15
SMD1812-075/33	4.37	4.73	3.07	3.41	0.60	1.20	0.30	0.15
SMD1812-110	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.15
SMD1812-110/16	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.15
SMD1812-110/24	4.37	4.73	3.07	3.41	0.60	1.30	0.30	0.15
SMD1812-110/33	4.37	4.73	3.07	3.41	0.70	1.70	0.30	0.15
SMD1812-125	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.15
SMD1812-125/8	4.37	4.73	3.07	3.41	0.30	0.90	0.30	0.15
SMD1812-150	4.37	4.73	3.07	3.41	0.30	0.90	0.30	0.15
SMD1812-150/16	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.15
SMD1812-150/24	4.37	4.73	3.07	3.41	0.80	1.70	0.30	0.15
SMD1812-160	4.37	4.73	3.07	3.41	0.30	0.80	0.30	0.15
SMD1812-200	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SMD1812-200/12	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SMD1812-200/16	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SMD1812-260	4.37	4.73	3.07	3.41	0.50	1.50	0.30	0.15
SMD1812-260/12	4.37	4.73	3.07	3.41	0.60	1.50	0.30	0.15
SMD1812-260/16	4.37	4.73	3.07	3.41	0.80	1.70	0.30	0.15
SMD1812-300	4.37	4.73	3.07	3.41	0.50	1.50	0.30	0.15



ELECTRICAL PARAMETERS

I_{hold} =Hold current:maximum current device will pass without tripping in 25°C still air.

I_{trip} =Trip current:maximum current at which the device will trip in 25°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}).

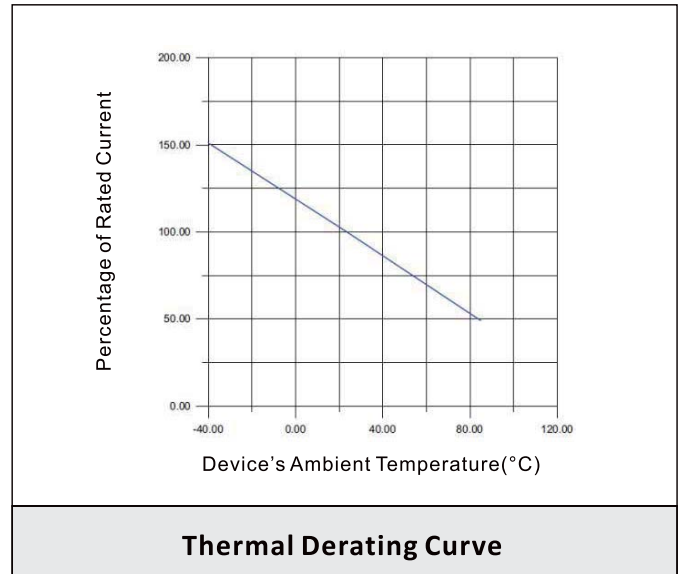
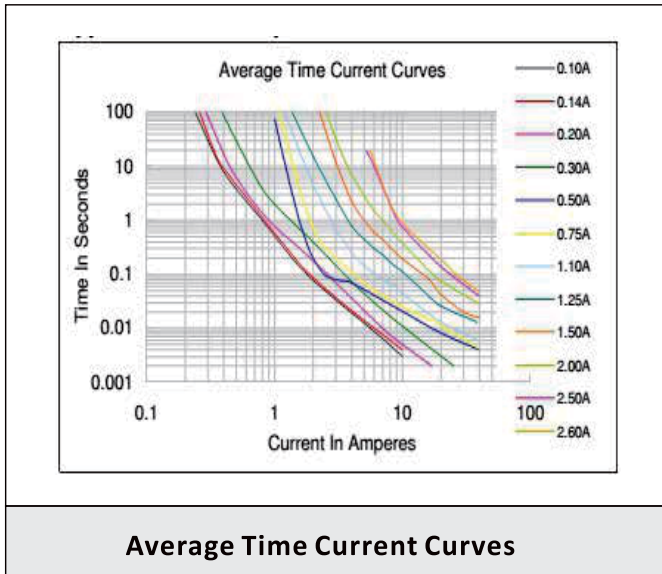
R_{dtyp} =Power dissipated from device when in the tripped state at 25°C still air.

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

R_{1max} =Maximum resistance of device at 25°C measured one hour after tripping.

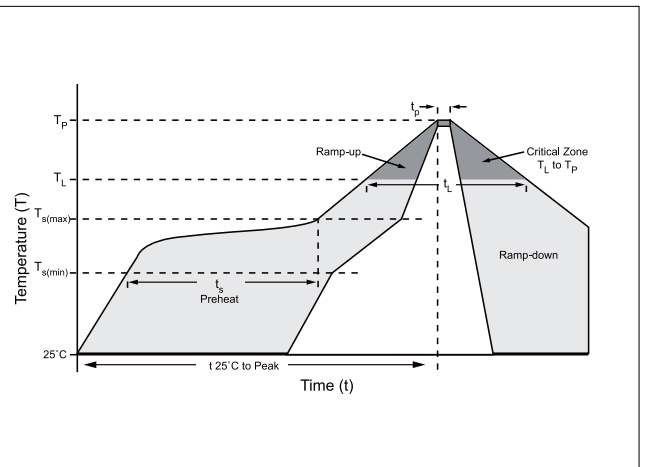
Caution:Operation beyond the specified rating may result in damage and possible arcing and flame.

CHARACTERISTIC CURVES



REFLOW PROFILE

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C



Ihold VERSUS TEMPERATURE

Part Number	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD1812-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1812-014	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
SMD1812-020	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10
SMD1812-030	0.44	0.39	0.35	0.30	0.26	0.23	0.21	0.18	0.15
SMD1812-050	0.59	0.57	0.55	0.50	0.45	0.43	0.35	0.30	0.23
SMD1812-075	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812-110	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812-110/16	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812-110/24	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812-110/33	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812-125	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
SMD1812-125/8	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
SMD1812-150	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812-150/16	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812-150/24	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812-160	2.45	2.15	1.89	1.60	1.34	1.25	1.15	0.96	0.79
SMD1812-200	2.89	2.61	2.30	2.00	1.75	1.66	1.45	1.39	1.19
SMD1812-200/12	2.89	2.61	2.30	2.00	1.75	1.66	1.45	1.39	1.19
SMD1812-200/16	2.89	2.61	2.30	2.00	1.75	1.66	1.45	1.39	1.19
SMD1812-260	3.76	3.39	2.99	2.60	2.28	2.16	1.89	1.81	1.55
SMD1812-260/12	3.38	3.05	2.69	2.60	2.05	1.94	1.70	1.63	1.39
SMD1812-260/16	3.38	3.05	2.69	2.60	2.05	1.94	1.70	1.63	1.39
SMD1812-300	4.34	3.92	3.45	3.00	2.63	2.49	2.18	2.09	1.79
Maximum ambient operating temperature (Ta) vs. hold current(Ihold)									



CONTACT US

Headquarters

No.3387 Shendu Road Pujiang I&E Park Minhang Shanghai
China

Hotline

400-021-5756

Web

[Http://www.semiware.com.cn](http://www.semiware.com.cn)

By Telephone

General: 86-21-3463-7172

Sales: 86-21-3463-7345

Technical Support: 86-21-34637172-8811

By Fax

General: 86-21-3965-0654

Sales: 86-21-3463-7458

By Email

General: china@semiware.com.cn

Sales: sales33@semiware.com.cn

Technical Support: fae03@semiware.com.cn

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Page 6

