

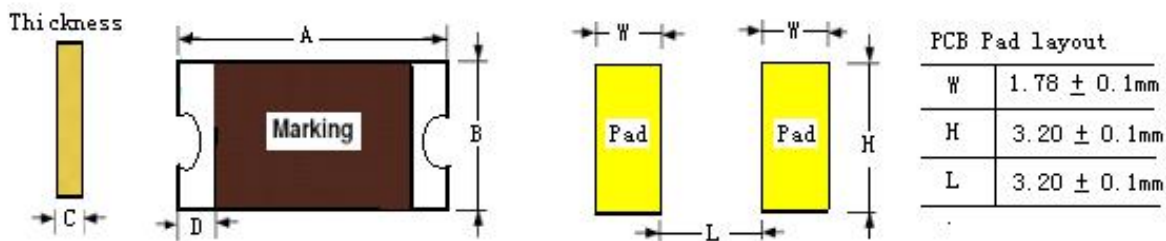
Resettable PTCS - 1812 Series

Features

- Surface mount overcurrent protection.g
- Resettable protection is desired
- Protecting against over-current and over-temperature faults
- RoHS compliant , lead-free and halogen free .

PACKAGE DIMENSIONS

(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	0.25
SMD1812-014	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-020	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-030	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-050	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
SMD1812-075	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
SMD1812-110	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
SMD1812-125	4.37	4.73	3.07	3.41	0.30	0.80	0.30	0.25
SMD1812-150	4.37	4.73	3.07	3.41	0.30	0.80	0.30	0.25
SMD1812-160	4.37	4.73	3.07	3.41	0.40	0.80	0.30	0.25
SMD1812-200	4.37	4.73	3.07	3.41	0.40	0.80	0.30	0.25
SMD1812-260	4.37	4.73	3.07	3.41	0.40	1.10	0.30	0.25
SMD1812-300	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.25
SMD1812-350	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.25

Electrical Characteristics

Model	$V_{max}(V_{dc})$	$I_{max}(A)$	I_{hold} @25°C (A)	I_{trip} @ 25°C (A)	P_d Max(W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	R_{1min} (Ω)	R_{1max} (Ω)
SMD1812-010	60.0	100	0.10	0.30	0.8	0.5	1.50	0.750	15.00
SMD1812-014	60.0	100	0.14	0.34	0.8	1.5	1.15	0.650	6.000
SMD1812-020	30.0	100	0.20	0.40	0.8	8.0	0.20	0.350	5.000
SMD1812-030	30.0	100	0.30	0.60	0.8	8.0	0.10	0.250	3.000
SMD1812-050	15/16/33/60	100	0.50	1.00	0.8	8.0	0.15	0.150	1.000
SMD1812-075	13.2/33	100	0.75	1.50	0.8	8.0	0.20	0.090	0.450
SMD1812-110	8/16/24/33	100	1.10	2.20	0.8	8.0	0.30	0.050	0.250
SMD1812-125	16.0	100	1.25	2.50	0.8	8.0	0.40	0.050	0.140
SMD1812-150	8/16/24	100	1.50	3.00	0.8	8.0	0.50	0.040	0.160
SMD1812-160	8.0	100	1.60	2.80	0.8	8.0	1.00	0.030	0.130
SMD1812-200	8/16	100	2.00	4.00	0.8	8.0	2.00	0.020	0.100
SMD1812-260	8/12	100	2.60	5.00	0.8	8.0	2.50	0.015	0.050
SMD1812-300	8.0/13.2	100	3.00	5.00	0.8	8.0	4.00	0.012	0.040
SMD1812-350	6.0	100	3.50	6.00	2.0	10.0	4.00	0.008	0.030

- I_h =Hold current: maximum current at which the device will not trip at 25 still air .
- I_t =Trip current minimum current at which the device will always trip at 25°C still air .
- V_{max} =Maximum voltage device can withstand without damage at rated current.
- I_{max} =Maximum fault current device can withstand without damage at rated voltage.
- T_{trip} =Maximum time to trip at 5 times hold current
- R_{max} =Maximum device resistance at 25 prior to tripping.
- R_{min} =Minimum device resistance at 25 prior to tripping.
- $P_{d_{typ}}$ =Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

Thermal Deration Chart-Ihold

MODEL	Maximum ambient operating temperature Vs.hold current								
	-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	0.11	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
SMD1812-125	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
SMD1812-160	2.10	1.96	1.88	1.60	1.26	1.12	0.98	0.84	0.63
SMD1812-200	2.88	2.61	2.25	2.00	1.80	1.66	1.45	1.09	0.80
SMD1812-260	3.90	3.42	2.96	2.60	2.33	2.07	1.94	1.35	1.00
SMD1812-300	4.15	3.76	3.46	3.00	2.55	2.28	2.01	1.61	1.33
SMD1812-350	4.84	4.39	4.04	3.50	2.98	2.66	2.35	1.88	1.55

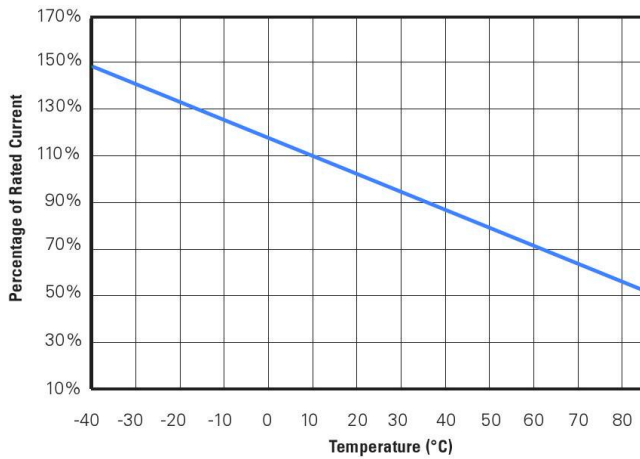
Test Procedures and Requirements

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25°C	$R_{min} \leq R \leq R_{1max}$
Time to Trip	V_{max} , 25°C, In still air @ 25°C	$T \leq \text{max. time to trip (seconds)}$
Hold Current	30 min. at I_H , In still air @ 25°C	No trip
Trip Cycle Life	V_{max} , I_{max} , 100 cycles, In still air @ 25°C	No arcing or burning
Trip Endurance	V_{max} , 1 hours, In still air @ 25°C	No arcing or burning

Environmental Specifications

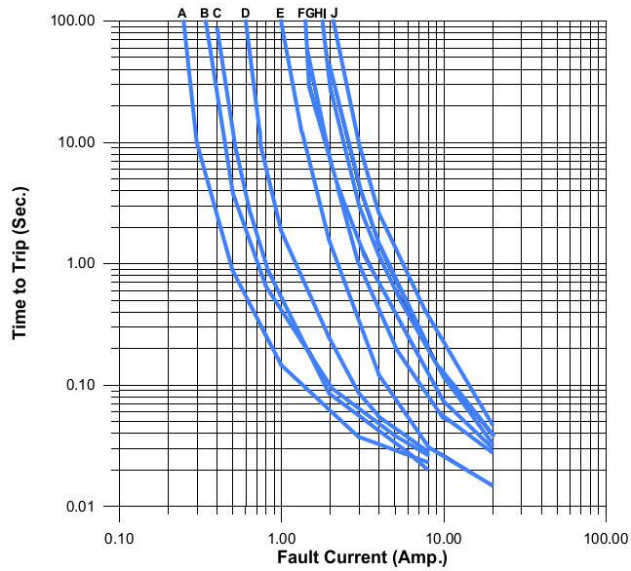
Operating/Storage Temperature	-40°C to +85°C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	Passive Aging +85°C, 1000 hours ±5% typical resistance change
Humidity Aging	+85°C, 85%R.H. 1000 hours ±5% typical resistance change
Thermal Shock	MIL-STD-202 Method 107G +85°C/-40°C 20 times -30% typical resistance change
Solvent Resistance	MIL-STD-202, Method 215 No change
Vibration	MIL-STD-883C, Method 2007.1, Condition A No change

Temperature rating Curve

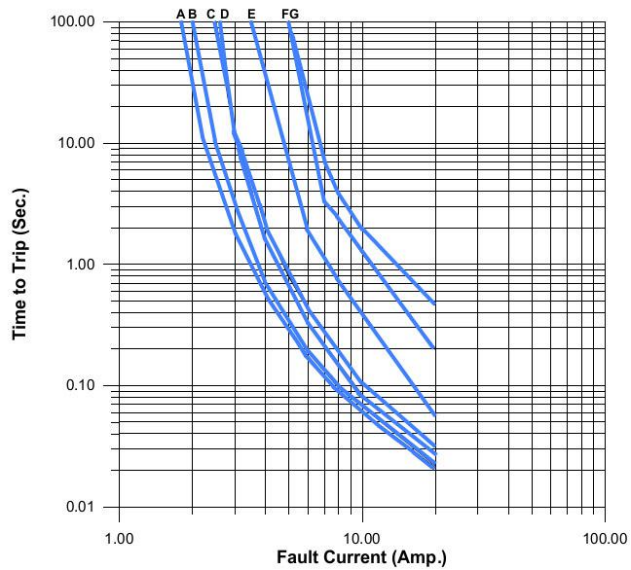


Typical time-to-trip charts @25°C

A=SMD1812-010
B=SMD1812-014
C=SMD1812-020
D=SMD1812-035
E=SMD1812-050
F=SMD1812-075-33
G=SMD1812-075-24
H=SMD1812-110-33
I=SMD1812-110-24



A=SMD1812-110
B=SMD1812-125
C=SMD1812-150
D=SMD1812-160
E=SMD1812-200
F=SMD1812-260
G=SMD1812-300



Warning :

PPTC devices are intended for protection against occasional over-current or over-temperature fault conditions ,and should not be used when repeated fault conditions are anticipated . Operation beyond maximum ratings or improper use may result in device damage and possible electrical arcing and flame .