

FEATURES

- | I(hold): 0.1~4.0A
- | Very high voltage surge capabilities
- | Available in lead-free version
- | Fast response to fault current
- | RoHS compliant, Lead- Free and Halogen-Free
- | Low resistance
- | Compact design saves board space
- | Compatible with high temperature solders



APPLICATIONS

- | USB peripherals
- | Disk drives
- | CD-ROMs
- | General electronics
- | Set-top-box and HDMI
- | Mobile Internet Device (MID)
- | PDAs / digital cameras
- | Game console port protection
- | Plug and play protection for peripherals
- | Mobile phones - battery and port protection

ENVIRONMENTAL SPECIFICATIONS

Test	Conditions	Resistance change
Passive aging	85°C,1000hours	±10%
Humidity aging	85°C/85%RH.1000 hours	±5%
Thermal shock	MIL-STD-202,Method 107G +85°C/-40°C,20times	-30% typical resistance change
Solvent Resistance	MIL-STD-202,Method 215	No change
Vibration	ML-STD-883C,Test Condition A	No change
Ambient operating conditions : - 40°C to +85°C		
Maximum surface temperature of the device in the tripped state is 125 °C		

PERFORMANCE SPECIFICATION

Type Number	I_{hold}	I_{trip}	V_{max}	Max. Time to Trip		I_{max}	Ri_{min}	$R1_{max}$
	A	A	V_{DC}	Current A	T_{max} S	A	Ω	Ω
SMD1812-010	0.10	0.30	30.0	0.5	1.50	100	0.750	15.000
SMD1812-010-60	0.10	0.30	60.0	0.5	1.50	100	0.750	15.000
SMD1812-014-33	0.14	0.34	33.0	1.5	0.15	100	0.650	6.000
SMD1812-014	0.14	0.34	60.0	1.5	0.15	100	0.650	6.000
SMD1812-020	0.20	0.40	30.0	8	0.02	100	0.350	5.000
SMD1812-020-60	0.20	0.40	60.0	8	0.02	100	0.350	5.000
SMD1812-030	0.30	0.60	30.0	8	0.10	100	0.250	3.000
SMD1812-050	0.50	1.00	15.0	8	0.15	100	0.150	1.000
SMD1812-050-24	0.50	1.00	24.0	8	0.15	100	0.150	1.000
SMD1812-050-30	0.50	1.00	30.0	8	0.15	100	0.150	1.000
SMD1812-075	0.75	1.50	13.2	8	0.20	100	0.090	0.450
SMD1812-075-24	0.75	1.50	24	8	0.20	100	0.090	0.450
SMD1812-075-33	0.75	1.50	33	8	0.20	100	0.090	0.450
SMD1812-110	1.10	2.20	16.0	8	0.30	100	0.050	0.250
SMD1812-110-8	1.10	2.20	8.0	8	0.30	100	0.050	0.250
SMD1812-110-24	1.10	2.20	24.0	8	0.30	100	0.050	0.250
SMD1812-110-33	1.10	2.20	33.0	8	0.30	100	0.050	0.250
SMD1812-125-8	1.25	2.50	8.0	8	0.40	100	0.050	0.200
SMD1812-125	1.25	2.50	16.0	8	0.40	100	0.050	0.200
SMD1812-150	1.50	3.00	8.0	8	0.50	100	0.040	0.160
SMD1812-150-16	1.50	3.00	16.0	8	0.50	100	0.040	0.160
SMD1812-150-24	1.50	3.00	24.0	8	0.50	100	0.040	0.160
SMD1812-150-33	1.50	3.00	33.0	8	1.50	100	0.030	0.180
SMD1812-160	1.60	2.80	8.0	8	1.00	100	0.030	0.130
SMD1812-200	2.00	4.00	8.0	8	2.00	100	0.020	0.100
SMD1812-200-12	2.00	4.00	12.0	8	2.00	100	0.020	0.100
SMD1812-200-16	2.00	4.00	16.0	8	2.00	100	0.020	0.100
SMD1812-200-24	2.00	4.00	24.0	8	2.00	100	0.020	0.120
SMD1812-260	2.60	5.00	8.0	8	2.50	100	0.015	0.050
SMD1812-260-12	2.60	5.00	12.0	8	2.50	100	0.015	0.060
SMD1812-260-16	2.60	5.00	16.0	8	2.50	100	0.015	0.060
SMD1812-300	3.00	5.00	6.0	8	4.00	100	0.012	0.040
SMD1812-300-16	3.00	5.00	16.0	8	4.00	40	0.012	0.045
SMD1812-400-16	4.00	8.00	16.0	20	5.00	50	0.002	0.014

V_{max} = Maximum operating 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}).

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

$Ri_{min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.

$R1_{max}$ = Maximum device resistance is measured one hour post reflow.

THERMAL DERATING CHART-IH(A)

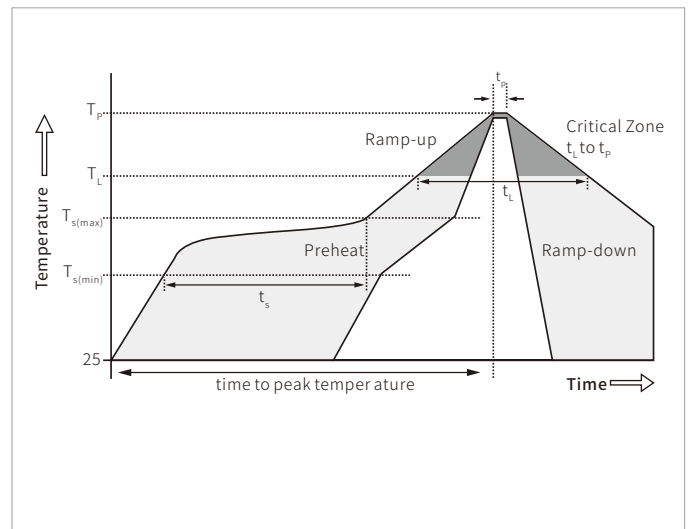
Part Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
SMD1812-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1812-010-60	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1812-014-33	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
SMD1812-014	0.23	0.19	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
SMD1812-020-60	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
SMD1812-050-24	0.59	0.57	0.55	0.50	0.45	0.43	0.35	0.30	0.23
SMD1812-050-30	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
SMD1812-075-24	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812-075-33	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
SMD1812-110-8	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
SMD1812-125-8	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
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
SMD1812-150-16	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
SMD1812-150-33	2.17	1.95	1.72	1.50	1.30	1.18	1.09	0.97	0.82
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
SMD1812-200-24	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
SMD1812-300-16	4.34	3.92	3.45	3.00	2.63	2.49	2.18	2.09	1.79
SMD1812-400-16	5.90	5.30	4.63	4.00	3.50	3.13	2.85	2.45	1.93

DIMENSIONS

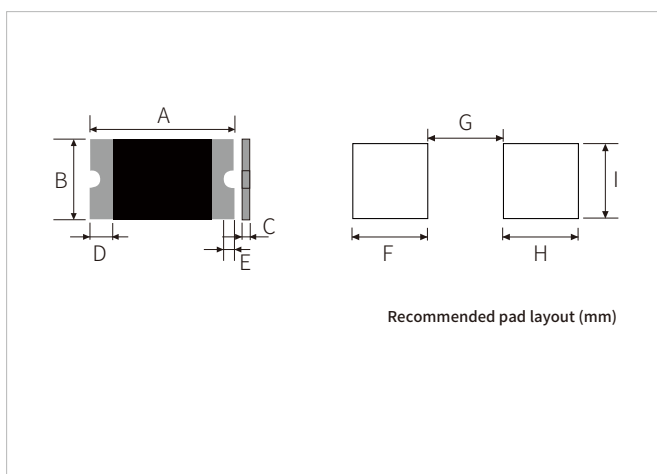
Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1812-010	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-010-60	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-014-33	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-014	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-020	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-020-60	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	0.15
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
SMD1812-075	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
SMD1812-110-8	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
SMD1812-125-8	4.37	4.73	3.07	3.41	0.30	0.90	0.30	0.15
SMD1812-125	4.37	4.73	3.07	3.41	0.50	1.20	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
SMD1812-150-33	4.37	4.73	3.07	3.41	0.90	1.50	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	0.50	1.20	0.30	0.15
SMD1812-200-16	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.15
SMD1812-200-24	4.37	4.73	3.07	3.41	0.80	1.80	0.30	0.25
SMD1812-260	4.37	4.73	3.07	3.41	0.50	1.20	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
SMD1812-300-16	4.37	4.73	3.07	3.41	0.80	1.60	0.30	0.25
SMD1812-400-16	4.37	5.15	3.07	3.75	0.70	1.30	0.30	0.25

REFLOW PROFILE

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time(min to max)	60-180 secs
Average ramp up rate (Liquidus)Temp (T_L) to peak $T_s(max)$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (T_L)	60-150 seconds
Peak Temperature (T_p)		260+0/-5 °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

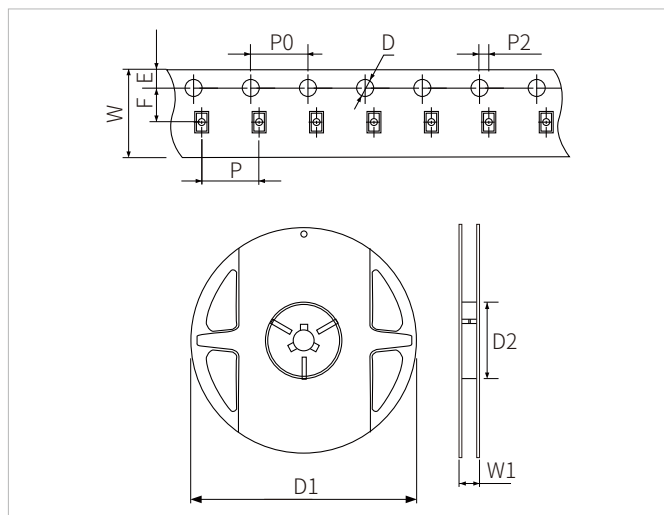


PACKAGE MECHANICAL DATA



Ref.	Dimensions
	Millimeters
A	See Dimensions Table
B	
C	
D	
E	
F	1.5
G	3.0
H	1.5
I	3.5

TAPING AND REEL SPECIFICATIONS



Symbol	Dimensions	
	Millimeters	Inches
W	12.0±0.3	0.472±0.012
P	8.0±0.1	0.315±0.004
P0	4.0±0.1	0.157±0.004
P2	2.0±0.05	0.079±0.002
F	5.5±0.05	0.217±0.002
E	1.75±0.1	0.061±0.002
D	1.55±0.05	0.061±0.002
D1(max)	178	7.007
D2(min)	60	2.362
W1	12.0±1	0.472±0.039

ORDERING INFORMATION

Part Number	QTY/Reel	Reel Size
SMD1812-010/010-60/014-33/014/020/020-60/030/075-33/110-24/110-33 125/150-16/150-24/150-33/200-12/200-16/200-24/260/260-12/260-16 300/300-16/400/16	1500PCS	7"
SMD1812-050/050-24/050-30/075/075-24/110/110-8/125-8/150/160/200	2000PCS	7"

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