

FEATURES

- | I(hold): 0.1~3.0A
- | 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}	$R_{i_{min}}$	$R1_{max}$
	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
SMD1812-030	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
SMD1812-160	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
SMD1812-260	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

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.

$R_{i_{min/max}}$ = 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)

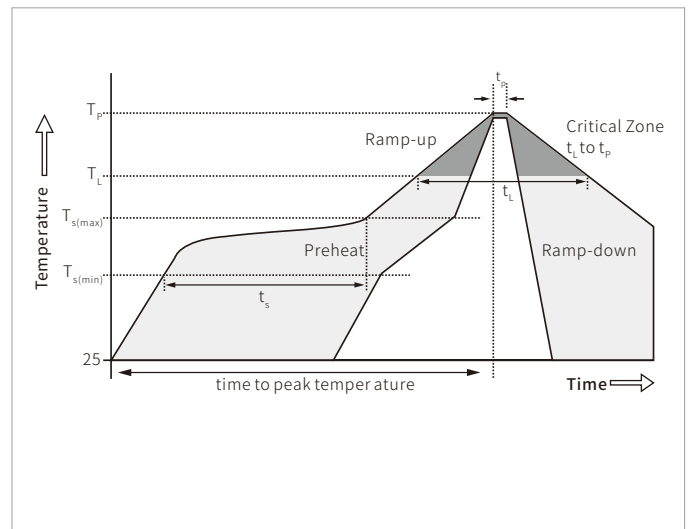
Part Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
SMD1812-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1812-010-60	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1812-014-33	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
SMD1812-014	0.23	0.19	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
SMD1812-030	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
SMD1812-160	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
SMD1812-300-16	4.34	3.92	3.45	3.00	2.63	2.49	2.18	2.09	1.79

DIMENSIONS

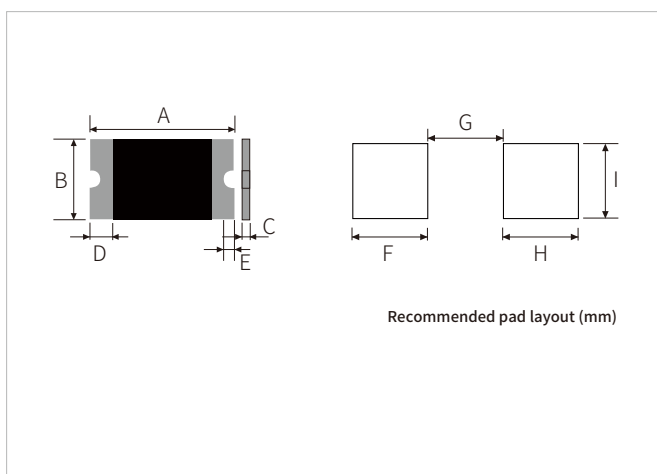
Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1812-010	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-010-60	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-014-33	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-014	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-020	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.15
SMD1812-030	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
SMD1812-160	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
SMD1812-260	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

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

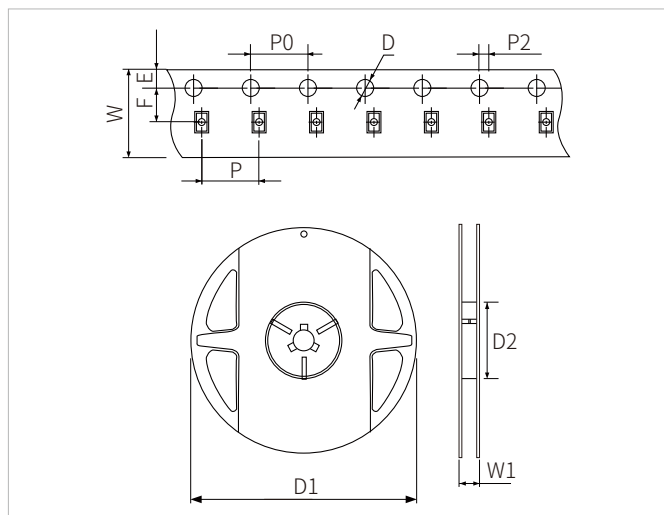


PACKAGE MECHANICAL DATA



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

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.