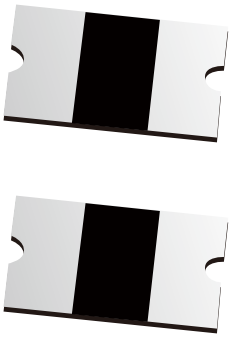
FEATURES

- I(hold): 0.05~2.60A
- 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℃,1000 hrs	±5% typica
Humidity aging	+85℃，85%R.H.,168 hours	±5% typical
Thermal shock	+85℃ to -40℃，20times	±33% typical
Resistance to solvent	MIL-STD-202，Method 215	No change
Vibration	MIL-STD-202，Method 201	No change
Ambient operating conditions : - 40℃ to +85℃		
Maximum surface temperature of the device in the tripped state is 125 ℃		

PERFORMANCE SPECIFICATION

Type Number	I_{hold}	I_{trip}	V_{max}	Max. Time to Trip		I_{max}	$P_{d\,typ}$	Ri_{min}	$R1_{max}$
	A	A	V_{DC}	Current A	T_{max} S	A	W	Ω	Ω
SMD1210-005	0.05	0.15	30	0.25	1.50	30	0.6	2.8	50
SMD1210-010	0.10	0.30	30	0.50	0.60	30	0.6	0.8	15
SMD1210-010/60	0.10	0.30	30	0.50	0.60	30	0.6	0.8	15
SMD1210-020	0.20	0.40	30	8.00	0.02	30	0.6	0.4	5
SMD1210-035	0.35	0.75	6	8.00	0.20	30	0.6	0.2	1.3
SMD1210-035/13.2	0.35	0.75	13.2	8.00	0.20	30	0.6	0.2	1.3
SMD1210-035/16	0.35	0.75	16	8.00	0.20	30	0.6	0.2	1.3
SMD1210-050	0.50	1.00	13.2	8.00	0.10	30	0.6	0.18	0.9
SMD1210-050/16	0.50	1.00	16	8.00	0.10	30	0.6	0.18	0.9
SMD1210-050/24	0.50	1.00	24	8.00	0.10	30	0.6	0.18	0.9
SMD1210-050/30	0.50	1.00	30	8.00	0.10	30	0.6	0.18	0.9
SMD1210-075	0.75	1.50	6	8.00	0.10	30	0.6	0.07	0.4
SMD1210-075/16	0.75	1.50	16	8.00	0.10	30	0.6	0.07	0.4
SMD1210-075/24	0.75	1.50	24	8.00	0.10	30	0.6	0.07	0.45
SMD1210-100	1.00	2.20	6	8.00	0.30	35	0.6	0.05	0.21
SMD1210-110	1.10	2.20	6	8.00	0.30	35	0.6	0.05	0.21
SMD1210-110/16	1.10	2.20	16	8.00	0.30	35	0.6	0.05	0.21
SMD1210-150	1.50	3.00	6	8.00	0.50	35	0.6	0.03	0.11
SMD1210-150/12	1.50	3.00	12	8.00	0.50	35	0.6	0.03	0.11
SMD1210-150/16	1.50	3.00	16	8.00	0.50	35	0.6	0.03	0.11
SMD1210-175	1.75	3.50	6	8.00	0.60	35	0.8	0.02	0.08
SMD1210-200	2.00	4.00	6	8.00	1.00	35	0.8	0.015	0.07
SMD1210-260	2.60	5.20	6	8.00	2.00	35	0.8	0.01	0.06

V_{max}= Maximum operating voltage device can withstand without damage at rated current (Imax).
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
SMD1210-005	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02
SMD1210-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1210-010/60	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1210-020	0.29	0.26	0.22	0.20	0.16	0.14	0.13	0.11	0.08
SMD1210-035	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210-035/13.2	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210-035/16	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210-050	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210-050/16	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210-050/24	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210-050/30	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210-075	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SMD1210-075/16	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SMD1210-075/24	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SMD1210-100	1.69	1.48	1.29	1.00	0.88	0.76	0.65	0.57	0.43
SMD1210-110	1.69	1.48	1.29	1.10	0.94	0.86	0.80	0.70	0.58
SMD1210-110/16	1.69	1.48	1.29	1.10	0.94	0.86	0.80	0.70	0.58
SMD1210-150	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
SMD1210-150/12	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
SMD1210-150/16	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
SMD1210-175	2.54	2.30	2.02	1.75	1.47	1.33	1.18	1.05	0.86
SMD1210-200	2.90	2.63	2.31	2.00	1.68	1.52	1.35	1.20	0.98
SMD1210-260	3.43	3.22	2.93	2.60	2.23	2.03	1.87	1.57	1.35

DIMENSIONS

Type Number	Package Dimensions (mm)							Package Dimensions (in)						
	A		B		C		D	A		B		C		D
	min	max	min	max	min	max	min	min	max	min	max	min	max	min
SMD1210-005	3	3.5	2.35	2.8	0.6	1.2	0.3	0.118	0.138	0.093	0.110	0.024	0.047	0.012
SMD1210-010	3	3.5	2.35	2.8	0.6	1.2	0.3	0.118	0.138	0.093	0.110	0.024	0.047	0.012
SMD1210-010/60	3	3.5	2.35	2.8	0.6	1.2	0.3	0.118	0.138	0.093	0.110	0.024	0.047	0.012
SMD1210-020	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-035	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-035/13.2	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-035/16	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-050	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-050/16	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-050/24	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-050/30	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-075	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-075/16	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-075/24	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-100	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-110	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-110/16	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-150	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-150/12	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-150/16	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-175	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-200	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012
SMD1210-260	3	3.5	2.35	2.8	0.5	1.1	0.3	0.118	0.138	0.093	0.110	0.020	0.043	0.012

PARAMETER CHARACTERISTIC CURVE

FIG.1: Thermal Derating Curve

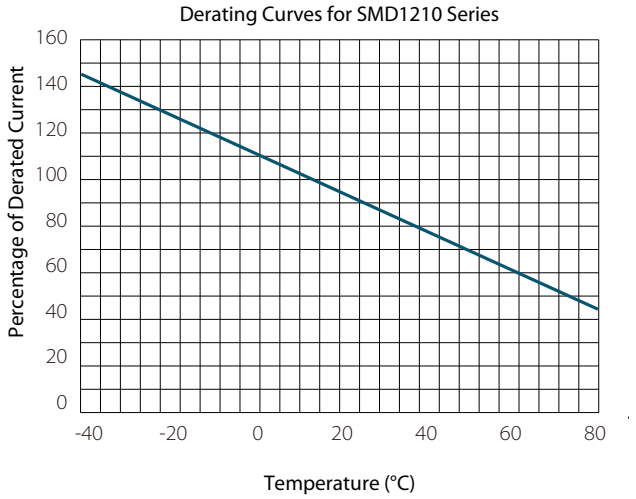
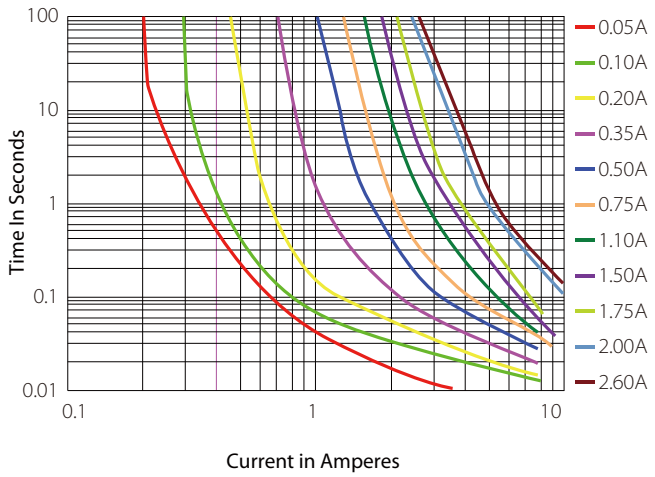
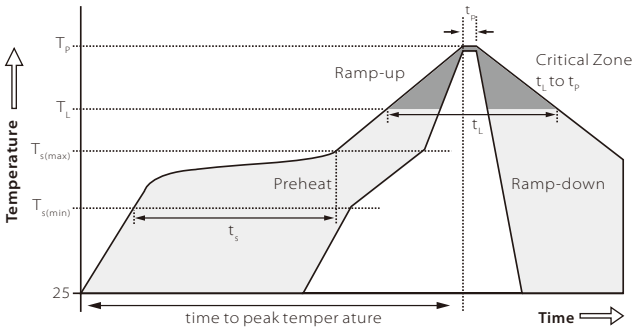


FIG.2: Average Time-Current Curve

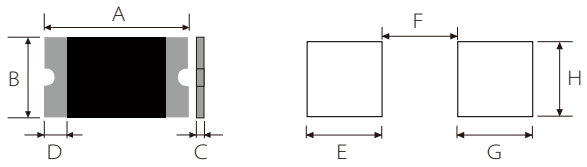


REFLOW PROFILE

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℃
	Temperature (T_L)	60-150 seconds
Peak Temperature (T_p)		260+0/-5 °C
Time within 5°C of actual peak Temperature (tp)		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



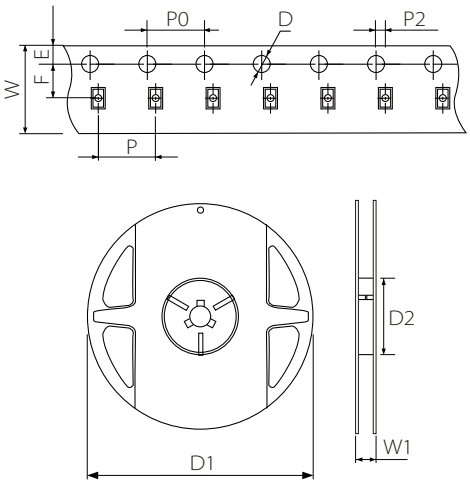
PACKAGE MECHANICAL DATA



Recommended pad layout (mm)

Ref.	Dimensions
	Millimeters
A	See Dimensions Table
B	
C	
D	
E	1.0
F	2.0
G	1.0
H	2.8

TAPING AND REEL SPECIFICATIONS



Symbol	Dimensions	
	Millimeters	Inches
W	8.15±0.3	0.32±0.012
P	4.0±0.1	0.157±0.004
P0	4.0±0.1	0.157±0.004
P2	2.0±0.05	0.079±0.002
F	3.5±0.05	0.138±0.002
E	1.75±0.1	0.069±0.004
D	1.55±0.05	0.061±0.002
D1(max)	178	7.007
D2(min)	60	2.362
W1	9±0.5	0.354±0.02

ORDERING INFORMATION

Part Number	QTY/Reel	Reel Size
SMD1210xxx	4000PCS	7″

To find your local partner within Semiwell's website : www.semiwell.com.cn