

FEATURES

- | I(hold): 1.5A~7.5A
- | 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,1000 hours	±10% typical
Humidity aging	85°C/85%RH.100 hours	±5% typical
Thermal shock	MIL-STD-202,Method 107G +85°C/-40°C,20times	-30% typical
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}	P_d	Resistance	
	A	A	V	Current (A)	T_{max} (S)	A	W	$R_{i_{min}}(\Omega)$	$R_{1_{max}}(\Omega)$
SMD1210-150L	1.5	3.0	6.0	8.0	2.0	50.0	0.8	0.010	0.060
SMD1210-150L-12	1.5	3.0	12.0	8.0	2.0	50.0	0.8	0.010	0.060
SMD1210-175L	1.75	3.5	6.0	8.0	2.0	50.0	0.8	0.010	0.040
SMD1210-175L-12	1.75	3.5	12.0	8.0	2.0	50.0	0.8	0.010	0.040
SMD1210-190L	1.9	3.8	6.0	8.0	3.0	50.0	0.8	0.006	0.037
SMD1210-190L-12	1.9	3.8	12.0	8.0	3.0	50.0	0.8	0.006	0.037
SMD1210-200L	2.0	4.0	6.0	8.0	3.0	50.0	0.8	0.006	0.035
SMD1210-200L-12	2.0	4.0	12.0	8.0	3.0	50.0	0.8	0.006	0.035
SMD1210-260L	2.6	5.2	6.0	13.0	2.0	50.0	0.8	0.003	0.025
SMD1210-260L-12	2.6	5.2	12.0	13.0	2.0	50.0	0.8	0.003	0.025
SMD1210-300L	3.0	6.0	6.0	15.0	2.0	50.0	0.8	0.003	0.02
SMD1210-300L-12	3.0	6.0	12.0	15.0	2.0	50.0	0.8	0.003	0.02
SMD1210-350L	3.5	7.0	6.0	17.5	2.0	50.0	0.8	0.002	0.018
SMD1210-350L-12	3.5	7.0	12.0	17.5	2.0	50.0	0.8	0.002	0.018
SMD1210-380L	3.8	7.6	6.0	19.0	2.0	50.0	0.8	0.002	0.016
SMD1210-380L-12	3.8	7.6	12.0	19.0	2.0	50.0	0.8	0.002	0.016
SMD1210-400L	4.0	8.0	6.0	20.0	2.0	50.0	0.8	0.002	0.014
SMD1210-400L-12	4.0	8.0	12.0	20.0	2.0	50.0	0.8	0.002	0.014
SMD1210-450L	4.5	9.0	6.0	22.5	2.0	50.0	1.0	0.001	0.013
SMD1210-450L-12	4.5	9.0	12.0	22.5	2.0	50.0	1.0	0.001	0.013
SMD1210-500L	5.0	10.0	6.0	25.0	2.0	50.0	1.0	0.001	0.012
SMD1210-500L-12	5.0	10.0	12.0	25.0	2.0	50.0	1.0	0.001	0.012
SMD1210-550L	5.5	11.0	6.0	27.5	2.0	50.0	1.0	0.001	0.011
SMD1210-550L-12	5.5	11.0	12.0	27.5	2.0	50.0	1.0	0.001	0.011
SMD1210-600L	6.0	12.0	6.0	30.0	2.0	50.0	1.2	0.001	0.010
SMD1210-600L-12	6.0	12.0	12.0	30.0	2.0	50.0	1.2	0.001	0.010
SMD1210-650L	6.5	13.0	6.0	32.5	2.0	50.0	1.2	0.001	0.009
SMD1210-650L-12	6.5	13.0	12.0	32.5	2.0	50.0	1.2	0.001	0.009
SMD1210-700L	7.0	14.0	6.0	35.0	2.0	50.0	1.2	0.001	0.008
SMD1210-700L-12	7.0	14.0	12.0	35.0	2.0	50.0	1.2	0.001	0.008
SMD1210-750L	7.5	15.0	6.0	37.5	2.0	50.0	1.2	0.001	0.007
SMD1210-750L-12	7.5	15.0	12.0	37.5	2.0	50.0	1.2	0.001	0.007

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.

$R_{1_{max}}$ = Maximum device resistance is measured one hour post reflow.

THERMAL DERATING CHART-I_H (A)

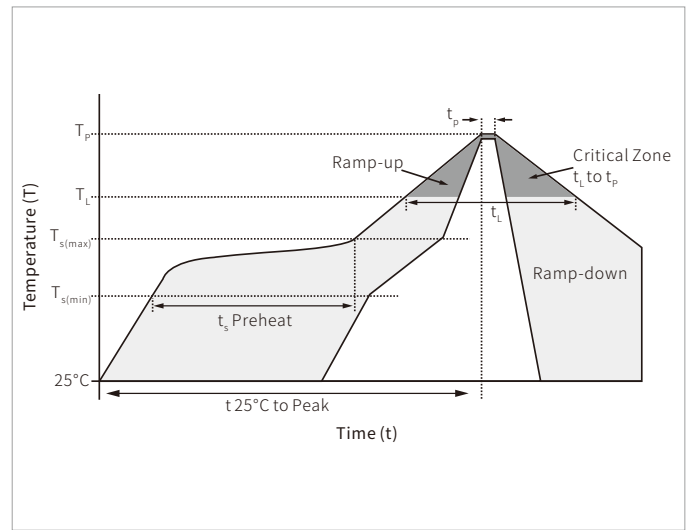
Type Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
SMD1210-150L	2.25	2.00	1.75	1.50	1.33	1.15	1.05	0.93	0.70
SMD1210-150L-12	2.25	2.00	1.75	1.50	1.33	1.15	1.05	0.93	0.70
SMD1210-175L	2.55	2.33	2.02	1.75	1.53	1.35	1.23	1.07	0.85
SMD1210-175L-12	2.55	2.33	2.02	1.75	1.53	1.35	1.23	1.07	0.85
SMD1210-190L	2.81	2.53	2.20	1.90	1.67	1.47	1.34	1.17	0.91
SMD1210-190L-12	2.81	2.53	2.20	1.90	1.67	1.47	1.34	1.17	0.91
SMD1210-200L	2.96	2.67	2.32	2.00	1.76	1.55	1.41	1.23	0.96
SMD1210-200L-12	2.96	2.67	2.32	2.00	1.76	1.55	1.41	1.23	0.96
SMD1210-260L	3.85	3.47	3.02	2.60	2.29	2.01	1.84	1.59	1.25
SMD1210-260L-12	3.85	3.47	3.02	2.60	2.29	2.01	1.84	1.59	1.25
SMD1210-300L	4.44	4.00	3.48	3.00	2.64	2.32	2.12	1.84	1.44
SMD1210-300L-12	4.44	4.00	3.48	3.00	2.64	2.32	2.12	1.84	1.44
SMD1210-350L	5.18	4.67	4.06	3.50	3.08	2.71	2.47	2.15	1.68
SMD1210-350L-12	5.18	4.67	4.06	3.50	3.08	2.71	2.47	2.15	1.68
SMD1210-380L	5.62	5.07	4.41	3.80	3.34	2.94	2.68	2.33	1.82
SMD1210-380L-12	5.62	5.07	4.41	3.80	3.34	2.94	2.68	2.33	1.82
SMD1210-400L	5.92	5.33	4.64	4.00	3.52	3.09	2.83	2.45	1.92
SMD1210-400L-12	5.92	5.33	4.64	4.00	3.52	3.09	2.83	2.45	1.92
SMD1210-450L	6.66	6.00	5.22	4.50	3.96	3.48	3.17	2.76	2.16
SMD1210-450L-12	6.66	6.00	5.22	4.50	3.96	3.48	3.17	2.76	2.16
SMD1210-500L	7.40	6.67	5.80	5.00	4.40	3.87	3.53	3.07	2.40
SMD1210-500L-12	7.40	6.67	5.80	5.00	4.40	3.87	3.53	3.07	2.40
SMD1210-550L	8.14	7.34	6.38	5.50	4.84	4.26	3.88	3.38	2.64
SMD1210-550L-12	8.14	7.34	6.38	5.50	4.84	4.26	3.88	3.38	2.64
SMD1210-600L	8.65	7.91	6.93	6.00	5.23	4.45	4.00	3.63	2.85
SMD1210-600L-12	8.65	7.91	6.93	6.00	5.23	4.45	4.00	3.63	2.85
SMD1210-650L	9.20	8.45	7.45	6.50	5.60	4.65	4.30	3.89	3.00
SMD1210-650L-12	9.20	8.45	7.45	6.50	5.60	4.65	4.30	3.89	3.00
SMD1210-700L	9.84	9.00	7.95	7.00	5.96	4.95	4.50	4.16	3.20
SMD1210-700L-12	9.84	9.00	7.95	7.00	5.96	4.95	4.50	4.16	3.20
SMD1210-750L	10.5	9.65	8.50	7.50	6.40	5.30	4.80	4.45	4.42
SMD1210-750L-12	10.5	9.65	8.50	7.50	6.40	5.30	4.80	4.45	4.42

DIMENSIONS

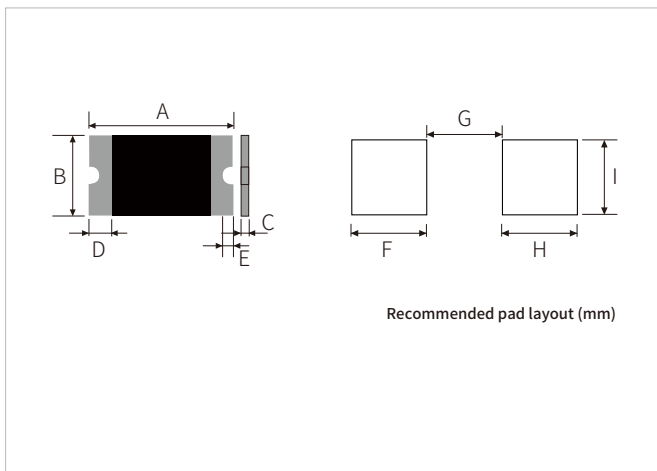
Type Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1210-150L	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-150L-12	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-175L	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-175L-12	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-190L	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-190L-12	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-200L	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-200L-12	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SMD1210-260L	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SMD1210-260L-12	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SMD1210-300L	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SMD1210-300L-12	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SMD1210-350L	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SMD1210-350L-12	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SMD1210-380L	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SMD1210-380L-12	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SMD1210-400L	3.0	3.43	2.35	2.8	0.5	1.2	0.25	0.1
SMD1210-400L-12	3.0	3.43	2.35	2.8	0.5	1.2	0.25	0.1
SMD1210-450L	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SMD1210-450L-12	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SMD1210-500L	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SMD1210-500L-12	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SMD1210-550L	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SMD1210-550L-12	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SMD1210-600L	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-600L-12	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-650L	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-650L-12	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-700L	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-700L-12	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-750L	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SMD1210-750L-12	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1

SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	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

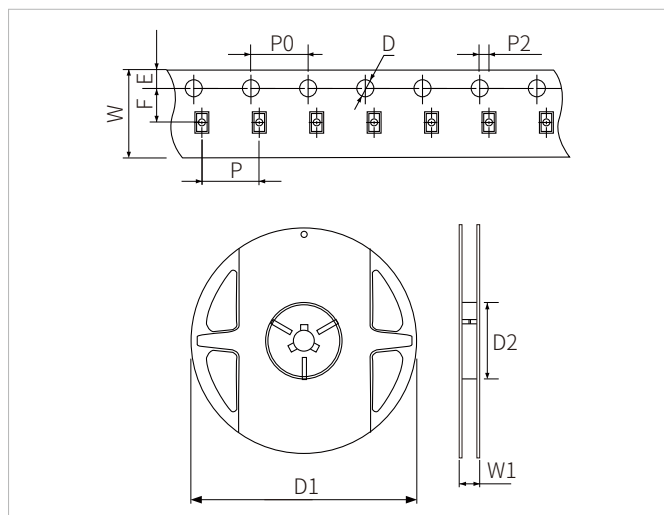


PACKAGE MECHANICAL DATA



Ref.	Dimensions
	Millimeters
A	See Dimensions Table
B	
C	
D	
E	
F	1.0
G	2.0
H	1.0
I	2.5

TAPING AND REEL SPECIFICATIONS



Symbol	Dimensions	
	Millimeters	Inches
W	8.0 ± 0.3	0.315 ± 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	3.50 ± 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)	59	2.323
W1	12 ± 1	0.472 ± 0.04

ORDERING INFORMATION

Part Number	QTY/Reel	Reel Size
SMD1210-150L-SMD1210-650L-12	4000PCS	7"
SMD1210-700L-SMD1210-750L-12	3000PCS	7"

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