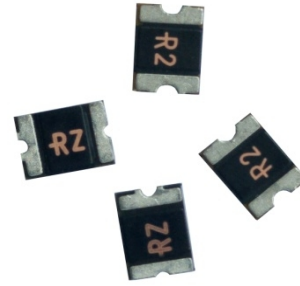


**Description**

The 1210 series provides miniature surface mount over-current protection with holding current from 0.05A to 2.60A. This series is suitable for wide range of applications in modern electronics where space is limited



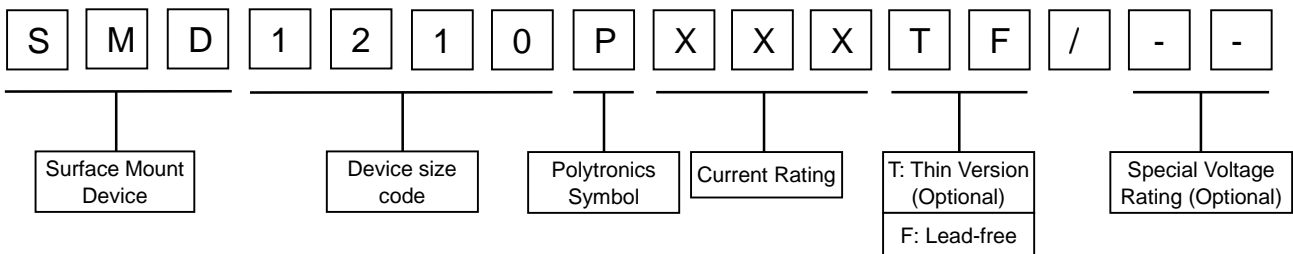
**Features**

- I I(hold): 0.05~2.60A
- I Very high voltage surge capabilities
- I Available in lead-free version
- I Fast response to fault current
- I RoHS compliant, Lead- Free and Halogen-Free
- I Low resistance
- I Compact design saves board space
- I Compatible with high temperature solders

**Applications**

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

**Part Number Code**



**Environmental Specifications**

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs	±5% typical
Humidity aging	+85°C, 85%R.H., 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 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 °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		$I_{max}$	$P_d$ typ	$Ri_{min}$	$R1_{max}$	Package
	A	A	$V_{DC}$	Current A	$T_{max}$ S	A	W	$\Omega$	$\Omega$	
SMD1210P005TF	0.05	0.15	30	0.25	1.50	30	0.6	2.8	50	1210
SMD1210P010TF	0.10	0.30	30	0.50	0.60	30	0.6	0.8	15	1210
SMD1210P010TF/60	0.10	0.30	60	0.50	0.60	30	0.6	0.8	15	1210
SMD1210P020TF	0.20	0.40	30	8.00	0.02	30	0.6	0.4	5	1210
SMD1210P035TF	0.35	0.75	6	8.00	0.20	30	0.6	0.2	1.3	1210
SMD1210P035TF/13.2	0.35	0.75	13.2	8.00	0.20	30	0.6	0.2	1.3	1210
SMD1210P035TF/16	0.35	0.75	16	8.00	0.20	30	0.6	0.2	1.3	1210
SMD1210P050TF	0.50	1.00	13.2	8.00	0.10	30	0.6	0.18	0.9	1210
SMD1210P050TF/16	0.50	1.00	16	8.00	0.10	30	0.6	0.18	0.9	1210
SMD1210P050TF/24	0.50	1.00	24	8.00	0.10	30	0.6	0.18	0.9	1210
SMD1210P050TF/30	0.50	1.00	30	8.00	0.10	30	0.6	0.18	0.9	1210
SMD1210P075TF	0.75	1.50	6	8.00	0.10	30	0.6	0.07	0.4	1210
SMD1210P075TF/16	0.75	1.50	16	8.00	0.10	30	0.6	0.07	0.4	1210
SMD1210P100TF	1.00	2.20	6	8.00	0.30	35	0.6	0.05	0.21	1210
SMD1210P110TF	1.10	2.20	6	8.00	0.30	35	0.6	0.05	0.21	1210
SMD1210P110TF/16	1.10	2.20	16	8.00	0.30	35	0.6	0.05	0.21	1210
SMD1210P150TF	1.50	3.00	6	8.00	0.50	35	0.6	0.03	0.11	1210
SMD1210P150TF/12	1.50	3.00	12	8.00	0.50	35	0.6	0.03	0.11	1210
SMD1210P150TF/16	1.50	3.00	16	8.00	0.50	35	0.6	0.03	0.11	1210
SMD1210P175TF	1.75	3.50	6	8.00	0.60	35	0.8	0.02	0.08	1210
SMD1210P200TF	2.00	4.00	6	8.00	1.00	35	0.8	0.015	0.07	1210
SMD1210P260TF	2.60	5.20	6	8.00	2.00	35	0.8	0.01	0.06	1210

$V_{max}$  = 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.

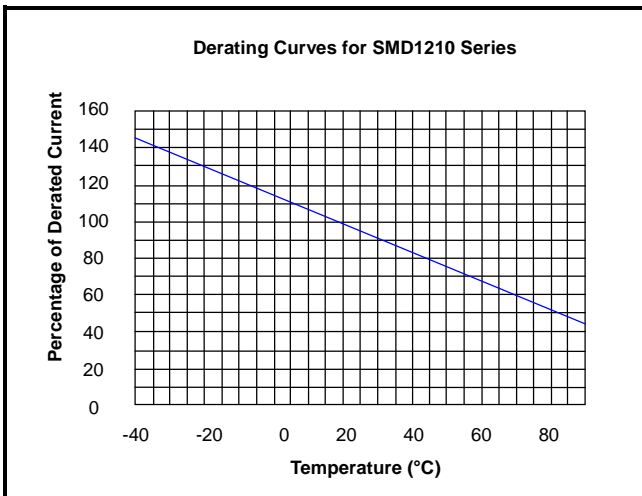
$R1_{max}$  = Maximum device resistance is measured one hour post reflow.



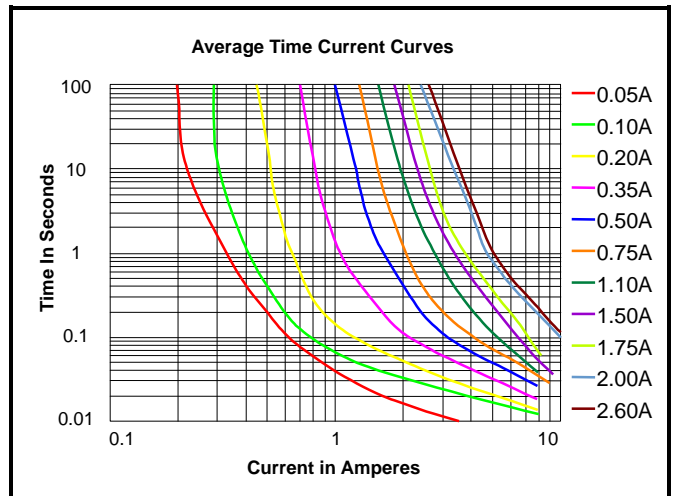
**Thermal Derating Chart-Ih(A)**

Part Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
SMD1210P005TF	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02
SMD1210P010TF	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1210P010TF/60	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1210P020TF	0.29	0.26	0.22	0.20	0.16	0.14	0.13	0.11	0.08
SMD1210P035TF	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210P035TF/13.2	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210P035TF/16	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210P050TF	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210P050TF/16	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210P050TF/24	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210P050TF/30	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210P075TF	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SMD1210P075TF/16	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SMD1210P100TF	1.69	1.48	1.29	1.00	0.88	0.76	0.65	0.57	0.43
SMD1210P110TF	1.69	1.48	1.29	1.10	0.94	0.86	0.80	0.70	0.58
SMD1210P110TF/16	1.69	1.48	1.29	1.10	0.94	0.86	0.80	0.70	0.58
SMD1210P150TF	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
SMD1210P150TF/12	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
SMD1210P150TF/16	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
SMD1210P175TF	2.54	2.30	2.02	1.75	1.47	1.33	1.18	1.05	0.86
SMD1210P200TF	2.90	2.63	2.31	2.00	1.68	1.52	1.35	1.20	0.98
SMD1210P260TF	3.43	3.22	2.93	2.60	2.23	2.03	1.87	1.57	1.35

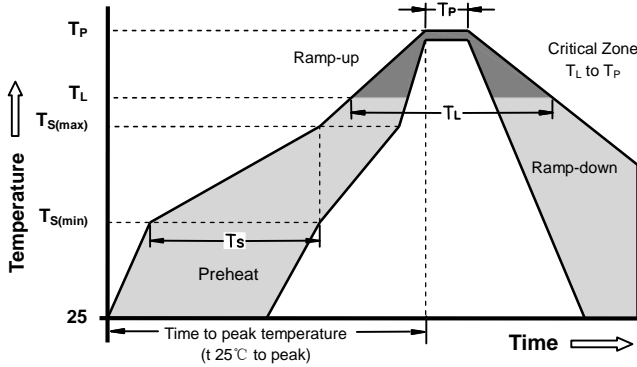
**Thermal Derating Curve**



**Average Time-Current Curve**



**Soldering Parameters**



<b>Reflow Condition</b>		Pb - Free assembly
<b>Pre Heat</b>	-Temperature Min ( $T_{S(min)}$ )	150°C
	-Temperature Max ( $T_{S(max)}$ )	200°C
	- Time (min to max) ( $t_s$ )	60 - 180 Seconds
<b>Average ramp up rate ( Liquids Temp <math>T_L</math> to peak)</b>		3°C/second max
<b><math>T_{S(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		3°C/second max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquids)	217°C
	- Time (min to max) ( $t_s$ )	60 - 150 Seconds
<b>Peak Temperature (<math>T_P</math>)</b>		260 +0/-5°C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		20 - 40 Seconds
<b>Ramp-down Rate</b>		6°C/second max
<b>Time 25°C to peak Temperature (<math>T_P</math>)</b>		8 minutes Max
<b>Do not exceed</b>		260°C

Lead style code	Recommended Pad Layout (mm.)

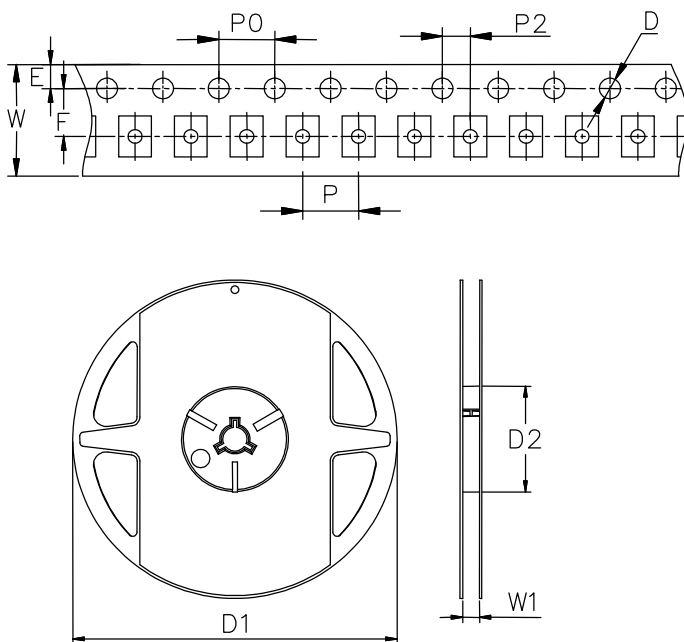
**Dimensions**

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
SMD1210P005TF	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
SMD1210P010TF	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
SMD1210P010TF/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
SMD1210P020TF	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
SMD1210P035TF	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
SMD1210P035TF/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
SMD1210P035TF/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
SMD1210P050TF	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
SMD1210P050TF/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
SMD1210P050TF/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
SMD1210P050TF/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
SMD1210P075TF	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



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
SMD1210P075TF/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
SMD1210P100TF	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
SMD1210P110TF	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
SMD1210P110TF/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
SMD1210P150TF	3	3.5	2.35	2.8	0.5	1.2	0.3	0.118	0.138	0.093	0.110	0.020	0.047	0.012
SMD1210P150TF/12	3	3.5	2.35	2.8	0.5	1.2	0.3	0.118	0.138	0.093	0.110	0.020	0.047	0.012
SMD1210P150TF/16	3	3.5	2.35	2.8	0.5	1.2	0.3	0.118	0.138	0.093	0.110	0.020	0.047	0.012
SMD1210P175TF	3	3.5	2.35	2.8	0.8	1.4	0.3	0.118	0.138	0.093	0.110	0.031	0.055	0.012
SMD1210P200TF	3	3.5	2.35	2.8	0.8	1.4	0.3	0.118	0.138	0.093	0.110	0.031	0.055	0.012
SMD1210P260TF	3	3.5	2.35	2.8	1.0	1.6	0.3	0.118	0.138	0.093	0.110	0.039	0.063	0.012

**Taping and Reel Specifications**



Symbol	Millimeters	Inches
W	8.15±0.3	0.321±0.012
P	4.0±0.1	0.157±0.004
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
P0	4.0±0.1	0.157±0.004
P2	2.0±0.05	0.079±0.002
D1(max.)	178	7.007
D2(min.)	60	2.362
W1	9±0.5	0.354±0.02

Part Number	Halogen Free	Packaging Option	Quantity	Quantity & Packaging Codes
SMD1210PxxxTF	Yes	Tape and Reel	4000	YR



单击下面可查看定价，库存，交付和生命周期等信息

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