

Surface-Mount Device

SMD1210

ROHS 

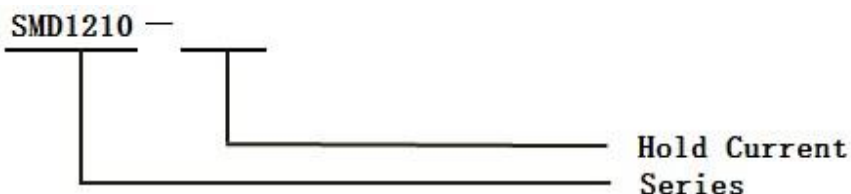
Feature

- Resettable over current and over temperature protection
- Small size of 1210
- Small footprint
- Low resistance
- Fast time-to-trip
- ROHS complaint

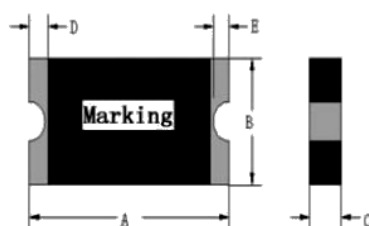
Application

- Computer
- Battery
- Mobile phones
- Industrial controls
- Automotive
- Portable electronics
- Multimedia
- Game machines
- Telephony and broadband

Part Numbering



Product Dimensions in Millimeter



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
SMD1210-150	--	3.50	--	2.85	--	1.0	0.25	--	0.10	--
SMD1210-175	--	3.50	--	2.85	--	1.0	0.25	--	0.10	--
SMD1210-190	--	3.50	--	2.85	--	1.0	0.25	--	0.10	--
SMD1210-200	--	3.50	--	2.85	--	1.0	0.25	--	0.10	--
SMD1210-210	--	3.50	--	2.85	--	1.0	0.25	--	0.10	--
SMD1210-230	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-250	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-260	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-300	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-350	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-380	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-400	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-450	--	3.50	--	2.85	--	1.2	0.25	--	0.10	--
SMD1210-500	--	3.50	--	2.85	--	1.5	0.25	--	0.10	--
SMD1210-550	--	3.50	--	2.85	--	1.5	0.25	--	0.10	--
SMD1210-600	--	3.50	--	2.85	--	1.5	0.25	--	0.10	--
SMD1210-650	--	3.50	--	2.85	--	1.5	0.25	--	0.10	--

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Electrical Characteristics

Part Number	I(A)		V _{max}	I _{max}	Pd _{typ}	T _{trip}		R _{min}	R _{max}	R _{1max}
	25℃		--	--	--	25℃		25℃		
	Hold	Trip	(V)	(A)	(W)	Current(A)	Time(S)	(Ω)	(Ω)	(Ω)
SMD1210-150	1.50	3.0	6.0	50	1.2	8.0	0.5	0.005	0.012	0.050
SMD1210-175	1.75	3.5	6.0	50	1.2	8.0	1.0	0.005	0.012	0.040
SMD1210-190	1.90	3.8	6.0	50	1.2	8.0	3.0	0.005	0.011	0.035
SMD1210-200	2.00	4.0	6.0	50	1.2	8.0	3.0	0.005	0.011	0.032
SMD1210-210	2.10	4.2	6.0	50	1.2	8.0	5.0	0.005	0.010	0.030
SMD1210-230	2.30	4.6	6.0	50	1.2	8.0	5.0	0.005	0.010	0.028
SMD1210-250	2.50	5.0	6.0	50	1.2	8.0	5.0	0.004	0.009	0.025
SMD1210-260	2.60	5.2	6.0	50	1.2	12.0	5.0	0.004	0.009	0.020
SMD1210-300	3.00	6.0	6.0	50	1.2	12.0	5.0	0.004	0.008	0.018
SMD1210-350	3.50	7.0	6.0	50	1.2	12.0	5.0	0.003	0.008	0.017
SMD1210-380	3.80	7.6	6.0	50	1.5	12.0	5.0	0.003	0.007	0.016
SMD1210-400	4.00	8.0	6.0	50	1.5	16.0	5.0	0.002	0.007	0.015
SMD1210-450	4.50	9.0	6.0	50	1.5	16.0	5.0	0.001	0.006	0.014
SMD1210-500	5.00	10.0	6.0	50	1.5	16.0	5.0	0.001	0.006	0.012
SMD1210-550	5.50	11.0	6.0	50	1.5	20.0	5.0	0.0008	0.005	0.010
SMD1210-600	6.00	12.0	6.0	50	1.5	20.0	5.0	0.0008	0.005	0.009
SMD1210-650	6.50	13.0	6.0	50	1.5	20.0	5.0	0.0005	0.004	0.008

I_H=Hold current: maximum current at which the device will not trip at 25℃ still air reflow soldering of 260℃ for 20 sec.

I_T=Trip current: minimum current at which the device will always trip at 25℃ still air reflow soldering of 260℃ for 20 sec.

V_{max}=Maximum continuous voltage device can withstand without damage at rated current

I_{max}=Maximum fault current device can withstand without damage at rated voltage.

T_{trip}=Maximum time to trip(s) at assigned current reflow soldering of 260℃ for 20 sec.

Pd_{typ}=Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

R_{min}= Minimum resistance of device in initial (un-soldered) state.

R_{max}= Maximum resistance of device in initial (un-soldered) state.

R_{1max}=Maximum resistance of device at 25℃ measured one hour after reflow soldering of 260℃ for 20 sec.

Value specified is determined by using the PWB with 0.030" *1.5oz copper traces.

Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

Environmental Specifications

Test	Test Conditions	Accept /Reject Criteria
Recommended storage conditions	40℃ max, 70% R.H. max	No change
Passive aging:	85℃, 1000 hours	≤ R _{1max}
Moisture Resistance	85% RH, 85℃, 1000hrs	≤ R _{1max}
Thermal Shock	MIL-STD-202 Method 107G +85℃ /-40℃ 20 times	≤ R _{1max}
Vibration	MIL-STD-883C, Method 2007.1, Condition A	No change
Solvent Resistance	MIL-STD-202, Method 215	No change
Moisture Level Sensitivity	Level 1, J-STD-020C	No change

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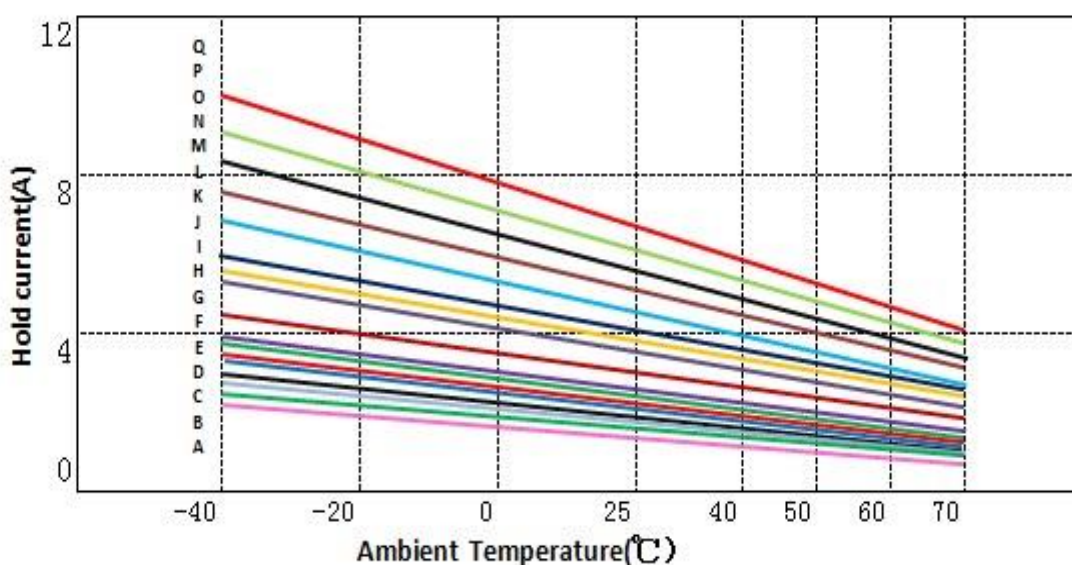
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Thermal Derating [Hold Current (A) at Ambient Temperature (°C)]

Part Number	Maximum Ambient Operating Temperature (°C)							
	-40	-20	0	25	40	50	60	70
SMD1210-150	2.3	2.0	1.7	1.5	1.3	1.2	1.1	0.9
SMD1210-175	2.6	2.3	2.0	1.75	1.5	1.3	1.2	1.1
SMD1210-190	2.9	2.5	2.2	1.9	1.6	1.5	1.3	1.2
SMD1210-200	3.0	2.7	2.3	2.0	1.7	1.5	1.4	1.2
SMD1210-210	3.2	2.8	2.4	2.1	1.8	1.6	1.5	1.3
SMD1210-230	3.5	3.1	2.7	2.3	2.0	1.8	1.6	1.4
SMD1210-250	3.8	3.3	2.9	2.5	2.2	1.9	1.8	1.5
SMD1210-260	3.9	3.5	3.0	2.6	2.2	2.0	1.9	1.6
SMD1210-300	4.5	4.0	3.5	3.0	2.6	2.3	2.1	1.8
SMD1210-350	5.3	4.7	4.1	3.5	3.0	2.7	2.5	2.1
SMD1210-380	5.7	5.1	4.4	3.8	3.3	2.9	2.7	2.3
SMD1210-400	6.0	5.3	4.6	4.0	3.4	3.1	2.8	2.4
SMD1210-450	6.8	6.0	5.2	4.5	3.9	3.5	3.2	2.7
SMD1210-500	7.5	6.7	5.8	5.0	4.3	3.9	3.5	3.1
SMD1210-550	8.3	7.3	6.4	5.5	4.7	4.2	3.9	3.4
SMD1210-600	9.0	8.0	7.0	6.0	5.2	4.6	4.2	3.7
SMD1210-650	9.8	8.6	7.5	6.5	5.6	5.0	4.6	4.0

A=SMD1210-150
 B=SMD1210-175
 C=SMD1210-190
 D=SMD1210-200
 E=SMD1210-210
 F=SMD1210-230
 G=SMD1210-250
 H=SMD1210-260
 I=SMD1210-300
 J=SMD1210-350
 K=SMD1210-380
 L=SMD1210-400
 M=SMD1210-450
 N=SMD1210-500
 O=SMD1210-550
 P=SMD1210-600
 Q=SMD1210-650

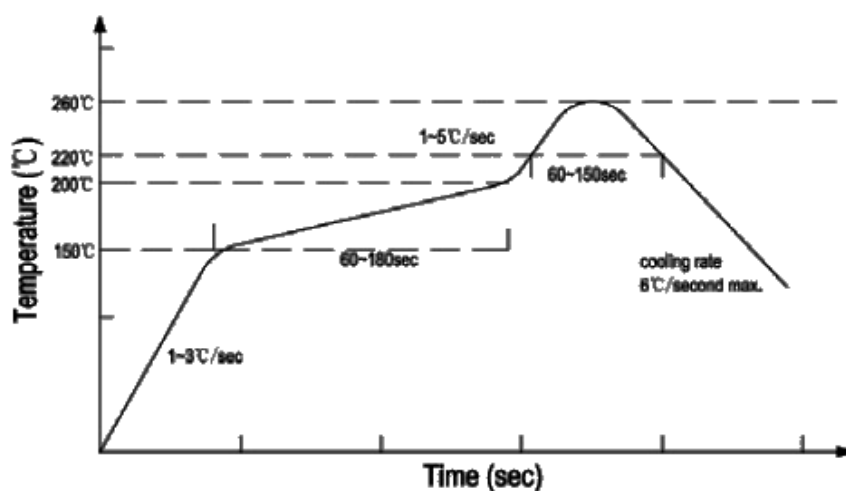


Solder Reflow Recommendation

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Reflow -curve

Recommended reflow methods:IR,hot air oven ,nitrogen oven
Devices can be cleaned using standard industry methods and solvents.

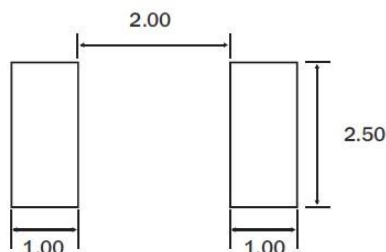
NOTE:

If reflow temperatures exceed the recommended profile,devices may not meet the performance requirements.

Caution: Operation beyond the rated voltage or current may result in rupture electrical arcing or flame

Packaging Quantity and Marking

Recommended Pad Layout (mm.)



Device	Marking	Standard Quantity (pcs)
SMD1210-150	B 150	3000
SMD1210-175	B 175	3000
SMD1210-190	B 190	3000
SMD1210-200	B 200	3000
SMD1210-210	B 210	3000
SMD1210-230	B 230	3000
SMD1210-250	B 250	3000
SMD1210-260	B 260	3000
SMD1210-300	B 300	3000
SMD1210-350	B 350	3000
SMD1210-380	B 380	3000

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SMD1210-400	B 400	3000
SMD1210-450	B 450	3000
SMD1210-500	B 500	3000
SMD1210-550	B 550	3000
SMD1210-600	B 600	3000
SMD1210-650	B 650	3000

 CAUTION:

Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame. The devices are intended for protection against occasional over-current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated. Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.

Contact information
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Rev. letter		Date	
Design	Check	Audit	Approve