

SMD1210 Series Surface Mount PTC





Application:	All high-density boards
Product Features:	Small surface mount, Solid state Faster time to trip than standard SMD devices Lower resistance than standard SMD devices
Operation Current:	50mA~1.50A
Maximum Voltage:	6V~60VDC
Temperature Range:	-40°C to 85°C
Agency Recognition:	UL, C-UL, TÜV

Electrical Characteristics (23°C)

Part	Hold	Trip	Rated	Maximum	Typical	Max Time to		Resistance Tolerance	
Number	Current	Current	Voltage	Current	Power	Tri	р	RMIN	R1MAX
	IH, A	IT, A	VMAX, VDC	IMAX, A	Pd, W	Current	Time	ohms	ohms
SMD1210-005-60R	0.05	0.15	60	100	0.60	0.25	1.50	3.600	50.000
SMD1210-010-60R	0.10	0.25	60	100	0.60	0.50	1.50	1.600	15.000
SMD1210-020-30R	0.20	0.40	30	100	0.60	8.00	0.02	0.800	5.000
SMD1210-035-20R	0.35	0.70	20	100	0.60	8.00	0.20	0.320	1.300
SMD1210-050-16R	0.50	1.00	16	100	0.60	8.00	0.10	0.250	0.900
SMD1210-075-8R	0.75	1.50	8	100	0.60	8.00	0.10	0.130	0.400
SMD1210-075-24R	0.75	1.50	24	100	0.60	8.00	0.10	0.130	0.400
SMD1210-110-8R	1.10	2.20	8	100	0.80	8.00	0.30	0.060	0.210
SMD1210-150-6R	1.50	3.00	6	100	0.80	8.00	0.50	0.040	0.110
SMD1210-175-6R	1.75	4.00	6	100	0.80	8.00	0.60	0.020	0.080
SMD1210-200-6R	2.00	4.00	6	100	0.80	8.00	1.00	0.015	0.070

IH=Hold current-maximum current at which the device will not trip at 23°C still air.

IT=Trip current-minimum current at which the device will always trip at 23°C still air.

V MAX=Maximum voltage device can withstand without damage at its rated current.

I MAX= Maximum fault current device can withstand without damage at rated voltage (V max).

Pd=Typical power dissipated from device when in the tripped state in 23°C still air environment.

RMIN=Minimum device resistance at 23°C.

R1MAX=Maximum device resistance at 23°C, 1 hour after tripping .

Termination pad characteristics

Termination pad materials: Tin-plated copper



SMD1210 Product Dimensions (Millimeters)



Part	A		В		С		D		E	
Number	Min	Max								
SMD1210-005-60R	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
SMD1210-010-60R	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
SMD1210-020-30R	3.00	3.43	2.35	2.80	0.40	0.85	0.25	0.75	0.10	0.45
SMD1210-035-16R	3.00	3.43	2.35	2.80	0.40	0.80	0.25	0.75	0.10	0.45
SMD1210-050-16R	3.00	3.43	2.35	2.80	0.30	0.75	0.25	0.75	0.10	0.45
SMD1210-075-8R	3.00	3.43	2.35	2.80	0.30	0.70	0.25	0.75	0.10	0.45
SMD1210-075-24R	3.00	3.43	2.35	2.80	0.80	1.20	0.25	0.75	0.10	0.45
SMD1210-110-8R	3.00	3.43	2.35	2.80	0.60	1.00	0.25	0.75	0.10	0.45
SMD1210-150-6R	3.00	3.43	2.35	2.80	0.50	0.90	0.25	0.75	0.10	0.45
SMD1210-175-6R	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45
SMD1210-200-6R	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45

Thermal Derating Curve





Typical Time-To-Trip at 23°C

A = SMD1210-005-60R B = SMD1210-010-60R C = SMD1210-020-30R D = SMD1210-035-16R E = SMD1210-050-16R F = SMD1210-075-8R / 075-24R G = SMD1210-175-8R H = SMD1210-150-6R I = SMD1210-175-6R J = SMD1210-200-6R



Part Numbering System



Example

Standard Package

P/N	Reel/Tape
SMD1210-005-60R	3K
SMD1210-010-60R	3K
SMD1210-020-30R	ЗK
SMD1210-035-16R	4K
SMD1210-050-16R	4K
SMD1210-075-8R	4K
SMD1210-075-24R	ЗK
SMD1210-110-6R	3K
SMD1210-150-6R	3K
SMD1210-175-6R	3K
SMD1210-200-6R	3K

Part Marking System



 Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
 PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
 Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.



Pad Layouts, Solder Reflow and Rework Recommendations The dimension in the table below provide the recommended pad layout.



Pad dimensions (millimeters)				
Device	A	В	С	
	Nominal	Nominal	Nominal	
SMD1210 Series	2.00	1.00	2.80	

Profile Feature	Pb-Free Assembly	SOLDER REFLOW
Average Ramp-Up Rate (Tsmax to Tp)	3°C / second max.	Due to "Lead Free" nature, Temperature and Dwelling Time for the soldering zone is higher
Preheat: Temperature Min (Tsmin) Temperature Max (Tsmax) Time (tsmin to tsmax)	150°C 200°C 60-180 seconds	then those for Regular. This may cause damage to other components 1. Recommended maximum paste thickness > 0.25mm.
Time maintained above: Temperature (T _L) Time (t _L)	217°C 60-150 seconds	 Devices can be cleaned using standard methods and aqueous solvents. Rework use standard industry practices.
Peak / Classification Temperature (Tp):	260°C	4. Storage Environment: <30°C / 60%RH
Time within 5°C of actual peak: Temperature (tp)	20-40 seconds	1. If reflow temperatures exceed the recommended profile, devices may not meet
Ramp-Down Rate:	6°C / second max.	the performance requirements.
Time 25°C to Peak Temperature:	8 minutes max.	2. Devices are not designed to be wave soldered to the bottom side of the board

