Series Surface Mount PTC Devices

Description

The femtoSMDC series provides surface mount overcurrent protection for applications where space is at a premium and resettable protection is desired.



Features

- RoHS compliant, lead-free and halogen free
- Fast response to fault currents
- Compact design saves board space
- Low resistance，Low-profile
- Compatible with high temperature solders

Applications

- USB peripherals，Disk drives，CD-ROMs
- Plug and play protection for motherboards and peripherals
- PDAs / digital cameras
- Game console port protection
- Tablet and Notebook PCs
- E-readers

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Performance Specification

Model	V_{max} (V dc)	I_{max} (A)	I_{hold} @25°C (A)	I_{trip} @25°C (A)	P_d Typ. (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	$R_{i\ min}$ (Ω)	$R1_{max}$ (Ω)
SMD1812R200SF24V-1	24.0	35	2.00	4.00	0.8	8.0	2.00	0.020	0.100

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.

Pd = 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.

R1max = Maximum device resistance is measured one hour post reflow.

CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

Thermal Derading Chart

Recommended Hold Current(A) at Ambient Temperature(°C)

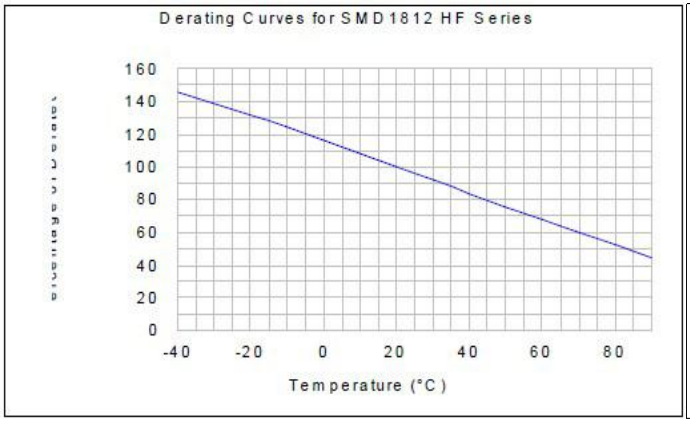
Model	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD1812R200SF-1	2.88	2.61	2.25	2.00	1.80	1.66	1.45	1.09	0.80

Termination Pad Characteristics

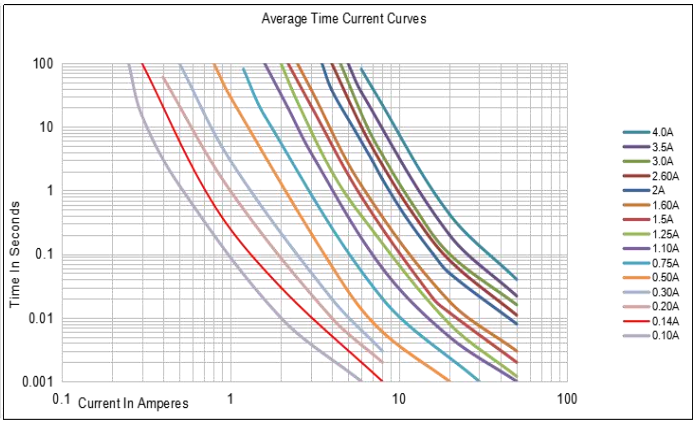
Terminal pad materials：Tin-plated Nickel-Copper

Terminal pad solder ability：Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

Thermal Derating Curve

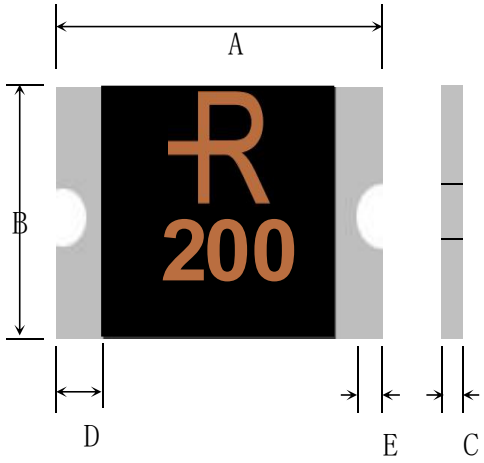


Average Time-Current Curve



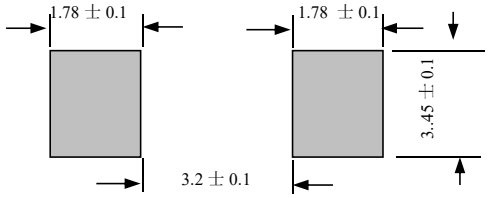
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Physical Dimensions(mm.)



Model	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SMD1812R200SF24V-1	4.37	4.73	3.07	3.41	0.80	1.50	0.30	0.25

Recommended Pad Layout (mm.)



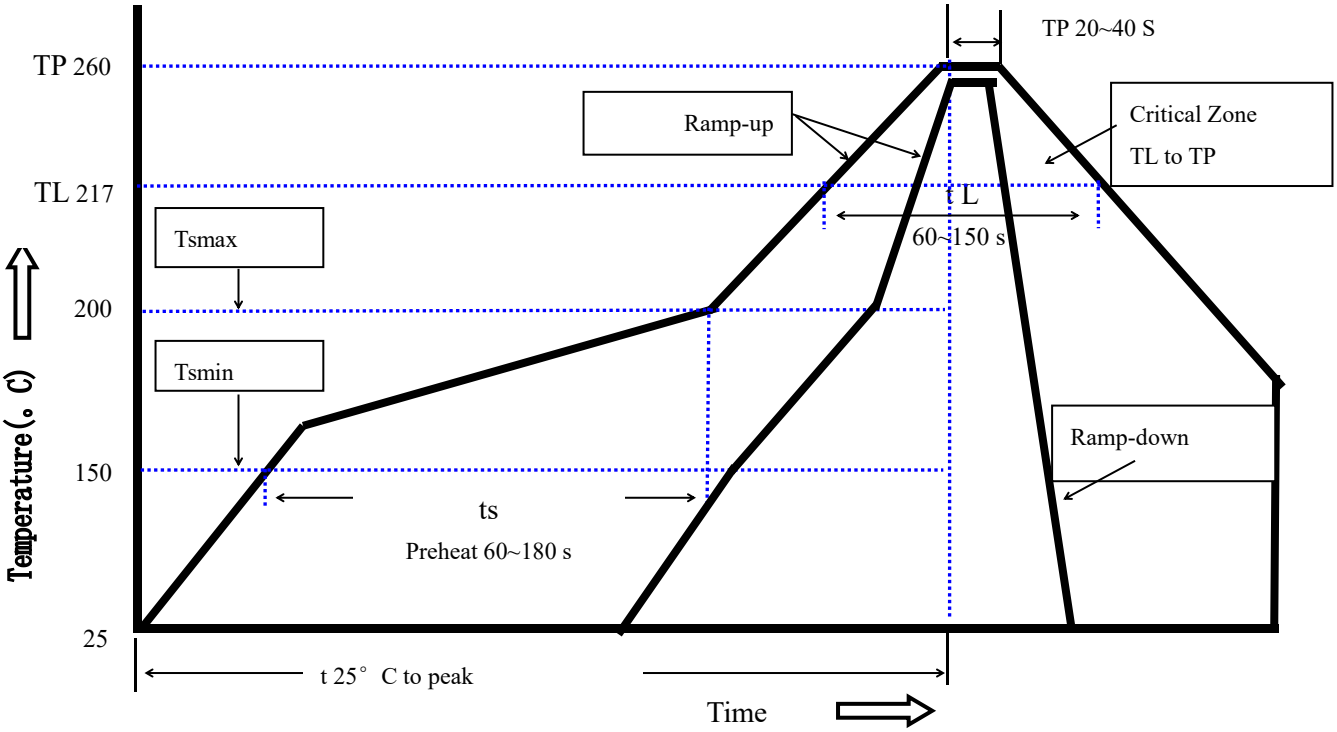
Packaging Quantity

Part Number	Quantity
SMD1812 Series	1,500 pcs/reel

Tape & reel packaging per EIA481-1

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Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate(Ts max to T p)	3℃/second mac.
Preheat -Temperature Min(Ts min) -Temperature Max(Ts max) -Time(Ts min to Ts max)	 150℃ 200℃ 60~180 seconds
Time maintained above: -Temperature(TL) -Time(tL)	 217℃ 60~150 seconds
Peak Temperature(Tp)	260℃
Ramp-Down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max
Storage Condition	0℃~35℃,30%~60%RH

Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

Recommended maximum paste thickness is 0.25mm

Devices can be cleaned using standard industry methods and solvents.

Note 1:All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.