

Surface Mountable PTC Resettable Fuse



Specifications:

Applications : All high-density boards
 Product Features : Small surface mountable, Solid state, Faster time to trip than standard SMD devices, Lower resistance than standard SMD devices
 Operation Current : 0.1A to 1.0A
 Maximum Voltage : 6V to 15V
 Temperature Range : -40°C to 85°C

Electrical Characteristics (23°C)

Hold Current	Trip Current	Rated Voltage	Maximum Current	Typical Power	Maximum Time to Trip		Resistance		Part Number
					Current	Time	R Minimum	R1 Maximum	
I_H , A	I_T , A	V Maximum, V dc	I Maximum, A	Pd, W	Amp	Sec	ohms	ohms	
0.20	0.50	9	100	5.0	8.00	0.02	0.400	3.500	MC36206
0.35	0.75					0.10	0.250	1.200	MC36210
0.50	1.00					0.150	0.850	MC36213	
0.75	1.50		0.20	0.090		0.350	MC36215		
1.00	1.95		0.30	0.060		0.210	MC36220		
		6	40	0.6					

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

I_T = 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 it rated current. (I maximum)

I_{MAX} = Maximum fault current device can withstand without damage at rated voltage (V maximum).

Pd = Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

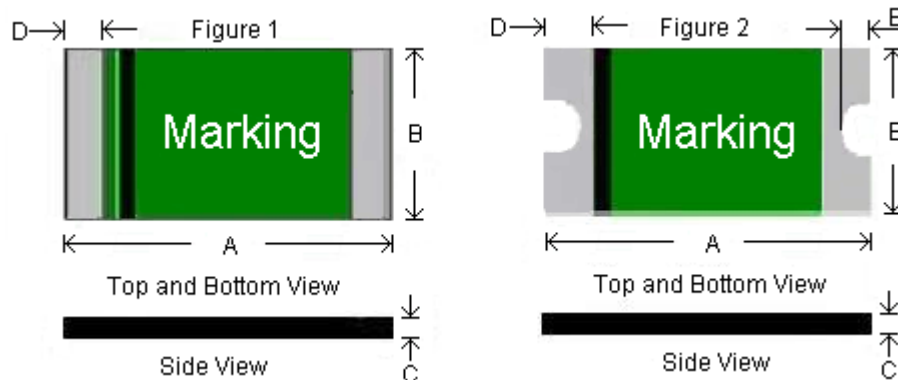
R_{MIN} = Minimum device resistance at 23°C prior to tripping.

$R1_{MAX}$ = Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials: Pure Tin

Production Dimensions (Millimeter)



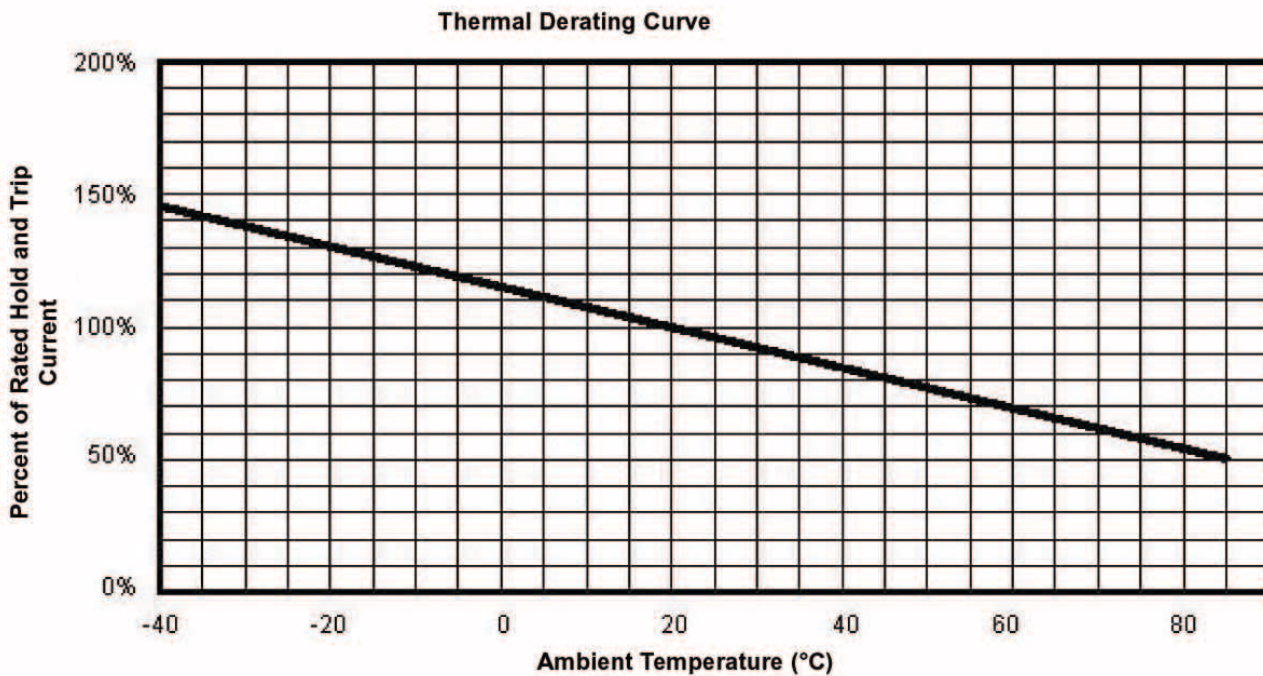
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Specification Table

Figure	A		B		C		D		E		Part Number
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
1		2.30			0.55	1.00			-	-	MC36206
					0.45	0.75					MC36210
2	2.00	2.20	1.20	1.50	0.55	1.25	0.20	0.60	0.10	0.45	MC36213
					0.75	1.80					MC36215
											MC36220

Thermal Derating Curve

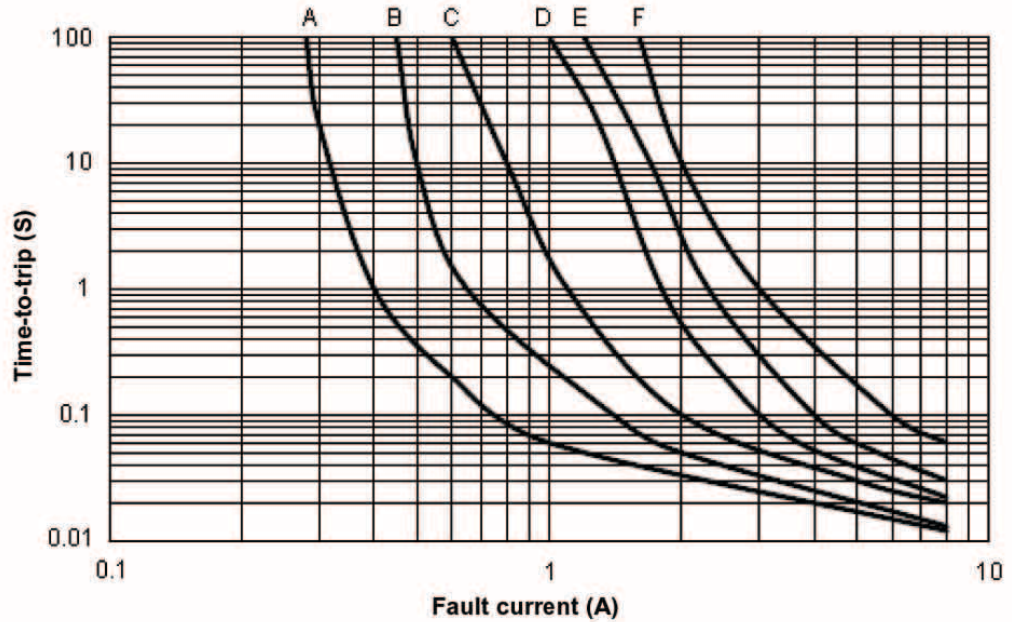


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Typical Time-To-Trip at 23°C

- B = MC36206
- C = MC36210
- D = MC36213
- E = MC36215
- F = MC36220

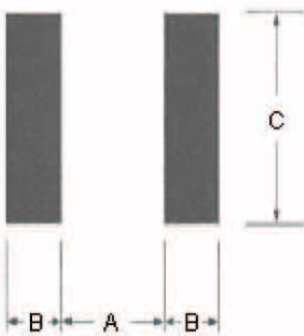


Material Specification

- Terminal pad material : Pure Tin
- Soldering characteristics : Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

Pad Layouts, Solder Reflow and Rework Recommendations

The dimension in the table below provide the recommended pad layout for each FSMD1812 device



Device	A Nominal	B Nominal	C Nominal
All 0805 Series	1.20	1.00	1.50



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Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Ts maximum to Tp)	3°C/second maximum
Preheat:	
Temperature Minimum (Ts minimum)	150°C
Temperature Maximum (Ts maximum)	200°C
Time (ts minimum to ts maximum)	60 to 180 seconds
Time maintained above:	
Temperature (TL)	217°C
Time (tL)	60-150 seconds
Peak/Classification Temperature (Tp)	260°C
Time within 5°C of actual Peak Temperature (tp)	20 to 40 seconds
Ramp-Down Rate	6°C/second maximum
Time 25°C to Peak Temperature	8 minutes maximum

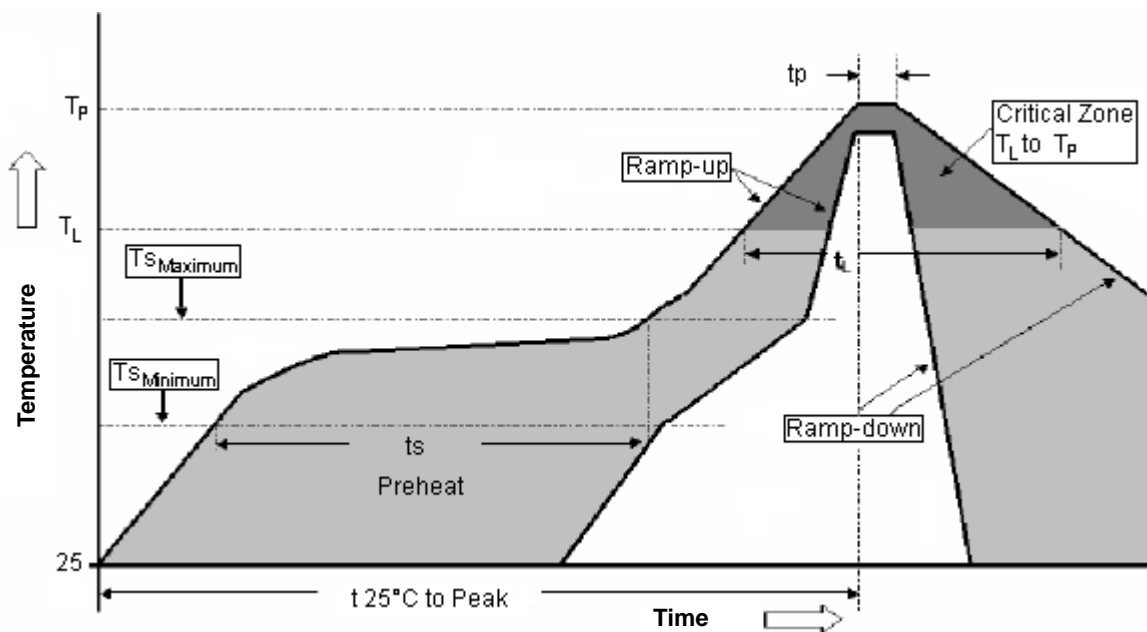
Solder reflow

Due to "Lead Free" nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

1. Recommended max past thickness > 0.25mm.
2. Devices can be cleaned using standard methods and aqueous solvent.
3. Rework use standard industry practices.
4. Storage Environment : < 30°C/60% RH

Caution:

1. If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
2. Devices are not designed to be wave soldered to the bottom side of the board.



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Part Number Table

Description	Part Number
Surface Mountable PTC Resettable Fuse	MC36206
Surface Mountable PTC Resettable Fuse	MC36210
Surface Mountable PTC Resettable Fuse	MC36213
Surface Mountable PTC Resettable Fuse	MC36215
Surface Mountable PTC Resettable Fuse	MC36220

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