Surface Mountable PTC Resettable Fuse

Specifications:

RoHS Compliant

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.
Maximum voltage : 6V to 60V.
Temperature range : -40°C to 85°C.

UL : E-345437

Electrical Characteristics (23°C)

Hold Current	Trip Current	Rated Voltage	Maximum Current	Typical Power	Maximum Time to Trip		Resistance		Part Number
					Current	Time	R_{Min}	$R1_{Max}$	
I_H, A	I_T, A	V_{Max}, V dc	I_{Max}, A	P_d, W	Amperes	Seconds	Ω	Ω	
0.20	0.40	30	10	0.4	8.00	0.10	0.600	2.500	MC36207
0.35	0.75	16	40	0.4	8.00	0.10	0.300	1.200	MC36211
0.75	1.50	6	100	0.6	8.00	0.20	0.090	0.290	MC36216
1.00	1.80	6	100	0.6	8.00	0.30	0.055	0.210	MC36221
1.10	2.20	6	100	0.8	8.00	0.30	0.040	0.180	MC36222
1.50	3.00	6	100	0.8	8.00	1.00	0.030	0.120	MC36229

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

FSMD Product Dimensions (Millimetres)

Figure 1

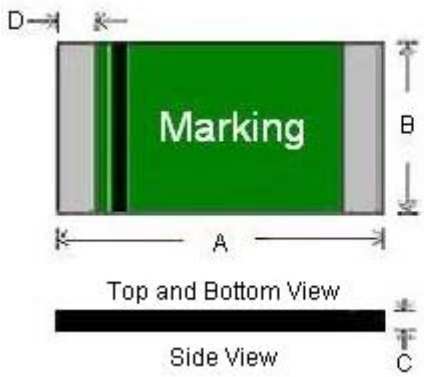
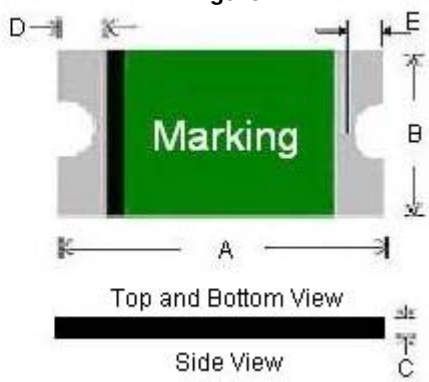


Figure 2



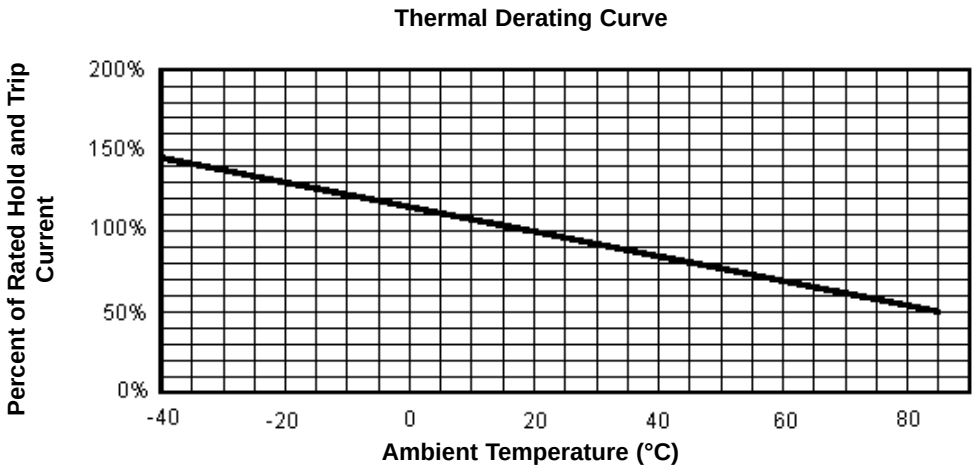
Surface Mountable PTC Resettable Fuse

Dimensions Table

A		B		C		D		E		Figure	Part Number
Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum		
3.00	3.50	1.50	1.80	0.45	0.75	0.10	0.75	—	—	1	MC36207
3.00	3.50	1.50	1.80	0.45	0.75	0.10	0.75	—	—	1	MC36211
3.00	3.50	1.50	1.80	0.45	1.25	0.25	0.75	0.10	0.45	2	MC36216
3.00	3.50	1.50	1.80	0.45	1.00	0.25	0.75	0.10	0.45	2	MC36221
3.00	3.50	1.50	1.80	0.45	1.00	0.25	0.75	0.10	0.45	2	MC36222
3.00	3.50	1.50	1.80	0.80	1.40	0.25	0.75	0.10	0.45	2	MC36229

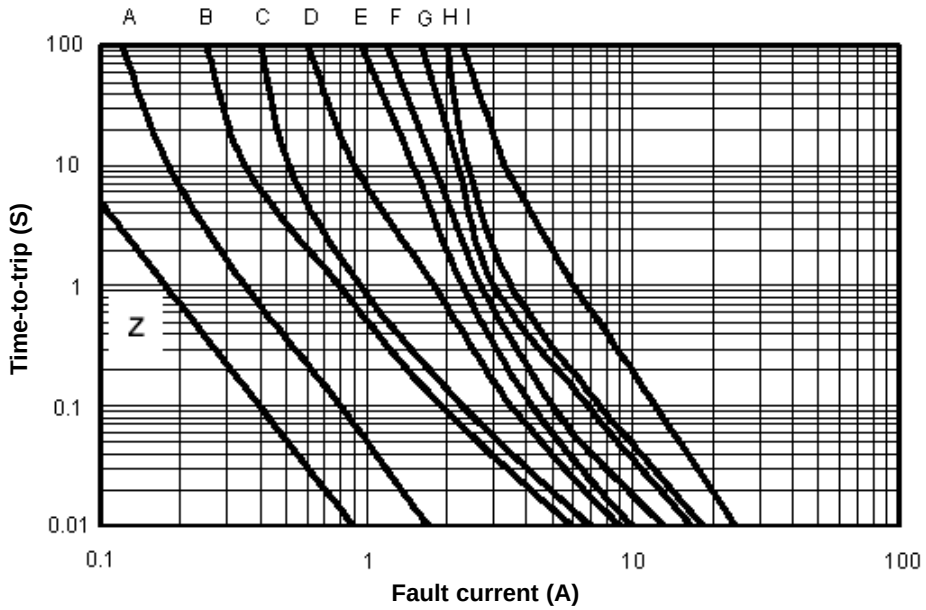
Dimensions : Millimetres

Thermal Derating Curve



Typical Time-To-Trip at 23°C

B = MC36207
C = MC36211
E = MC36216
F = MC36221
G = MC36222
H = MC36229



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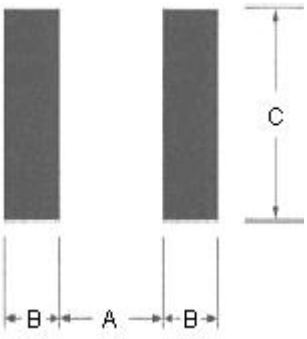
Material Specification

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 1206 device.



Pad Dimensions

Device	A Nominal	B Nominal	C Nominal
All 1206 Series	2.00	1.00	1.90

Dimensions : Millimetres

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

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

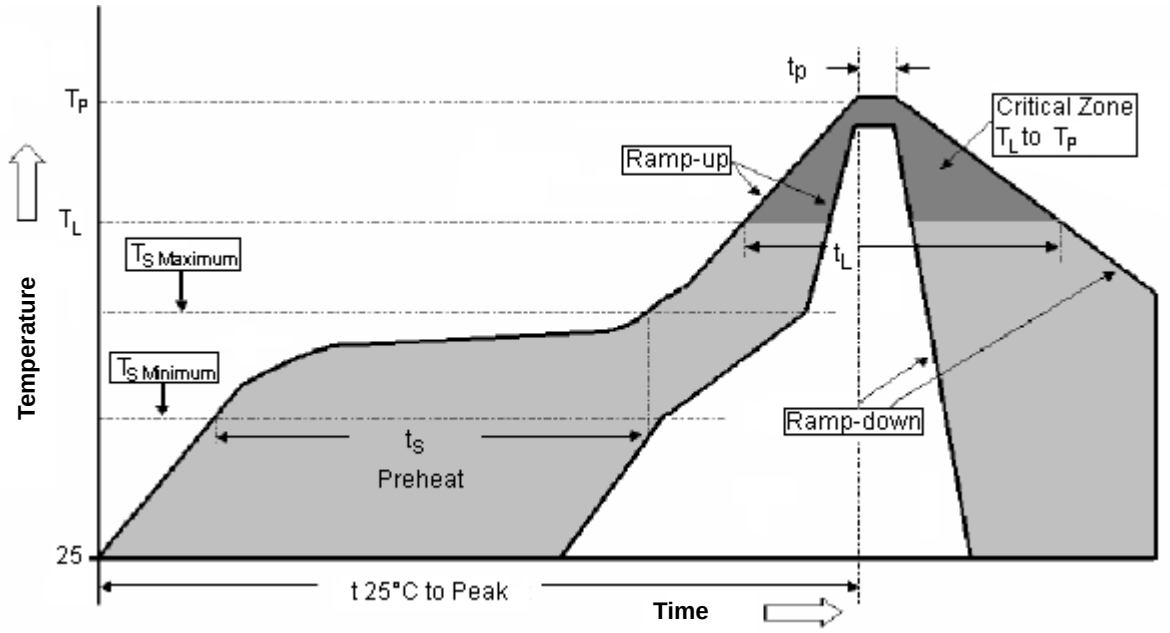
Solder reflow

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.

Reflow Profile



Part Number Table

Description	Part Number
Surface Mountable PTC Resettable Fuse	MC36207
Surface Mountable PTC Resettable Fuse	MC36211
Surface Mountable PTC Resettable Fuse	MC36216
Surface Mountable PTC Resettable Fuse	MC36221
Surface Mountable PTC Resettable Fuse	MC36222
Surface Mountable PTC Resettable Fuse	MC36229