

# Surface Mountable PTC Resettable Fuse



RoHS  
Compliant

## 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.  
 Max. Voltage : 6V to 15V.  
 Temperature Range : -40°C to 85°C.

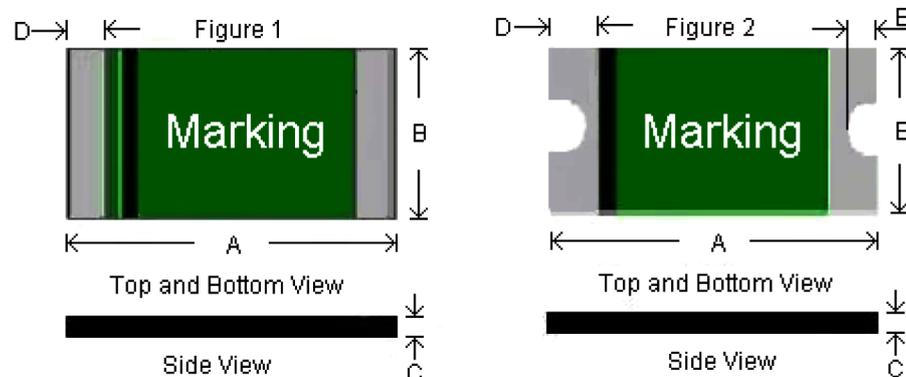
## Electrical Characteristics (23°C):

Part Number	Hold Current	Trip Current	Rated Voltage	Max. Current	Typical Power	Max Time to Trip		Resistance	
						Current	Time	R <sub>MIN</sub>	R <sub>1MAX</sub>
	I <sub>H</sub> , A	I <sub>T</sub> , A	V <sub>MAX</sub> , V DC	I <sub>MAX</sub> , A	P <sub>d</sub> , W	Amp	Sec.	Ω	Ω
MC36206	0.2	0.5	9	100	0.5	8	0.02	0.4	3.5
MC36210	0.35	0.75	6	100	0.5	8	0.1	0.25	1.2
MC36213	0.5	1	6	100	0.5	8	0.1	0.15	0.85
MC36215	0.75	1.5	6	100	0.6	8	0.2	0.09	0.35
MC36220	1	1.95	6	100	0.6	8	0.3	0.06	0.21

I<sub>H</sub> = Hold current-maximum current at which the device will not trip at 23°C still air.  
 I<sub>T</sub> = Trip current-minimum current at which the device will always trip at 23°C still air.  
 V<sub>MAX</sub> = Maximum voltage device can withstand without damage at it rated current. (I<sub>MAX</sub>)  
 I<sub>MAX</sub> = Maximum fault current device can withstand without damage at rated voltage (V<sub>MAX</sub>).  
 P<sub>d</sub> = Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.  
 R<sub>MIN</sub> = Minimum device resistance at 23°C prior to tripping.  
 R<sub>1MAX</sub> = 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



www.element14.com  
 www.farnell.com  
 www.newark.com



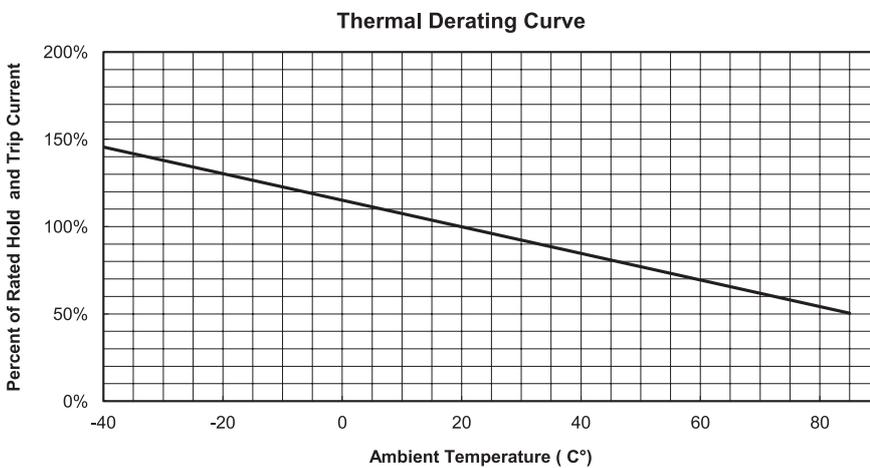
# Surface Mountable PTC Resettable Fuse



Part Number	Figure	A		B		C		D		E	
		Min.	Max.								
MC36206	1	2	2.3	1.2	1.5	0.3	1	0.2	0.6	-	-
MC36210	1	2	2.3	1.2	1.5	0.25	0.75	0.2	0.6	-	-
MC36213	2	2	2.3	1.2	1.5	0.4	0.9	0.2	0.6	0.1	0.45
MC36215	2	2	2.3	1.2	1.5	0.55	1.25	0.2	0.6	0.1	0.45
MC36220	2	2	2.3	1.2	1.5	0.75	1.8	0.2	0.6	0.1	0.45

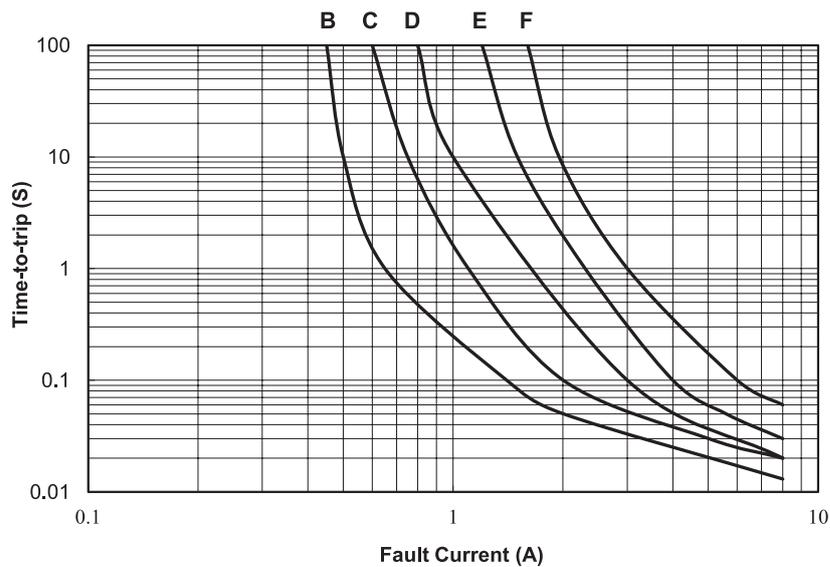
Dimensions : Millimetres

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

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



# Surface Mountable PTC Resettable Fuse



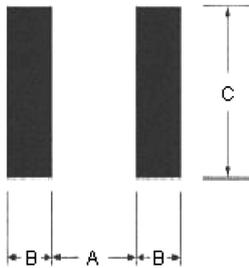
## Material Specification

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 0805 device.



### Pad Dimensions

Device	A Nominal	B Nominal	C Nominal
All 0805 Series	1.2	1	1.5

Dimensions : Millimetres

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)	60-180 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)	20-40 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.

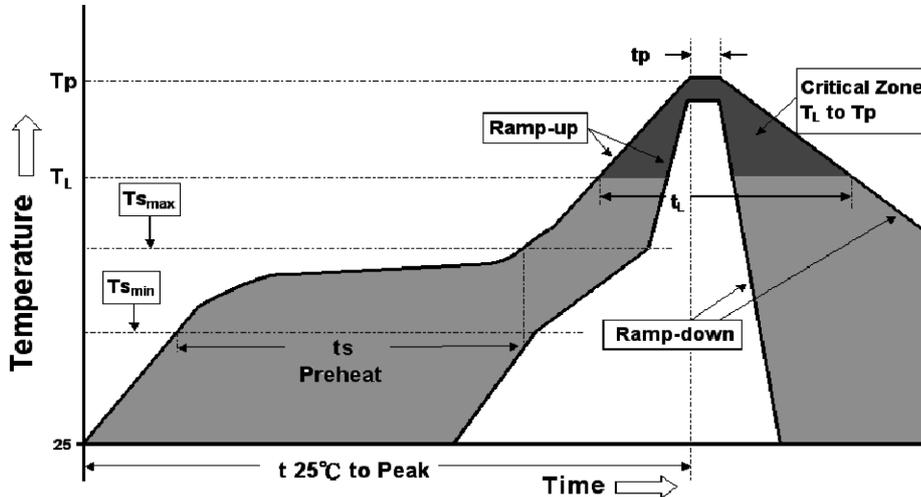
## Caution:

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.

# Surface Mountable PTC Resettable Fuse



## Reflow Profile



## Part Number Table

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

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