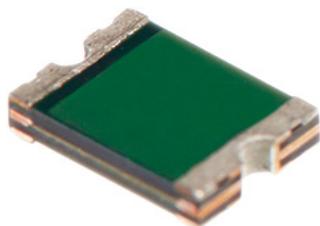


# Surface Mountable PTC Resettable Fuse 1812



RoHS  
Compliant



## Applications

All high density boards.

## Features

- Small Surface Mountable
- Solid State
- Faster Time to Trip
- Lower Resistance
- -40°C to 85°C Temperature Range
- Halogen Free

## Electrical Characteristics

Part Number	Hold Current	Trip Current	Rated Voltage	Max. Current	Typical Power	Max. Time to Trip		Resistance	
	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)	Current (A)	Time (Sec)	R <sub>MIN.</sub> (Ω)	R <sub>1MAX.</sub> (Ω)
MC011010	0.14	0.3	60	100	0.8	8	0.008	1.2	6.5
MC011011	0.2	0.4	30	100	0.8	8	0.02	0.8	5
MC011012	0.5	1	16	100	0.8	8	0.15	0.15	1
MC011015	0.75	1.5	16	100	0.8	8	0.2	0.11	0.45
MC011018	1.1	2.2	8	100	0.8	8	0.3	0.04	0.21
MC011021	0.1	0.3	60	100	0.8	8	0.02	1.6	15
MC011022	0.35	0.7	16	100	0.8	8	0.1	0.32	1.5
MC011023	1.1	2.2	16	100	0.8	8	0.5	0.06	0.18
MC011024	1.25	2.5	6	100	0.8	8	0.4	0.05	0.14
MC011025	1.5	3	8	100	0.8	8	0.5	0.04	0.11
MC011026	1.6	3.2	8	100	0.8	8	0.5	0.03	0.1
MC011040	0.5	1	16	100	0.8	8	0.15	0.15	1

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.

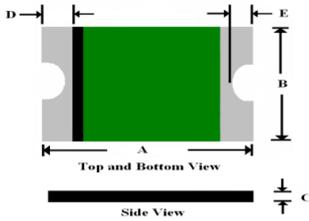
R<sub>1MAX</sub> = Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad materials: Pure Tin

# Surface Mountable PTC Resettable Fuse 1812



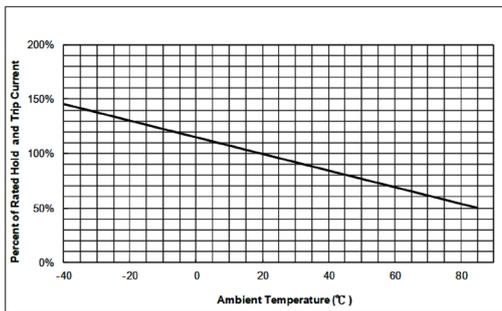
## Dimensions



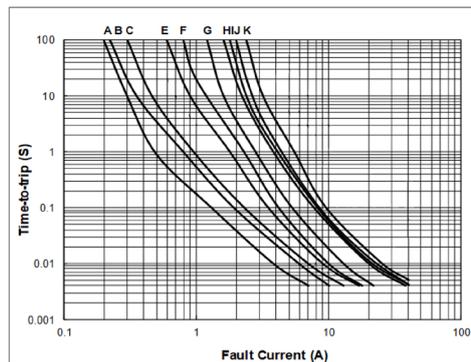
Part Number	A		B		C		D		E	
	Min.	Max.								
MC011010	4.37	4.73	3.07	3.41	0.6	0.9	0.3	0.95	0.25	0.65
MC011011	4.37	4.73	3.07	3.41	0.6	0.9	0.3	0.95	0.25	0.65
MC011012	4.37	4.73	3.07	3.41	0.35	0.65	0.3	0.95	0.25	0.65
MC011015	4.37	4.73	3.07	3.41	0.35	0.65	0.3	0.95	0.25	0.65
MC011018	4.37	4.73	3.07	3.41	0.25	0.55	0.3	0.95	0.25	0.65
MC011021	4.37	4.73	3.07	3.41	0.6	0.9	0.3	0.95	0.25	0.65
MC011022	4.37	4.73	3.07	3.41	0.4	0.7	0.3	0.95	0.25	0.65
MC011023	4.37	4.73	3.07	3.41	0.25	0.9	0.3	0.95	0.25	0.65
MC011024	4.37	4.73	3.07	3.41	0.25	0.55	0.3	0.95	0.25	0.65
MC011025	4.37	4.73	3.07	3.41	0.25	0.55	0.3	0.95	0.25	0.65
MC011026	4.37	4.73	3.07	3.41	0.25	0.9	0.3	0.95	0.25	0.65
MC011040	4.37	4.73	3.07	3.41	0.35	0.65	0.3	0.95	0.25	0.65

Dimensions : Millimetres

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C



- A = MC011021
- B = MC011010
- C = MC011011
- E = MC011022
- F = MC011012
- G = MC011015
- H = MC011018 / MC011023
- I = MC011024
- J = MC011025
- K = MC011026



# Surface Mountable PTC Resettable Fuse 1812

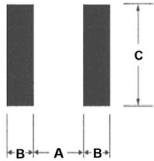


## Material Specifications

- Terminal Pad Material: Pure Tin
- Soldering Characteristics: Meets EIA specifications 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.



Pad Dimensions

A Nominal	B Nominal	C Nominal
3.45mm	1.78mm	3.5mm

Profile Feature	Pb-Free Assembly
<b>Average Ramp-Up Rate (T<sub>max</sub> to T<sub>p</sub>)</b>	3°C / second max.
<b>Preheat:</b> Temperature Min (T <sub>min</sub> ) Temperature Max (T <sub>max</sub> ) Time (t <sub>min</sub> to t <sub>max</sub> )	150°C 200°C 60 - 180 seconds
<b>Time Maintained Above:</b> Temperature T(L) Time t(L)	217°C 60 - 150 seconds
Peak/Classification Temperature (T <sub>p</sub> ):	260°C
<b>Time within 5°C of Actual Peak:</b> Temperature (t <sub>p</sub> )	20 - 40 seconds
<b>Ramp-Down Rate:</b>	6°C / second max.
<b>Time 25°C to Peak Temperature:</b>	8 minutes max.

**Note:** 1. All temperature refers to 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

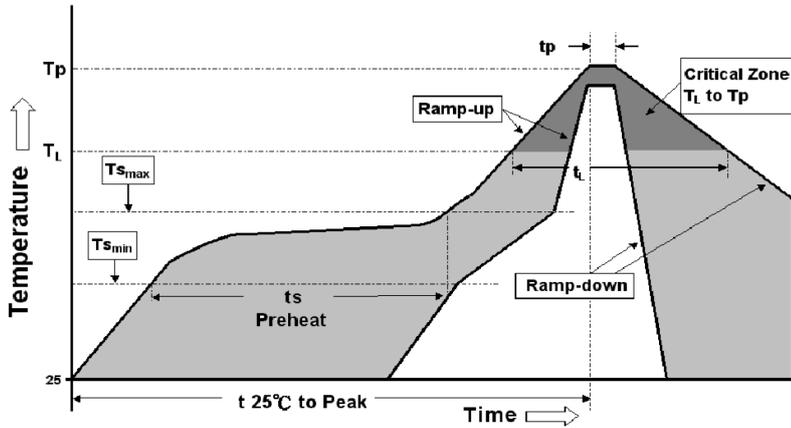
## Caution

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 1812



## Reflow Profile



## Part Number Table

Description	Part Number
SMD PTC Resettable Fuse, 0.14A, 60V, 1812	MC011010
SMD PTC Resettable Fuse, 0.2A, 30V, 1812	MC011011
SMD PTC Resettable Fuse, 0.5A, 16V, 1812	MC011012
SMD PTC Resettable Fuse, 0.75A, 16V, 1812	MC011015
SMD PTC Resettable Fuse, 1.1A, 8V, 1812	MC011018
SMD PTC Resettable Fuse, 0.1A, 60V, 1812	MC011021
SMD PTC Resettable Fuse, 0.35A, 16V, 1812	MC011022
SMD PTC Resettable Fuse, 1.1A, 16V, 1812	MC011023
SMD PTC Resettable Fuse, 1.25A, 6V, 1812	MC011024
SMD PTC Resettable Fuse, 1.5A, 8V, 1812	MC011025
SMD PTC Resettable Fuse, 1.6A, 8V, 1812	MC011026
SMD PTC Resettable Fuse, 0.5A, 16V, 1812	MC011040

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