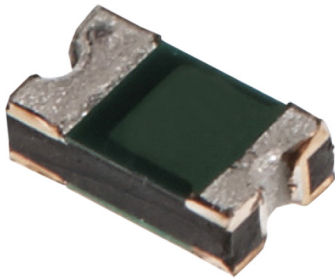


Surface Mountable PTC Resettable Fuse 0603

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**RoHS
Compliant**



Features

- Small Surface Mountable
- Solid State
- Faster Time to Trip
- Lower Resistance
- Operation Current: 0.01A to 0.2A
- Maximum Voltage: 9V to 60V DC
- -40°C to +85°C Temperature Range
- Halogen Free
- UL Approved

Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Rated Voltage	Max. Current	Typical Power	Max. Time to Trip		Resistance	
	I _H (A)	I _T (A)	V _{MAX} (V DC)	I _{MAX.} (A)	P _d (W)	Current (A)	Time (Sec)	R _{MIN.} (Ω)	R _{1MAX.} (Ω)
MC011420	0.01	0.03	60	40	0.5	0.2	1	15	100
MC011421	0.02	0.06	60	40	0.5	0.2	1	12	70
MC011422	0.03	0.09	30	40	0.5	0.2	1	6	50
MC011423	0.04	0.12	24	40	0.5	0.2	1	4	40
MC011424	0.05	0.15	15	40	0.5	0.5	0.1	3.8	30
MC011425	0.1	0.25	15	40	0.5	0.7	0.1	0.9	8
MC011426	0.12	0.3	9	40	0.5	0.8	0.1	1.1	5.8
MC011427	0.16	0.4	9	40	0.5	1	0.1	1	4.2
MC011428	0.2	0.45	9	40	0.5	2	0.1	0.55	3.5

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_{MAX.})

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

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.

R_{1MAX} = 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

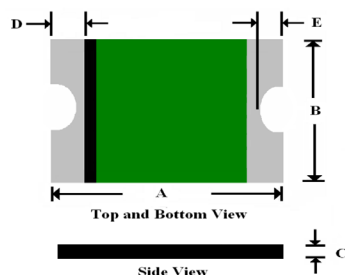
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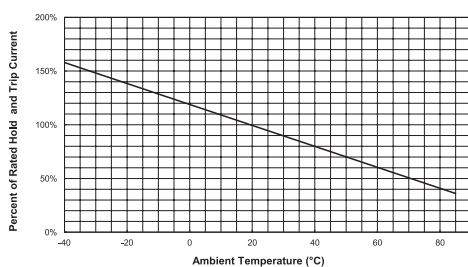
Dimensions



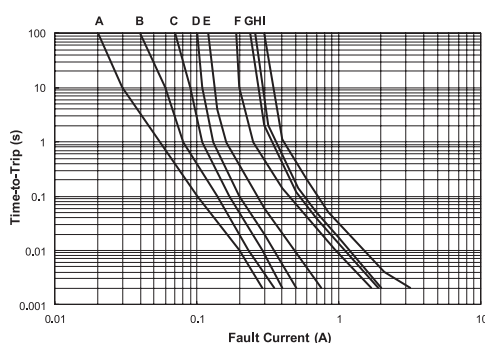
Part Number	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
MC011420	1.4	1.8	0.45	1	0.35	0.85	0.1	0.5	0.08	0.4
MC011421	1.4	1.8	0.45	1	0.35	0.85	0.1	0.5	0.08	0.4
MC011422	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4
MC011423	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4
MC011424	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4
MC011425	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4
MC011426	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4
MC011427	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4
MC011428	1.4	1.8	0.45	1	0.35	0.75	0.1	0.5	0.08	0.4

Dimensions : Millimetres

Thermal Derating Curve



Typical Time-To-Trip at 23°C



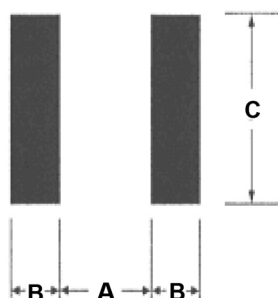
A = MC011420
B = MC011421
C = MC011422
D = MC011423
E = MC011424
F = MC011425
G = MC011426
H = MC011427
I = MC011428

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	B	C
Nominal	Nominal	Nominal
0.8mm	0.6mm	0.8mm

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Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T _{smax} to T _p)	3°C / second max.
Preheat: Temperature Min (T _{smin}) Temperature Max (T _{smax}) Time (t _{smin} to t _{smax})	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 max.
Time 25°C to Peak Temperature:	8 minutes max.

Note: 1. All temperature refers to the package; measured on the package body surface.

Solder Reflow

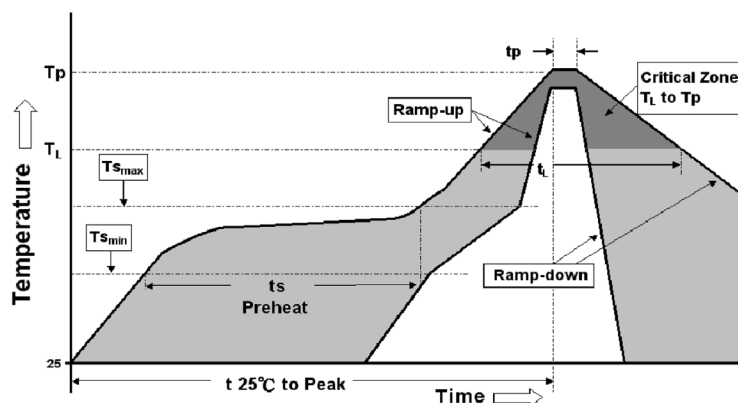
Due to "Lead Free" nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

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.

Reflow Profile



Surface Mountable PTC Resettable Fuse 0603

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Product Marking

Part Number	Marking
MC011420	X
MC011421	Y
MC011422	Z
MC011423	A
MC011424	B
MC011425	D
MC011426	E
MC011427	F
MC011428	G

Part Number Table

Description	Part Number
PTC Resettable Fuse, 0.01A, 60V DC, 0603	MC011420
PTC Resettable Fuse, 0.02A, 60V DC, 0603	MC011421
PTC Resettable Fuse, 0.03A, 30V DC, 0603	MC011422
PTC Resettable Fuse, 0.04A, 24V DC, 0603	MC011423
PTC Resettable Fuse, 0.05A, 15V DC, 0603	MC011424
PTC Resettable Fuse, 0.1A, 15V DC, 0603	MC011425
PTC Resettable Fuse, 0.12A, 9V DC, 0603	MC011426
PTC Resettable Fuse, 0.16A, 9V DC, 0603	MC011427
PTC Resettable Fuse, 0.2A, 9V DC, 0603	MC011428

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