

# Surface Mountable PTC Resettable Fuse

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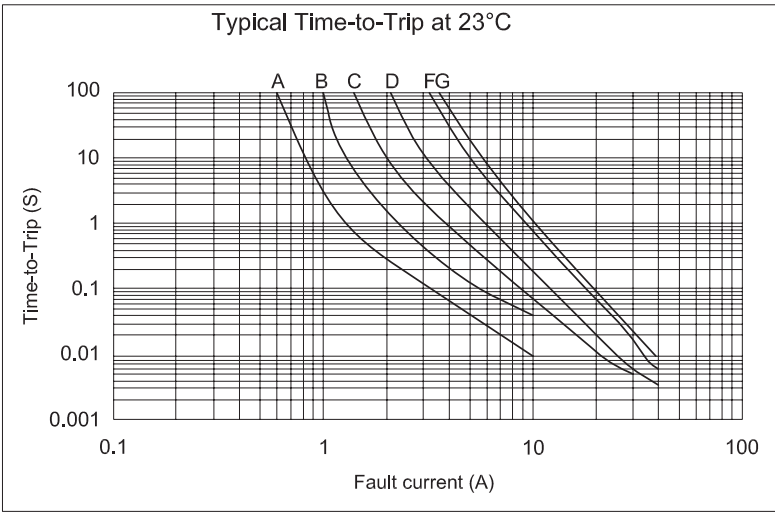
RoHS  
Compliant



### Specifications

|                          |   |
|--------------------------|---|
| Lead Material            | : Pure Tin  |
| Soldering Characteristic | : Meets EIA specs. RS 186-9E, ANSI/J-std-002 Category 3 |
| Operating Current        | : 300mA to 3A   |
| Maximum Voltage          | : 6V to 60V   |
| Temperature range        | : -40°C to 85°C   |
| Approval                 | : UL Approved   |

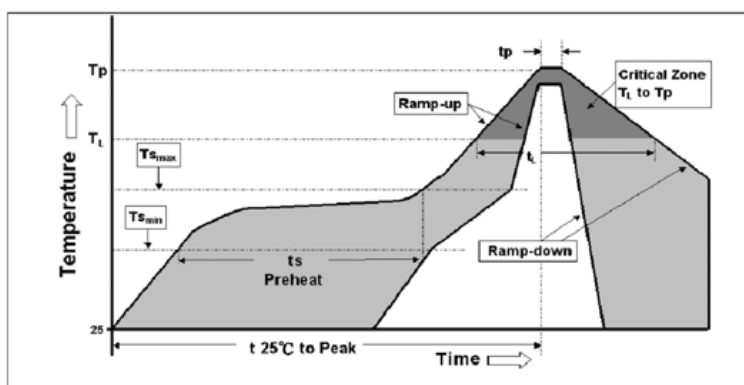
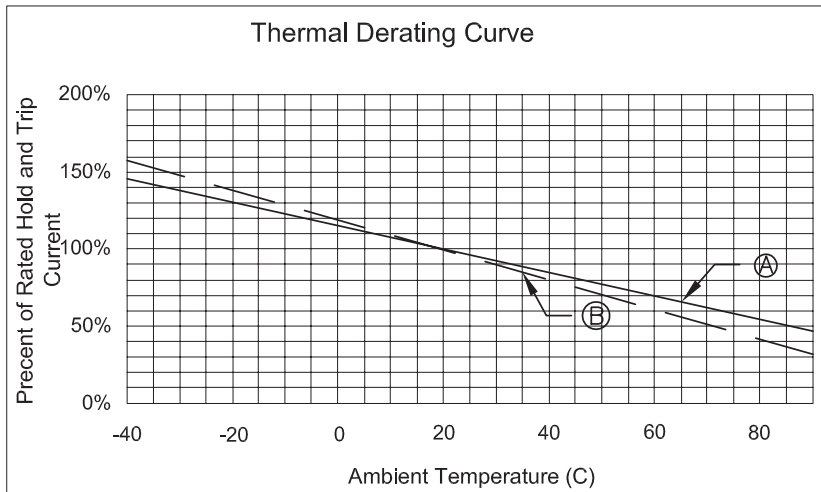
| Profile Feature  | Pb-Free Assembly                 |
|--|----------------------------------|
| Average ramp-Up rate (T <sub>max</sub> to T <sub>p</sub> )   | 3°C/second Max.                  |
| Preheat:<br>Temperature Min (T <sub>min</sub> )<br>Temperature Max (T <sub>max</sub> )<br>Time (t <sub>min</sub> to t <sub>max</sub> ) | 150°C<br>200°C<br>60-180 Seconds |
| Time maintained above<br>Temperature (t <sub>l</sub> )<br>Time   | 217°C<br>60-150 seconds          |
| Peak/Classification Temperature (T <sub>p</sub> )  | 260°C                            |
| Time within 5C of actual Peak<br>Temperature (t <sub>p</sub> )   | 20-40 seconds                    |
| Ramp-Down Rate :   | 6°C/second Max.                  |
| Time 25°C to Peal Temperature :  | 8 minutes Max.                   |



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## 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

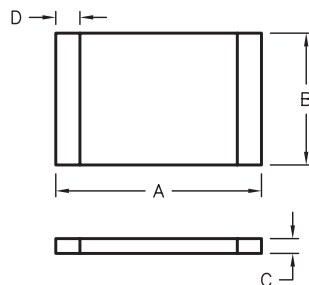
1. If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
2. Devices are not designed to be wave soldered to the bottom side of the board.

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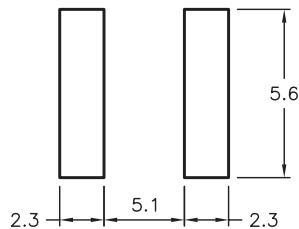
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## Dimensions



## Pad Layout



## Dimensions

| Part Number | A    |      | B    |      | C    |      | D    |
|-------------|------|------|------|------|------|------|------|
|             | Min. | Max. | Min. | Max. | Min. | Max. | Min. |
| MC33189     | 6.73 | 7.98 | 4.8  | 5.44 | 0.6  | 1.15 | 0.35 |
| MC33192     | 6.73 | 7.98 | 4.8  | 5.44 | 0.6  | 1.15 | 0.35 |
| MC33194     | 6.73 | 7.98 | 4.8  | 5.44 | 0.35 | 1.15 | 0.35 |
| MC33195     | 6.73 | 7.98 | 4.8  | 5.44 | 0.4  | 1    | 0.35 |
| MC33197     | 6.73 | 7.98 | 4.8  | 5.44 | 0.4  | 0.9  | 0.35 |
| MC33198     | 6.73 | 7.98 | 4.8  | 5.44 | 0.3  | 0.9  | 0.35 |

Dimensions : Millimetres

## Part Number Table

| Description                  | Hold Current | Trip Current | Rated Voltage | Maximum Current | Typical power | Max. Time-to-Trip |      | Resistance Tolerance |       | Time-to-trip Curve Option | Thermal Derating Curve option | Part Number |
|------------------------------|--------------|--------------|---------------|-----------------|---------------|-------------------|------|----------------------|-------|---------------------------|-------------------------------|-------------|
|                              | IH, A        | IT, A        | VMax, V DC    | IMax, A         | Pd, W         | Current           | Time | RMIN                 | R1MAX |                           |                               |             |
|                              |              |              |               |                 |               | A                 | Sec  | Ω                    | Ω     |                           |                               |             |
| Fuse, Resettable, SMD, 0.3A  | 0.3          | 0.6          | 60            | 10              | 1.5           | 1.5               | 3    | 1                    | 4.8   | Option A                  | Option A                      | MC33189     |
| Fuse, Resettable, SMD, 0.5A  | 0.5          | 1            | 60            | 10              | 1.5           | 2.5               | 4    | 0.3                  | 1.4   | Option B                  | Option A                      | MC33192     |
| Fuse, Resettable, SMD, 0.75A | 0.75         | 1.5          | 33            | 40              | 1.5           | 8                 | 0.3  | 0.18                 | 1     | Option C                  | Option A                      | MC33194     |
| Fuse, Resettable, SMD, 1.1A  | 1.1          | 2.2          | 33            | 40              | 1.5           | 8                 | 0.5  | 0.09                 | 0.41  | Option D                  | Option A                      | MC33195     |
| Fuse, Resettable, SMD, 1.5A  | 1.5          | 3            | 33            | 40              | 1.5           | 8                 | 2    | 0.05                 | 0.23  | Option F                  | Option B                      | MC33197     |
| Fuse, Resettable, SMD, 1.85A | 1.85         | 3.7          | 33            | 40              | 1.5           | 8                 | 2.5  | 0.04                 | 0.15  | Option G                  | Option B                      | MC33198     |

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