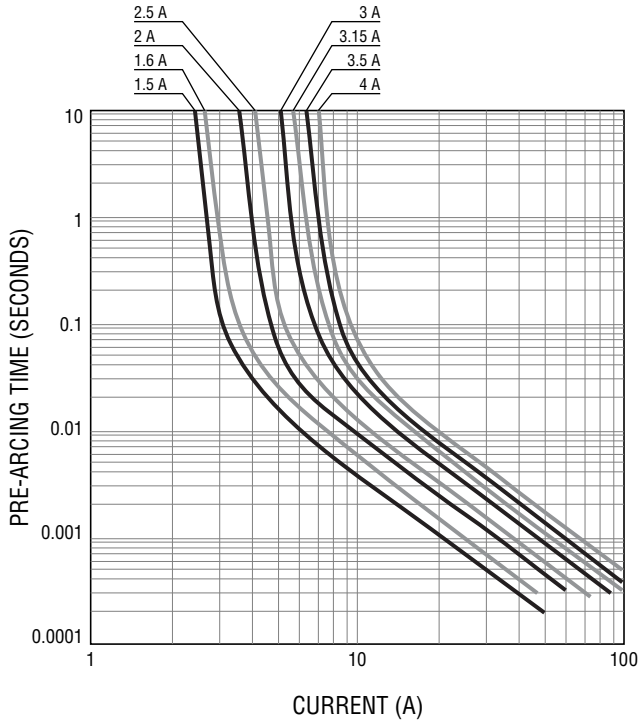
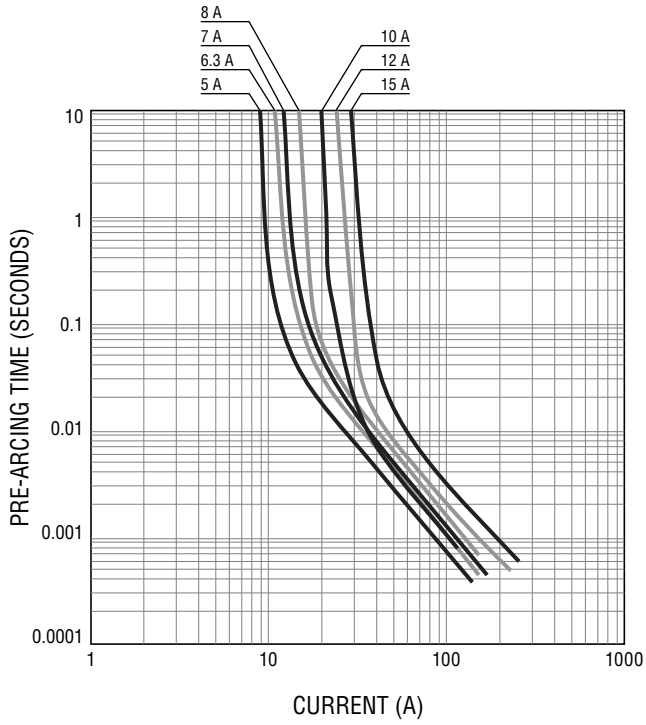
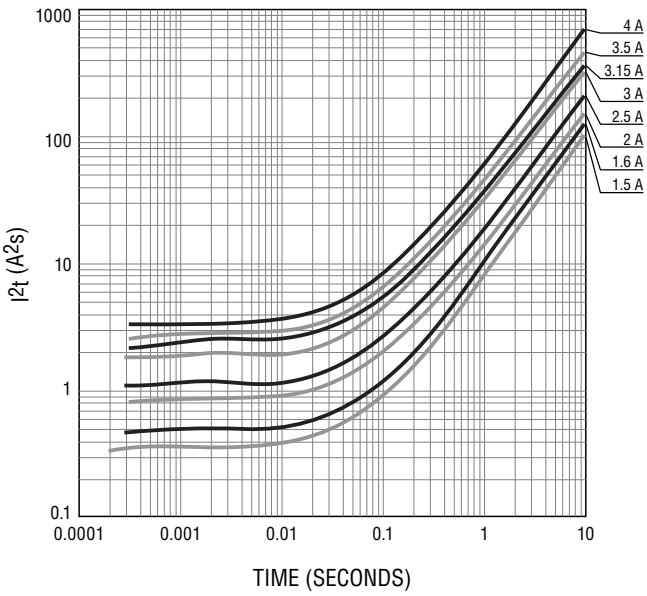
## Average Pre-Arcing Time vs. Current Curves (1.5 - 4 A)



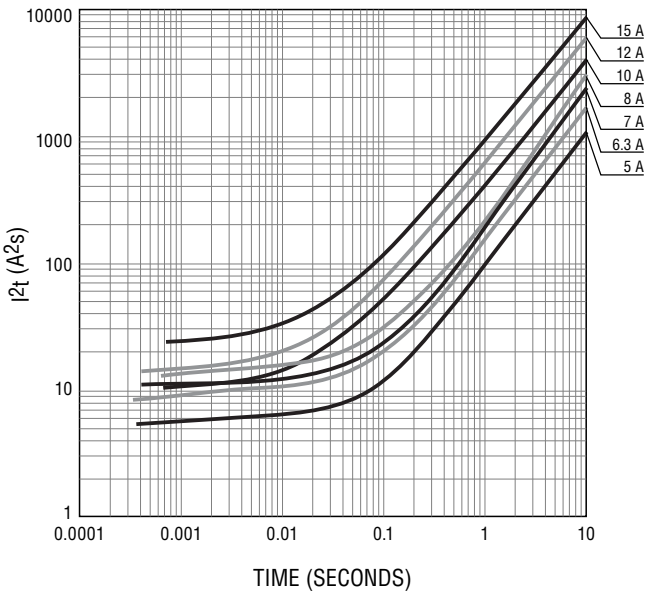

## Average Pre-Arcing Time vs. Current Curves (5 - 15 A)




## Average $I^2t$ vs. t Curves (1.5 - 4 A)




## Average $I^2t$ vs. t Curves (5 - 15 A)

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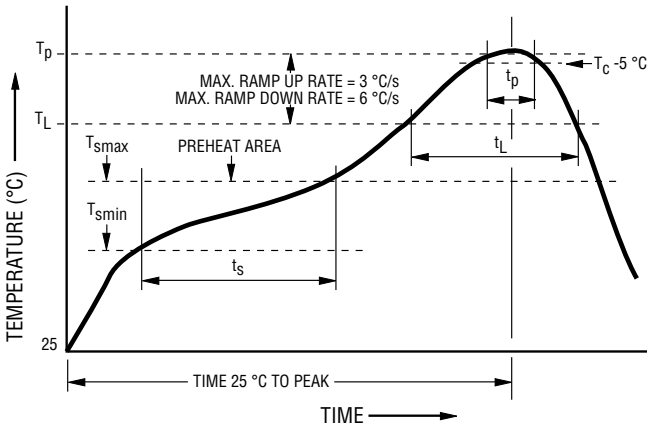
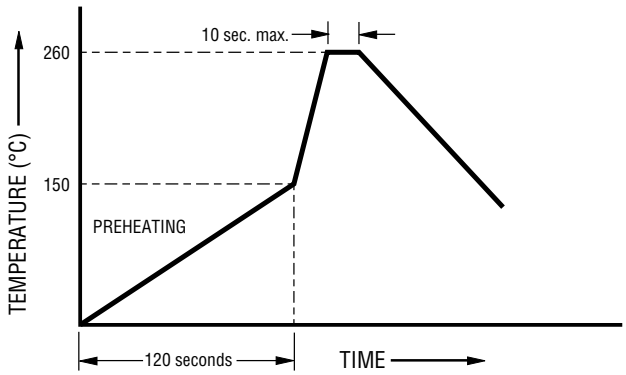
## Solder Reflow Recommendations




| Profile Feature | Pb-Free Assembly |
|---|---|
| Preheat / Soak:<br>Temperature Min. ($T_{smin}$)<br>Temperature Max. ($T_{smax}$)<br>Time ($t_s$) from ($T_{smin}$ to $T_{smax}$) | <br>150 °C<br>200 °C<br>60~120 seconds |
| Ramp Up Rate ($T_L$ to $T_p$) | 3 °C / second max. |
| Liquidous Temperature ($T_L$)<br>Time ($t_L$) maintained above $T_L$ | 217 °C<br>60~150 seconds |
| Peak Package Body Temperature ($T_p$) | 260 °C |
| Time ($t_p$)* within 5 °C of the specified classification temperature ($T_c$) | 30 seconds* |
| Ramp Down Rate ($T_p$ to $T_L$) | 6 °C / second max. |
| Time 25 °C to Peak Temperature | 8 minutes max. |

* Tolerance for peak profile temperature (Tp ) is defined as a supplier minimum and a user maximum.

## Solder Wave Recommendations




## Reliability Tests

| Test Items | Reference Standard |
|---|---|
| Visual Inspection | MIL-STD-883<br>Method 2009 |
| High Temperature Storage | MIL-STD-202<br>Method 108 |
| Low Temperature Storage | IEC 60068-2-1 |
| Temperature Cycling | JESD22<br>Method JA-104 |
| Biased Humidity | MIL-STD-202<br>Method 103 |
| High Temperature Operating Life | MIL-STD-202<br>Method 108 |
| Physical Dimension | JESD22<br>Method JB-100 |
| Mechanical Vibration | MIL-STD-202<br>Method 204 |
| Mechanical Shock | MIL-STD-202<br>Method 213 |
| Resistance to Soldering Heat | MIL-STD-202<br>Method 210 |
| Salt Spray | MIL-STD-202<br>Method 101 |
| Solderability | MIL-STD-202<br>Method 208 |
| Terminal Strength | AEC-Q200-006 |
| Board Flex | AEC-Q200-005 |
| Electrical Characterization | Bourns Specification |

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