

CC06H

High I²t Chip™ 0603 size fuses



Product feature:

- 0603 (1608 metric) compact design utilizes less board space
- Halogen free, lead free and RoHS compliant
- High inrush withstand capability
- Fast-acting performance
- Ampacity alpha mark on fuse for easy identification
- Standard termination design for easy solderability
- Compatible with standard lead-free solder reflow and wave soldering processes
- Excellent environmental integrity

Applications

For secondary circuit protection in space constrained applications:

- LCD Backlight inverters
- Digital cameras
- DVD Players
- Bluetooth headsets
- Battery packs

Agency information

- cURus Recognized Guide and Card JDXY2/JDYX8, File E19180

Packaging

- TR - Packaging code suffix for tape-and-reel (8 mm wide tape on 178mm diameter reel - specification EIA 481-1)
- Quantity = 5000 fuses

Electrical characteristics

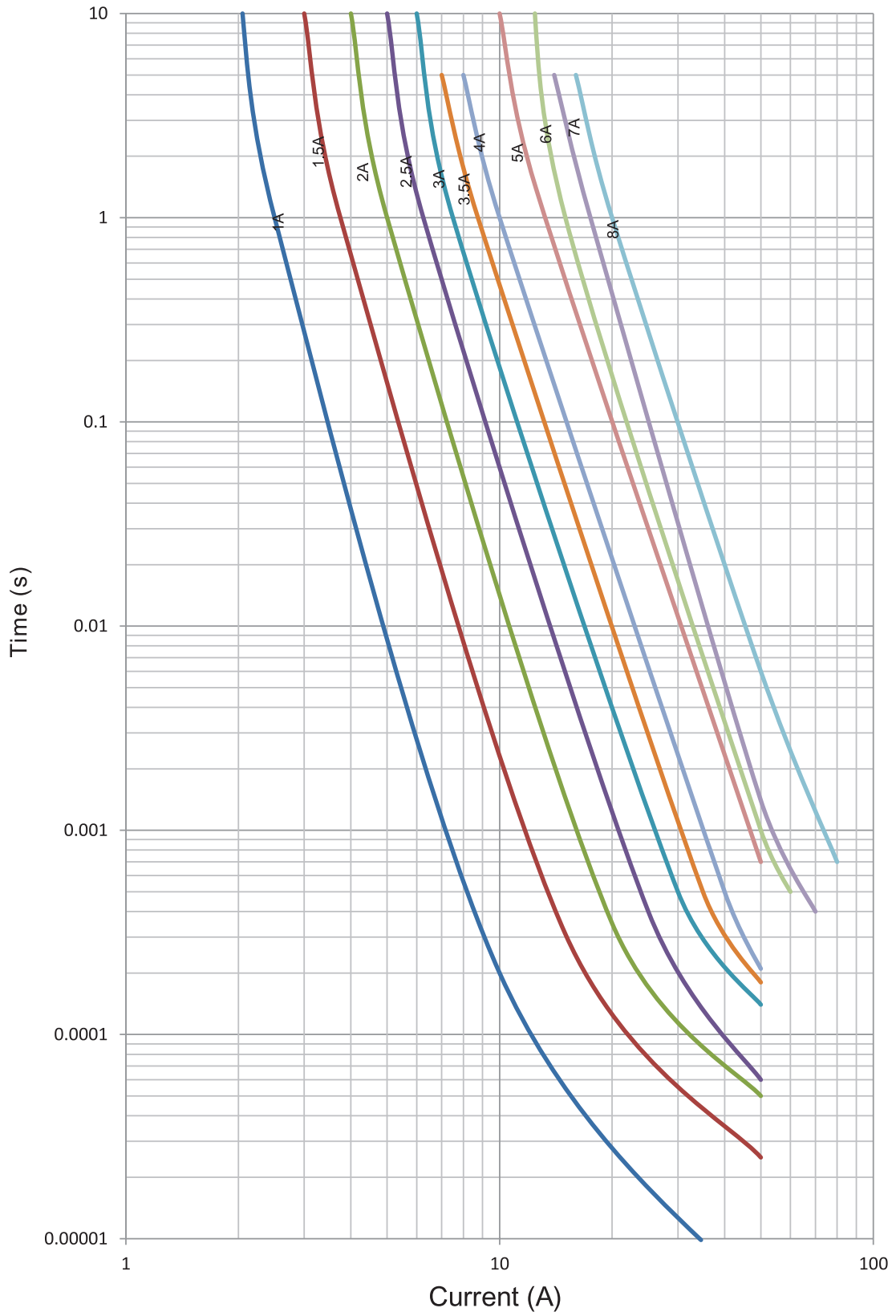
| Amp Rating | % of Amp Rating | Opening Time |
|------------|-----------------|---------------|
| 1-8 A | 100 | 4 Hours |
| 1-7 A | 200 | 1-60 Seconds |
| 1-8 A | 250 | 5 Seconds Max |

Specifications

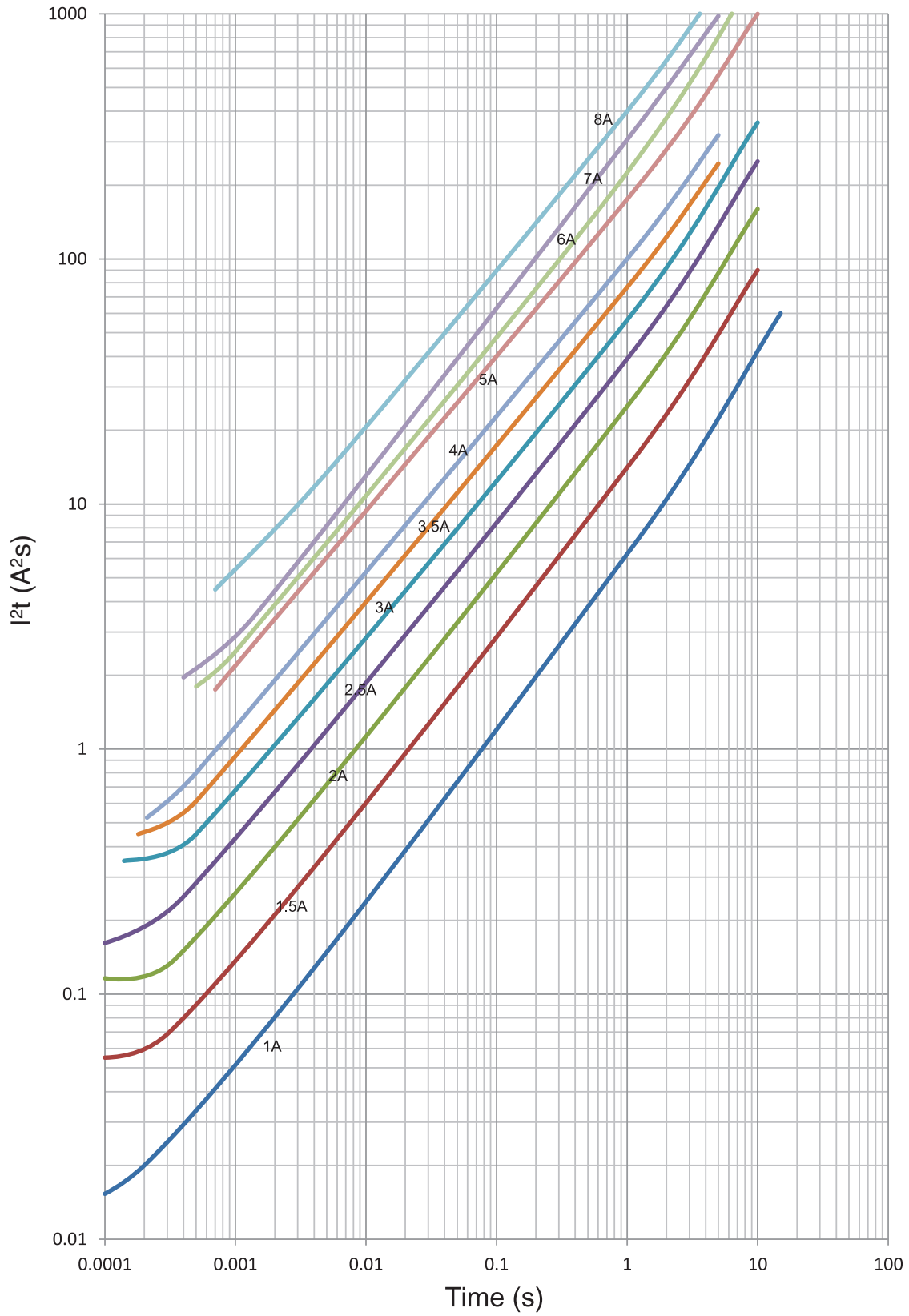
| Part Number | Amp Rating ⁵ | Voltage Rating (Vdc) | Interrupting Rating ^{1,4} (A) | Typical Cold Resistance ² (Ω) | Typical Pre-Arcing ³ (I ² t) | Typical Voltage Drop (mV) | Typical Power Dissipation (W) | Alpha Marking | Agency Information (cURus) |
|-------------|-------------------------|----------------------|--|--|--|---------------------------|-------------------------------|---------------|----------------------------|
| CC06H1A | 1 | 32 | 50 | 0.25 | 0.02 | 310 | 0.32 | B | x |
| CC06H1.5A | 1.5 | 32 | 50 | 0.13 | 0.07 | 250 | 0.38 | H | x |
| CC06H2A | 2 | 32 | 50 | 0.068 | 0.14 | 170 | 0.38 | K | x |
| CC06H2.5A | 2.5 | 32 | 50 | 0.05 | 0.25 | 155 | 0.38 | L | x |
| CC06H3A | 3 | 32 | 50 | 0.035 | 0.30 | 130 | 0.38 | O | x |
| CC06H3.5A | 3.5 | 32 | 50 | 0.023 | 0.50 | 100 | 0.35 | R | x |
| CC06H4A | 4 | 32 | 50 | 0.02 | 0.8 | 110 | 0.45 | S | x |
| CC06H5A | 5 | 32 | 50 | 0.013 | 1.6 | 95 | 0.48 | T | x |
| CC06H6A | 6 | 32 | 50 | 0.0076 | 2.6 | 80 | 0.48 | V | x |
| CC06H7A | 7 | 32 | 50 | 0.0056 | 3.3 | 80 | 0.56 | X | x |
| CC06H8A | 8 | 32/24 | 50/80 | 0.0040 | 4.5 | 75 | 0.60 | Z | x |

- DC Interrupting Rating (measured at rated voltage, time constant of less than 50 microseconds, battery source).
- DC Cold Resistance are measured at <10% of rated current in ambient temperature of 20 °C -
FOR REFERENCE ONLY - CONTROLLED VALUES HELD BY PLANT AND SUBJECT TO CHANGE WITHOUT NOTICE.
- Typical Pre-arcing I²t are measured at rated DC voltage, 10I_n current (not to exceed interrupting rating).
- The insulation resistance after breaking capacity test is higher than 0.1 MΩ when measured by 2X rated voltage.
- Device designed to carry rated current for 4 hours minimum. An operating current 80% or less of rated current is recommended, with further design derating required at elevated ambient temperature. See Temperature Derating Curve on next page.

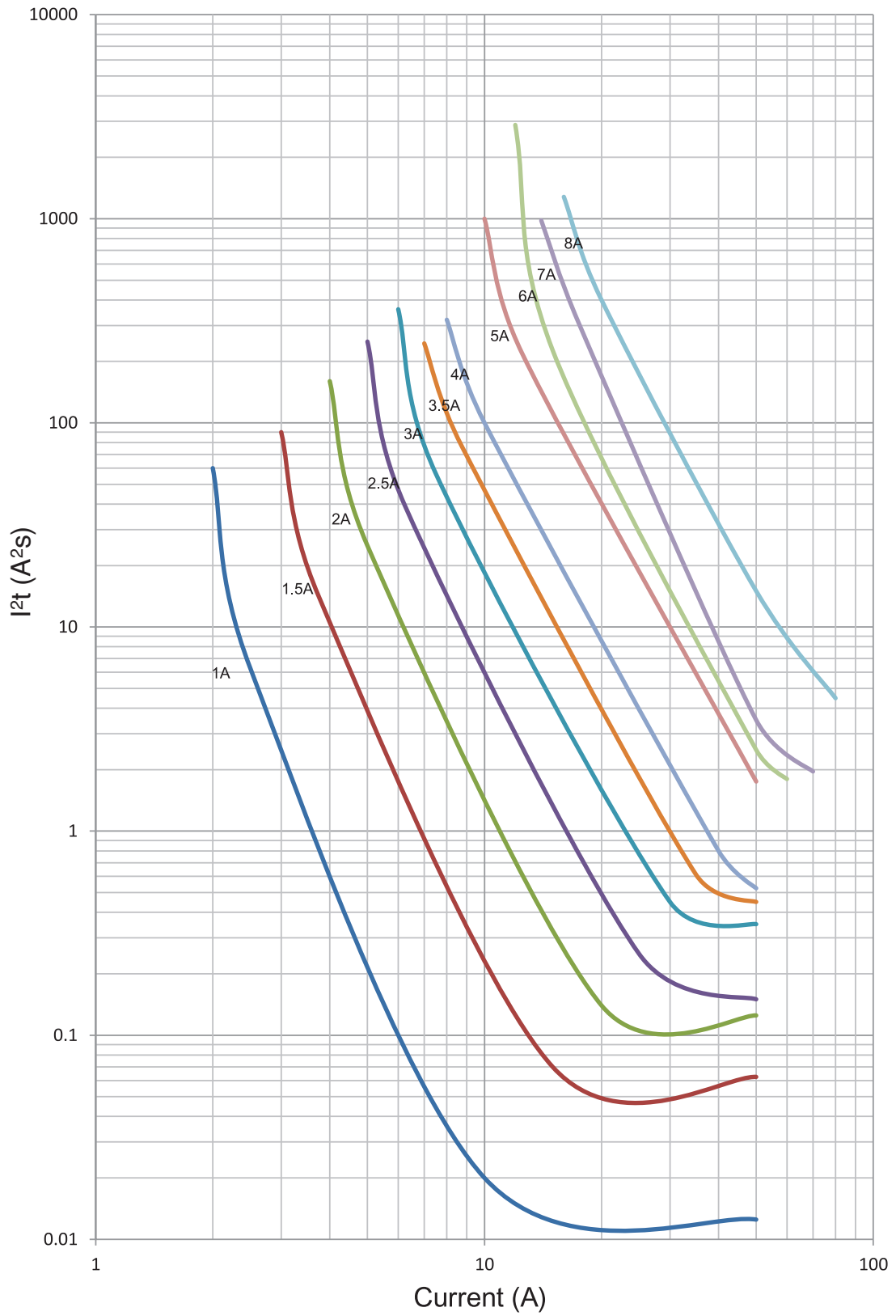
Time-current curves — average melt



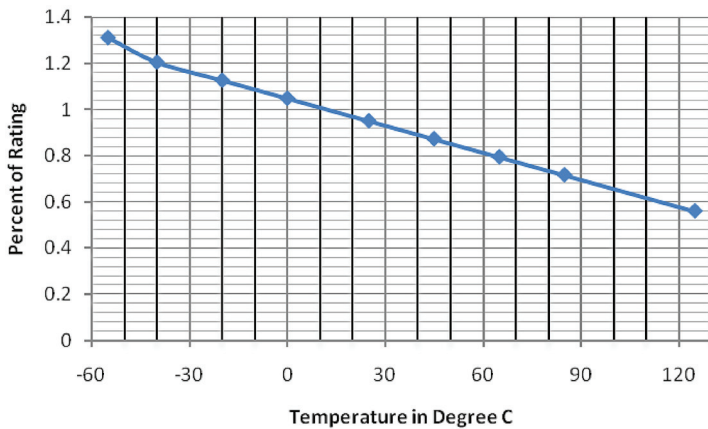
I²t vs. time curves



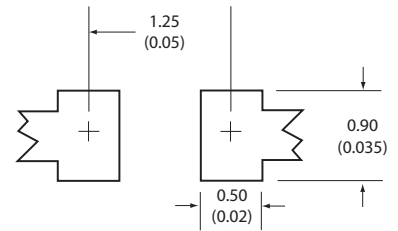
I²t vs. current curves



Temperature derating curve

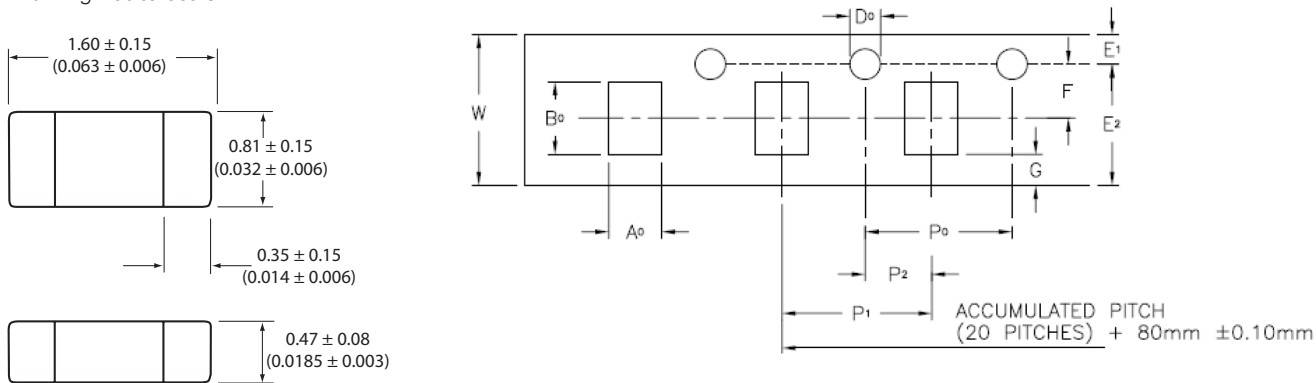


Pad layout



Dimensions - mm (in)

Drawing not to scale.



| A ₀ | B ₀ | D ₀ | E ₁ | E ₂ | F | G | P ₀ | P ₁ | P ₂ | T | W |
|----------------|----------------|------------------------|----------------|----------------|---------------|--------------|----------------|----------------|----------------|----------------|---------------|
| 0.95 ±0.05 | 1.80 ±0.05 | 1.50 +0.10, -0.0 | 1.75 ±0.10 | 6.25 ±0.30 | 3.50 ±0.05 | 0.75 min. | 4.00 ±0.10 | 4.00 ±0.10 | 2.00 ±0.05 | 0.060 ±0.05 | 8.00 ±0.20 |

Product characteristics

| | |
|------------------------------|--|
| Operating temperature | -40 °C to +85 °C , with proper derating factor applied |
| Storage temperature | -40 °C to +85 °C |
| Load humidity | MIL-STD-202G, Method 103B (1000 hr @ +85 °C / 85% RH & 10% rated current) |
| Moisture resistance | MIL-STD-202, Method 106E (50 cycles) |
| Thermal shock | MIL-STD-202, Method 107D (-65 °C to +125 °C, 100 cycles) |
| Vibration test | MIL-STD-202, Method 204D, Test Condition D (10-2,000 Hz) |
| Mechanical shock resistance | MIL-STD-202, Method 213B (3000 G / 0.3 ms) |
| Salt spray resistance | MIL-STD-202, Method 101, Test Condition B (48 hour exposure) |
| Insulation resistance | The insulation resistance after breaking capacity test is higher than 0.1MΩ when measured by 2X rated voltage |
| Solderability | J-STD-002C Method B1 (Dip and Look Test), Method G1 (Wetting Balance Test), Method D (Resistance to Dissolution / Dewetting of Metalization) |
| Resistance to soldering heat | MIL-STD-202, Method 210F (Solder dip +260 °C, 60 seconds / Solder Iron +350 °C, 3-5 seconds) |
| High temperature life test | MIL-STD-202G, Method 108A (1000 Hours @ +70 °C & 60% rated current) |
| Resistance to solvents | MIL-STD-202, Method 215K |

Solder reflow profile

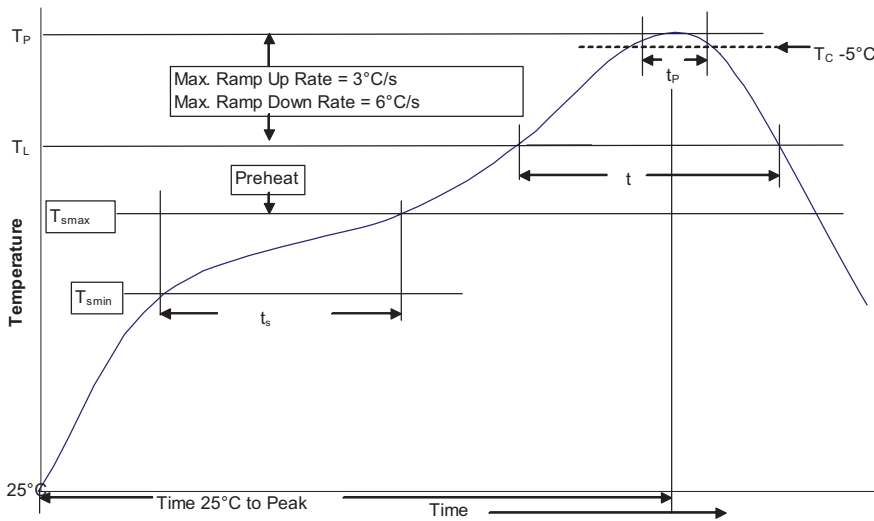


Table 1 - Standard SnPb Solder (T_C)

| Package Thickness | Volume <350 mm ³ | Volume ≥350 mm ³ |
|-------------------|-----------------------------|-----------------------------|
| <2.5mm | 235°C | 220°C |
| ≥2.5mm | 220°C | 220°C |

Table 2 - Lead (Pb) Free Solder (T_C)

| Package Thickness | Volume <350 mm ³ | Volume 350 - 2000 mm ³ | Volume >2000 mm ³ |
|-------------------|-----------------------------|-----------------------------------|------------------------------|
| <1.6mm | 260°C | 260°C | 260°C |
| 1.6 - 2.5mm | 260°C | 250°C | 245°C |
| >2.5mm | 250°C | 245°C | 245°C |

Reference JDEC J-STD-020

| Profile Feature | Standard SnPb Solder | Lead (Pb) Free Solder |
|--|----------------------|-----------------------|
| Preheat and Soak | | |
| • Temperature min. (T _{smin}) | 100°C | 150°C |
| • Temperature max. (T _{smax}) | 150°C | 200°C |
| • Time (T _{smin} to T _{smax}) (t _s) | 60-120 Seconds | 60-120 Seconds |
| Average ramp up rate T _{smax} to T _p | 3°C/ Second Max. | 3°C/ Second Max. |
| Liquidous temperature (T _L) | 183°C | 217°C |
| Time at liquidous (t _L) | 60-150 Seconds | 60-150 Seconds |
| Peak package body temperature (T _p)* | Table 1 | Table 2 |
| Time (t _p)** within 5 °C of the specified classification temperature (T _C) | 20 Seconds** | 30 Seconds** |
| Average ramp-down rate (T _p to T _{smax}) | 6°C/ Second Max. | 6°C/ Second Max. |
| Time 25°C to Peak Temperature | 6 Minutes Max. | 8 Minutes Max. |

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

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

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Printed in USA
Publication No. 4346 BU-SB14476
June 2017