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# Bussmann CC06H Series

## High I<sup>2</sup>t Chip™ 0603 size fuses



### Product description:

- 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 protection in space constrained applications such as:

- 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 (8mm wide tape on 178mm diameter reel - specification EIA 481-1)
- Quantity = 5000 fuses



## Electrical characteristics

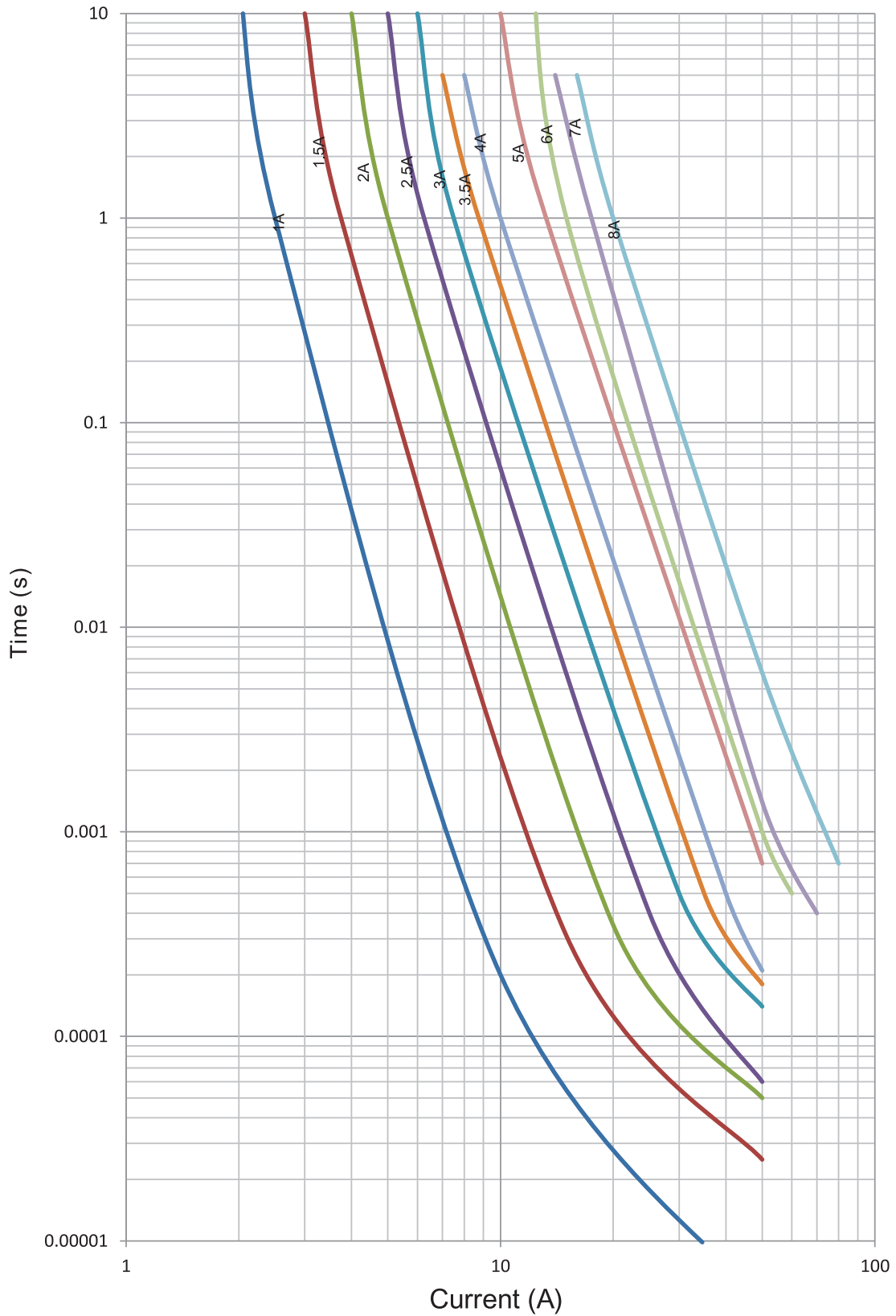
Amp Rating	% of Amp Rating	Opening Time
1-8A	100	4 Hours
1-7A	200	1-60 Seconds
1-8A	250	5 Seconds Max

## Specifications

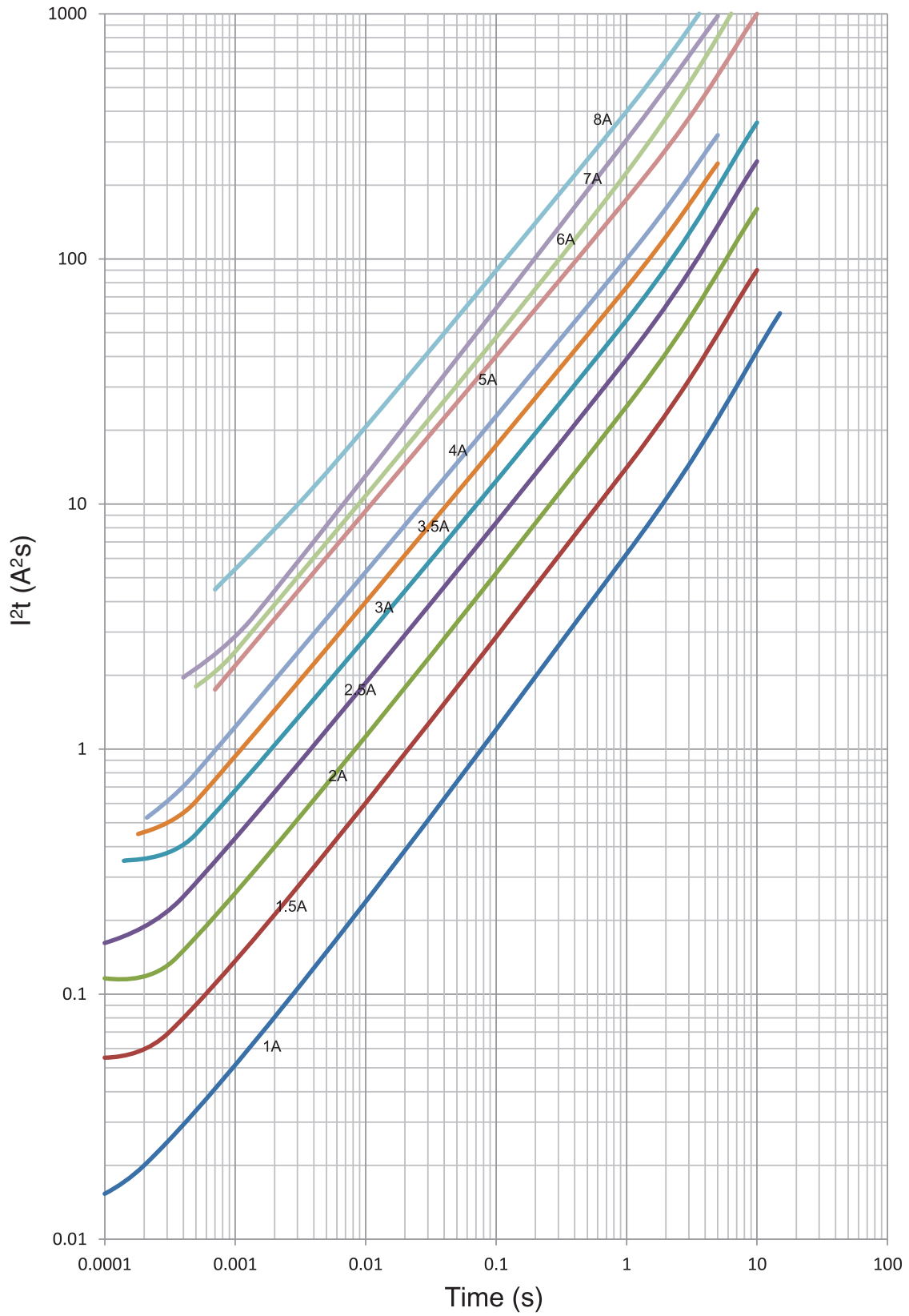
Catalog Number	Amp Rating <sup>5</sup>	Voltage Rating (Vdc)	Interrupting Rating <sup>1,4</sup> (amps)	Typical Cold Resistance <sup>2</sup> ( $\Omega$ )	Typical Pre-Arcing <sup>3</sup> (I <sup>2</sup> t)	Typical Voltage Drop (mV)	Typical Power Dissipation (W)	Alpha Marking	Agency Information (cURus)
CC06H1A	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 I<sup>2</sup>t are measured at rated DC voltage, 10I<sub>n</sub> current (not to exceed interrupting rating).
- The insulation resistance after breaking capacity test is higher than 0.1M $\Omega$  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.

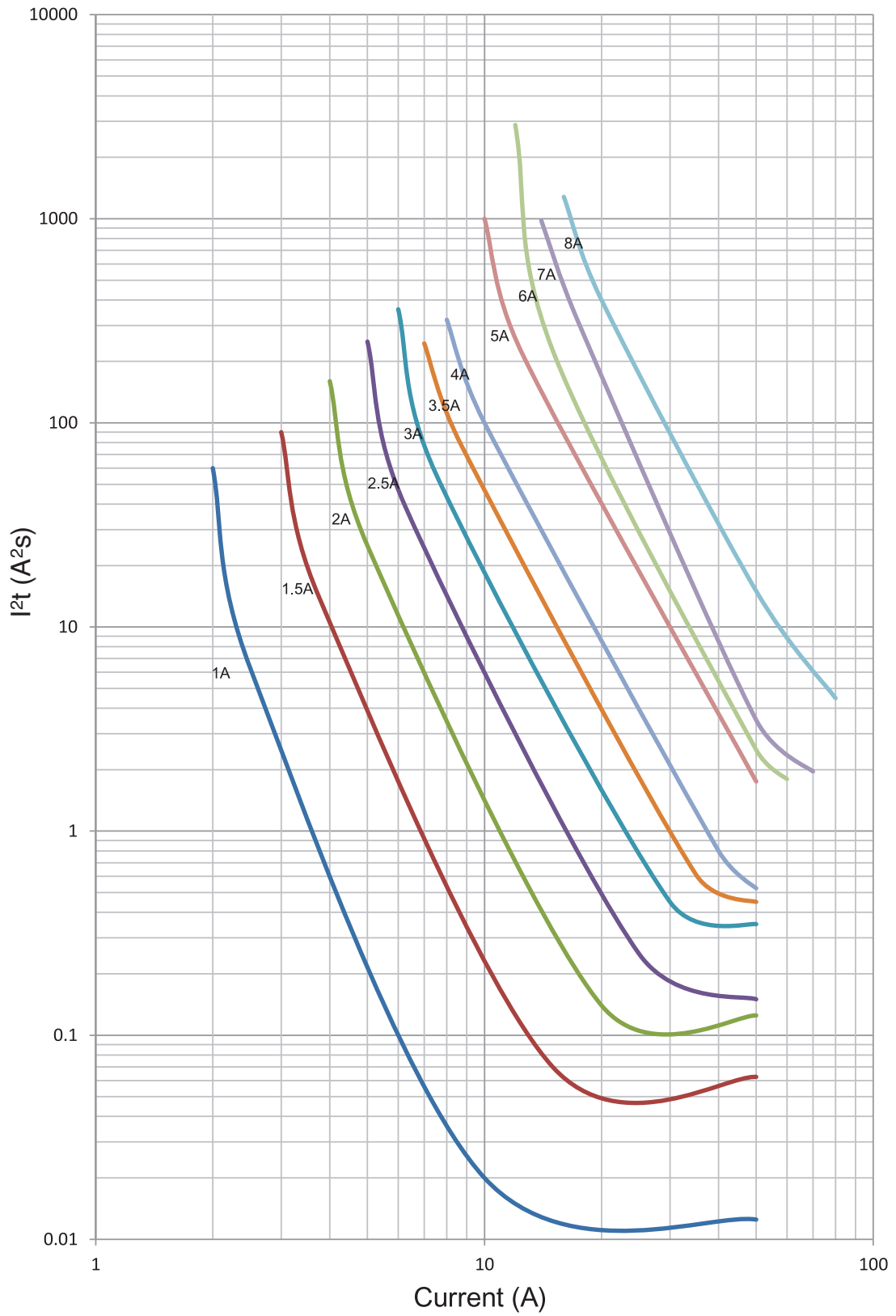
Time-current curves — average melt



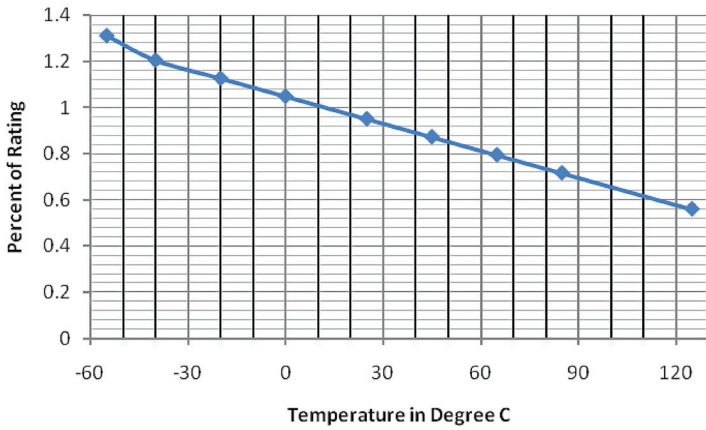
I<sup>2</sup>t vs. time curves



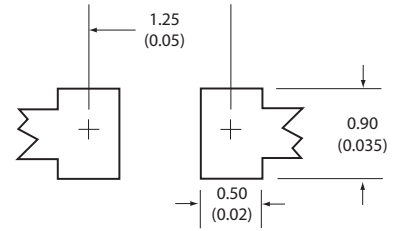
I<sup>2</sup>t vs. current curves



**Temperature derating curve**

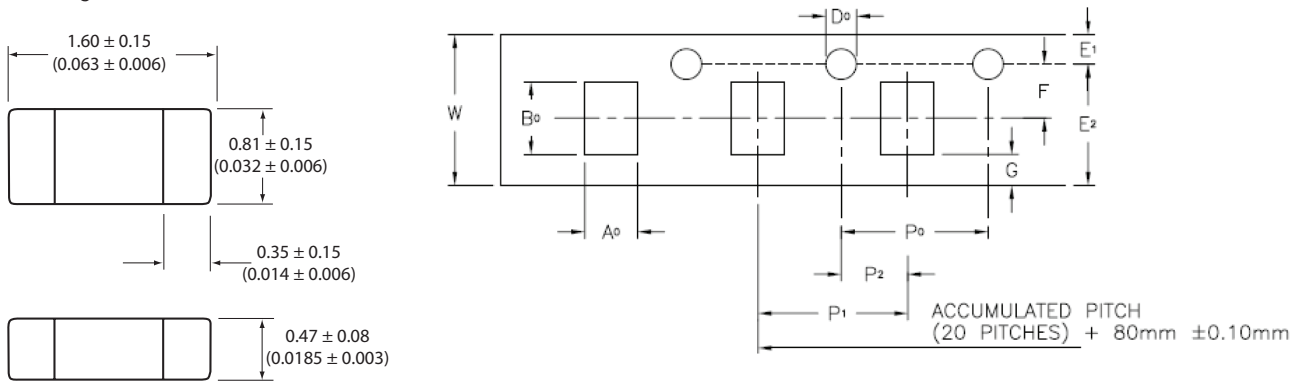


**Pad layout**



**Dimensions - mm (in)**

Drawing not to scale.

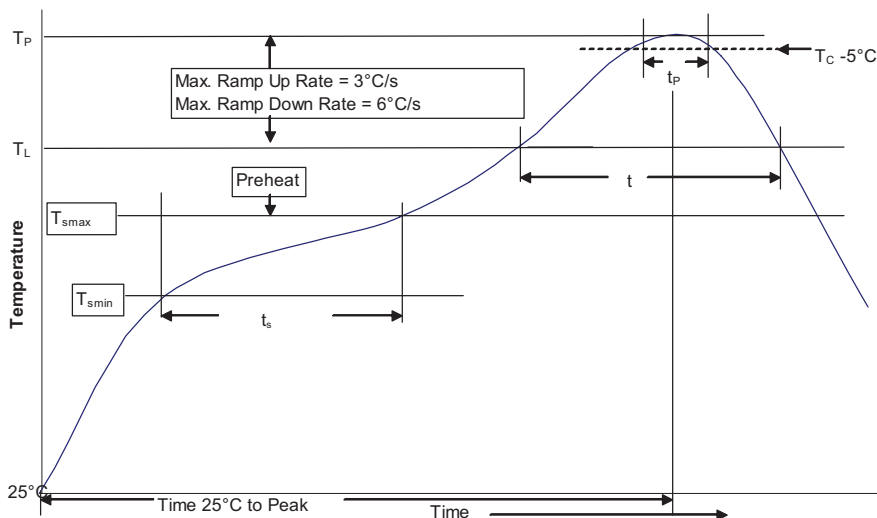


A <sub>0</sub>	B <sub>0</sub>	D <sub>0</sub>	E <sub>1</sub>	E <sub>2</sub>	F	G	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	T	W
0.95 ±0.05	1.80 ±0.05	1.50 +0.10, -0.0	1.75 ±0.10	6.25 ±0.30	3.50 ±0.05	0.75 min.	4.00 ±0.10	4.00 ±0.10	2.00 ±0.05	0.060 ±0.05	8.00 ±0.20

**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 (10-2,000Hz)
Mechanical shock resistance	MIL-STD-202, Method 213B (3000G / 0.3ms)
Salt spray resistance	MIL-STD-202, Method 101, Test Condition B (48 hr exposure)
Insulation resistance	The insulation resistance after breaking capacity test is higher than 0.1MW 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<sub>c</sub>)**

Package Thickness	Volume <350 mm <sup>3</sup>	Volume ≥350 mm <sup>3</sup>
<2.5mm	235°C	220°C
≥2.5mm	220°C	220°C

**Table 2 - Lead (Pb) Free Solder (T<sub>c</sub>)**

Package Thickness	Volume <350 mm <sup>3</sup>	Volume 350 - 2000 mm <sup>3</sup>	Volume >2000 mm <sup>3</sup>
<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 JEDEC J-STD-020D**

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

\* Tolerance for peak profile temperature (T<sub>p</sub>) is defined as a supplier minimum and a user maximum.

\*\* Tolerance for time at peak profile temperature (t<sub>p</sub>) is defined as a supplier minimum and a user maximum.

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Publication No. 4346 — BU-SB14476  
June 2014

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