

Surface Mount Fuses

Ceramic Fuse > 806 Series



Description

The 806 Series fuse is designed specifically to provide overcurrent protection to circuits that operate under high working ambient temperature up to 150 °C.

Its design ensures excellent temperature stability and performance reliability. The high I²t values which is typical in the Littelfuse Ceramic Fuse family ensure high inrush current withstand capability.

Features & Benefits

- Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Operating Temperature from -55 °C to +150 °C
- Designed to provide over-current protection in high current Voltage Regulator Module (VRM) applications
- 100% Lead-free, RoHS compliant, and Halogen-free
- Suitable for both leaded and lead-free reflow/wave soldering
- High current ratings in small size
- High performance materials provide improved performance in elevated ambient temperature application
- Avoids nuisance opening due to high inrush and surge current inherent in the system

Additional Information



Resources



Accessories



Samples

Agency Approvals

Agency	Agency File Number	Ampere Range
c UL US	E10480	20 A – 30 A

Electrical Characteristics

% of Ampere Rating	Ampere Rating	Opening Time at 25 °C
100%	20 A – 30 A	4 hours, Minimum
250%	20 A – 30 A	5 seconds, Maximum

Electrical Specifications

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating (AC/DC) ¹	Nominal Resistance (Ohms) ²	Nominal Melting I ² t (A ² sec) ³	Nominal Voltage Drop At Rated Current (V) ⁴	Nominal Power Dissipation At Rated Current (W)	Agency Approvals c UL US
20	020.	36	250 A @ 24 VDC	0.00290	65	0.0938	1.8760	x
25	025.		200 A @ 36 VDC	0.00219	110	0.0877	2.1925	x
30	030.		300 A @ 24 VDC 200 A @ 36 VDC	0.00174	170	0.0948	2.8440	x

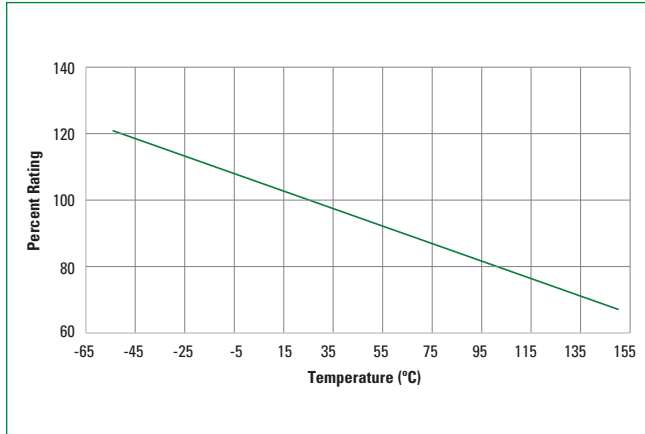
Notes:

1. DC Interrupting Rating tested at rated voltage with time constant < 0.1 msec.
 2. Nominal Resistance measured with <10% rated current.
 3. Nominal Melting I²t measured at 1 msec. opening time. For other I²t data refer to chart.
 4. Nominal Voltage Drop measured at rated current after temperature has stabilized and with fuse mounted on board with 3 oz Cu trace.
- Devices are designed to carry rated current for hours minimum. It is recommended that devices be operated continuously at no more than 80% rated current. See 'Temperature Re-rating Curve' for additional re-rating information.
 - Devices are designed to be mounted with marking code facing up.

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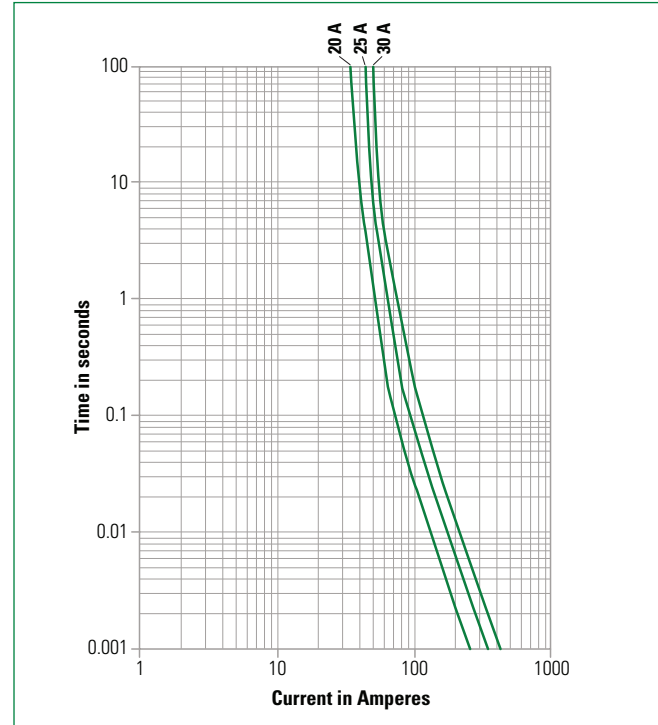
Temperature Re-rating Curve


Notes:

1. Re-rating depicted in this curve is in addition to the standard re-rating of 20% for continuous operation.

Example: For continuous operation at 75 °C, the fuse should be rerated as follows: $I = (0.80)(0.85)I_{\text{rat}} = (0.68)I_{\text{rat}}$

Average Time Current Curves



Product Characteristics

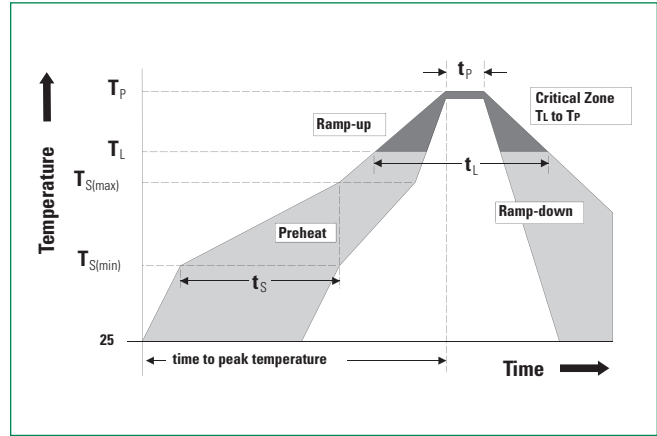
Materials	Body: Advanced Ceramic Terminations: Ag/Ni/Sn (100% Lead-free)
Moisture Sensitivity Level	IPC/JEDEC J-STD-020, Level 1
Solderability	IPC/ECA/JEDEC J-STD-002D
Biased Humidity Test	JESD22-A110-B
Resistance to Solvents	MIL-STD-202, Method 215
Moisture Resistance	MIL-STD-202, Method 106G
Thermal Shock	MIL-STD-202, Method 107G
Mechanical Shock	MIL-STD-202, Method 213B
Vibration Low Frequency	MIL-STD-202, Method 201A
Vibration High Frequency	MIL-STD-202, Method 204, Condition D
Dissolution of Metallization	IPC/EIC/JEDEC J-STD-002B, Condition D
Terminal Strength	IEC 60127-4

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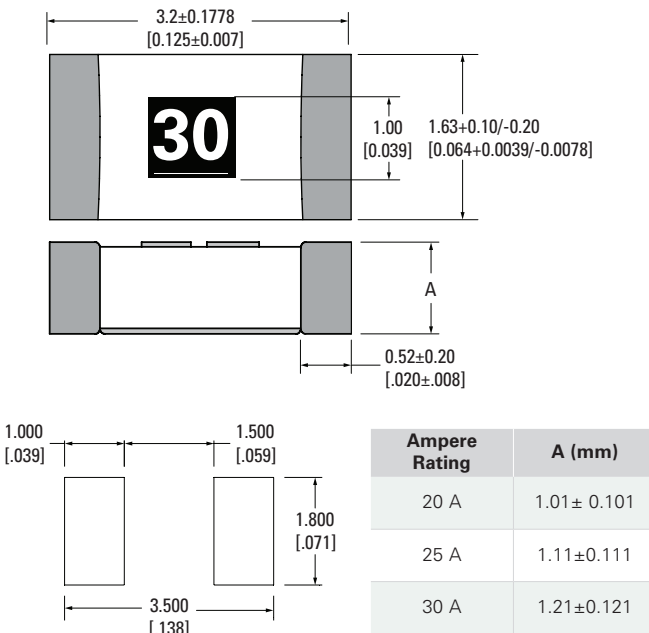
Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150 °C
	- Temperature Max ($T_{s(max)}$)	200 °C
	- Time (Min to Max) (t_s)	60–180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		5 °C/second max.
$T_{S(max)}$ to T_L - Ramp-up Rate		5 °C/second max.
Reflow	- Temperature (T_L) (Liquidus)	217 °C
	- Temperature (t_L)	60–150 secs
Peak Temperature (T_p)		260+0/-5 °C
Time within 5 °C of actual peak Temperature (t_p)		10–30 seconds
Ramp-down Rate		6 °C/second max.
Time 25 °C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260 °C
Wave Soldering Parameters		260 °C Peak Temperature, 10 seconds max.



Dimensions

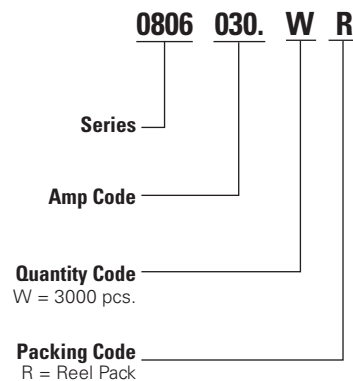
Measurements are in mm [inch]



Part Marking System

Ampere Rating	Marking Code
020	20
025	25
030	30

Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
8mm Tape and Reel	EIA-481, IEC 60286, Part 3	3000	WR

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