SolidMatrix® 1206 Fast Acting Surface Mount Fuses

Features:

- Multilayer monolithic structure with glass ceramic body and silver fusing element
- Silver termination with nickel and pure-tin solder plating, providing excellent solderability
- Compatible with both wave and reflow soldering processes
- Operating temperature range: -55°C to +125°C (with de-rating)
- RoHS compliant

Clear-Time Characteristics (Fast Acting):

% of current rating	Clear-time at 25 °C
100%	4 hours min.
250%	5 seconds max.
400%	0.05 seconds max.

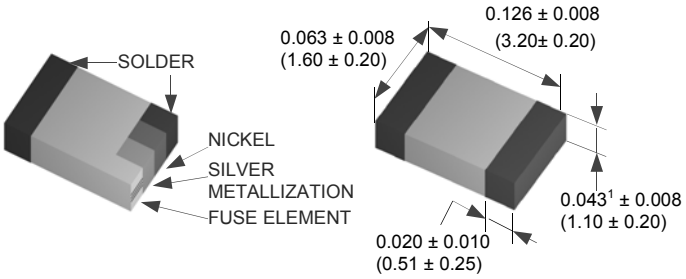
Agency Approval: Recognized Under the Components Program of Underwriters Laboratories, File Number: E232989

Patents: U.S. Patent numbers 6,034,589, 6,228,230, 6,602,766, and other pending patents

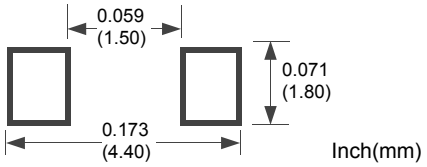
Interrupting Ratings:

0.25A—3A	50A at rated voltages
4A—8A	45A at rated voltages

Shape and Dimensions:



Recommended Land Pattern:



Ordering Information:

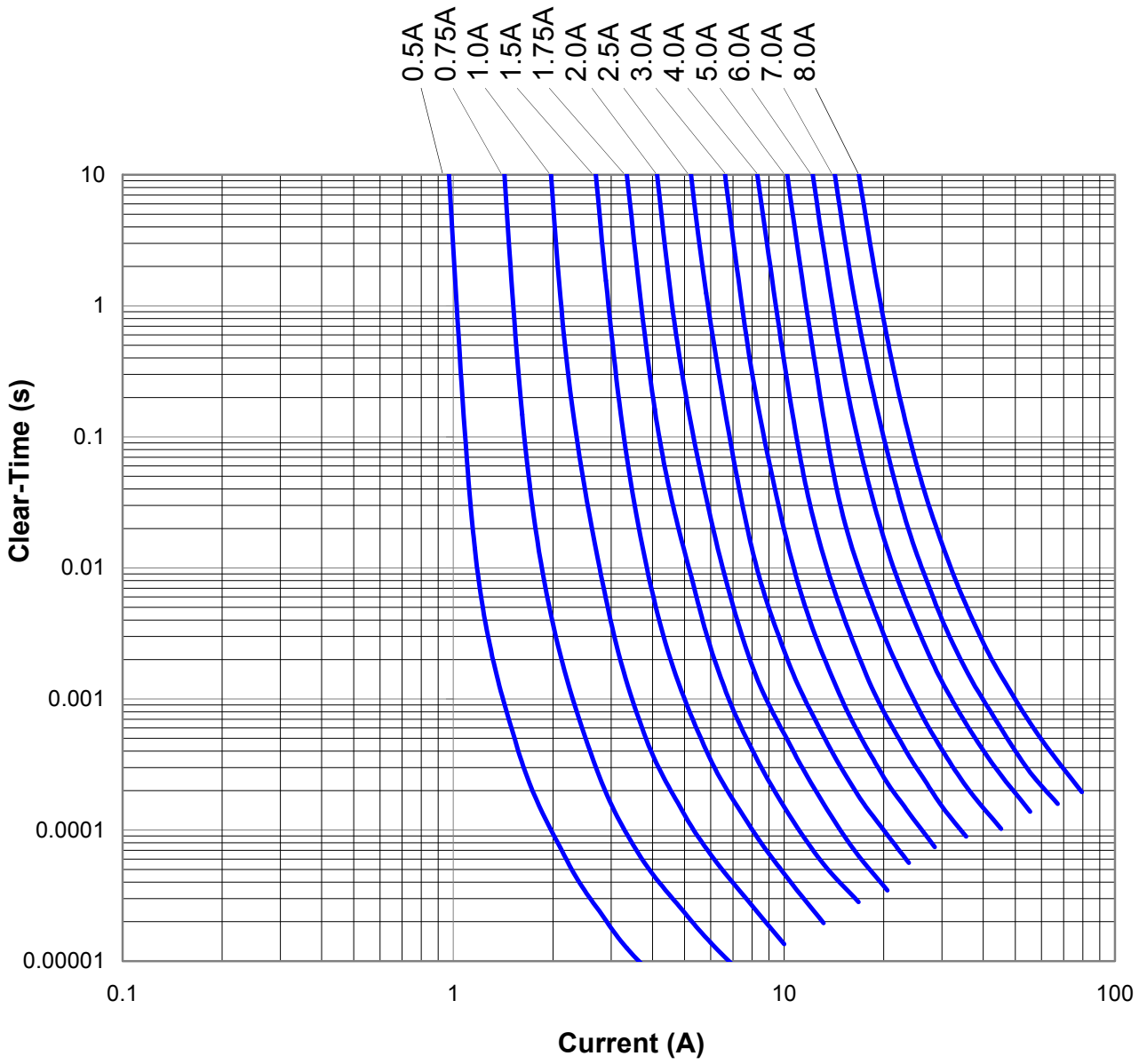
Part Number	Current Rating (A)[3]	Voltage Rating (VDC)	Nominal Cold DCR (Ω)[2]
F1206FA0500V063T	0.5	63	0.500
F1206FA0750V063T	0.75	63	0.330
F1206FA1000V063T	1.0	63	0.220
F1206FA1500V063T	1.5	63	0.120
F1206FA1750V063T	1.75	63	0.100
F1206FA2000V063T	2.0	63	0.050
F1206FA2500V032T	2.5	32	0.035
F1206FA3000V032T	3.0	32	0.031
F1206FA4000V032T	4.0	32	0.022
F1206FA5000V032T	5.0	32	0.015
F1206FA6000V024T	6.0	24	0.013
F1206FA7000V024T	7.0	24	0.011
F1206FA8000V024T	8.0	24	0.008

1. Nominal height of 0.023" is available.
2. Measured at ≤ 10% rated current and 25°C ambient.
3. Other current ratings are available. Please contact factory.

11525 Sorrento Valley Road, San Diego, CA 92121, U.S.A. **www.aem-usa.com** Phone: (858)481-0210, Fax: (858)481-1123

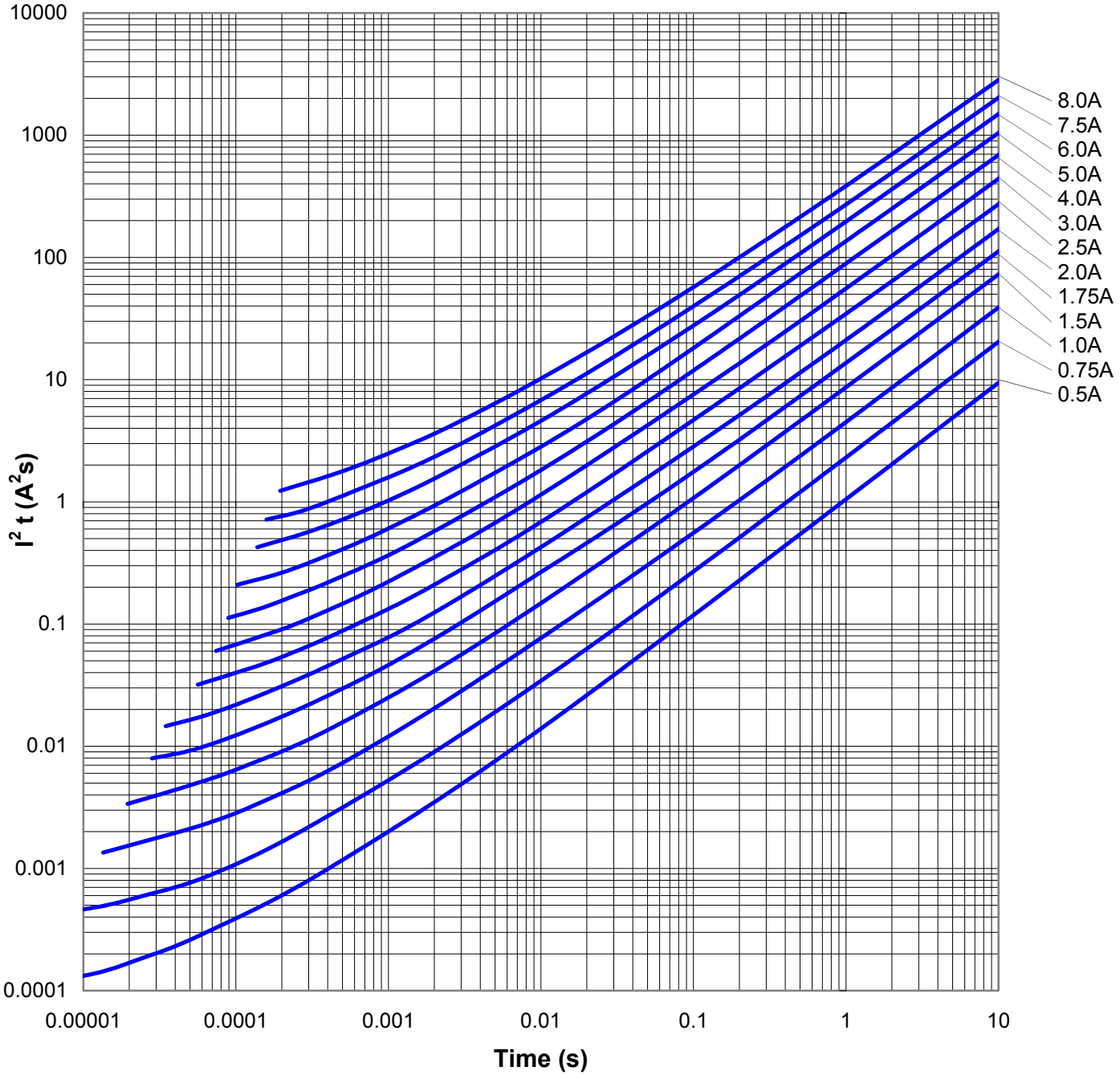
SolidMatrix® 1206 Fast Acting Surface Mount Fuses

Average Clear-Time Curves



SolidMatrix® 1206 Fast Acting Surface Mount Fuses

I^2t vs. t Curves



SolidMatrix® 0603 Fast Acting Surface Mount Fuses

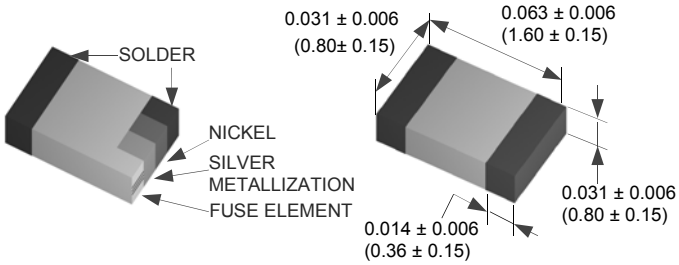
Features:

- Multilayer monolithic structure with glass ceramic body and silver fusing element
- Silver termination with nickel and pure-tin solder plating, providing excellent solderability
- Compatible with both wave and reflow soldering processes
- Operating temperature range: -55°C to +125°C (with de-rating)
- RoHS compliant

Clear-Time Characteristics (Fast Acting):

% of current rating	Clear-time at 25 °C
100%	4 hours min.
250%	5 seconds max.
400%	0.05 seconds max.

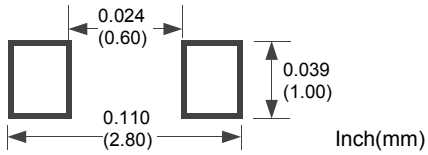
Shape and Dimensions:



Agency Approval: Recognized Under the Components Program of Underwriters Laboratories, File Number: E232989.

Patents: U.S. Patent numbers 6,034,589, 6,228,230, 6,602,766, and other pending patents

Recommended Land Pattern:



Interrupting Ratings:

0.25A—1A 50A at rated voltage
1.5A—6A 35A at rated voltages

Ordering Information:

Part Number	Current Rating (A)[2]	Voltage Rating (VDC)	Nominal Cold DCR (Ω)[1]
F0603FA0500V032T	0.5	32	0.485
F0603FA0750V032T	0.75	32	0.254
F0603FA1000V032T	1.0	32	0.131
F0603FA1500V032T	1.5	32	0.059
F0603FA2000V032T	2.0	32	0.044
F0603FA2500V032T	2.5	32	0.032
F0603FA3000V032T	3.0	32	0.025
F0603FA3500V032T	3.5	32	0.024
F0603FA4000V032T	4.0	32	0.018
F0603FA5000V032T	5.0	32	0.013
F0603FA6000V024T	6.0	24	0.010

1. Measured at ≤ 10% rated current and 25°C ambient .
2. Other current ratings are available. Please contact factory.

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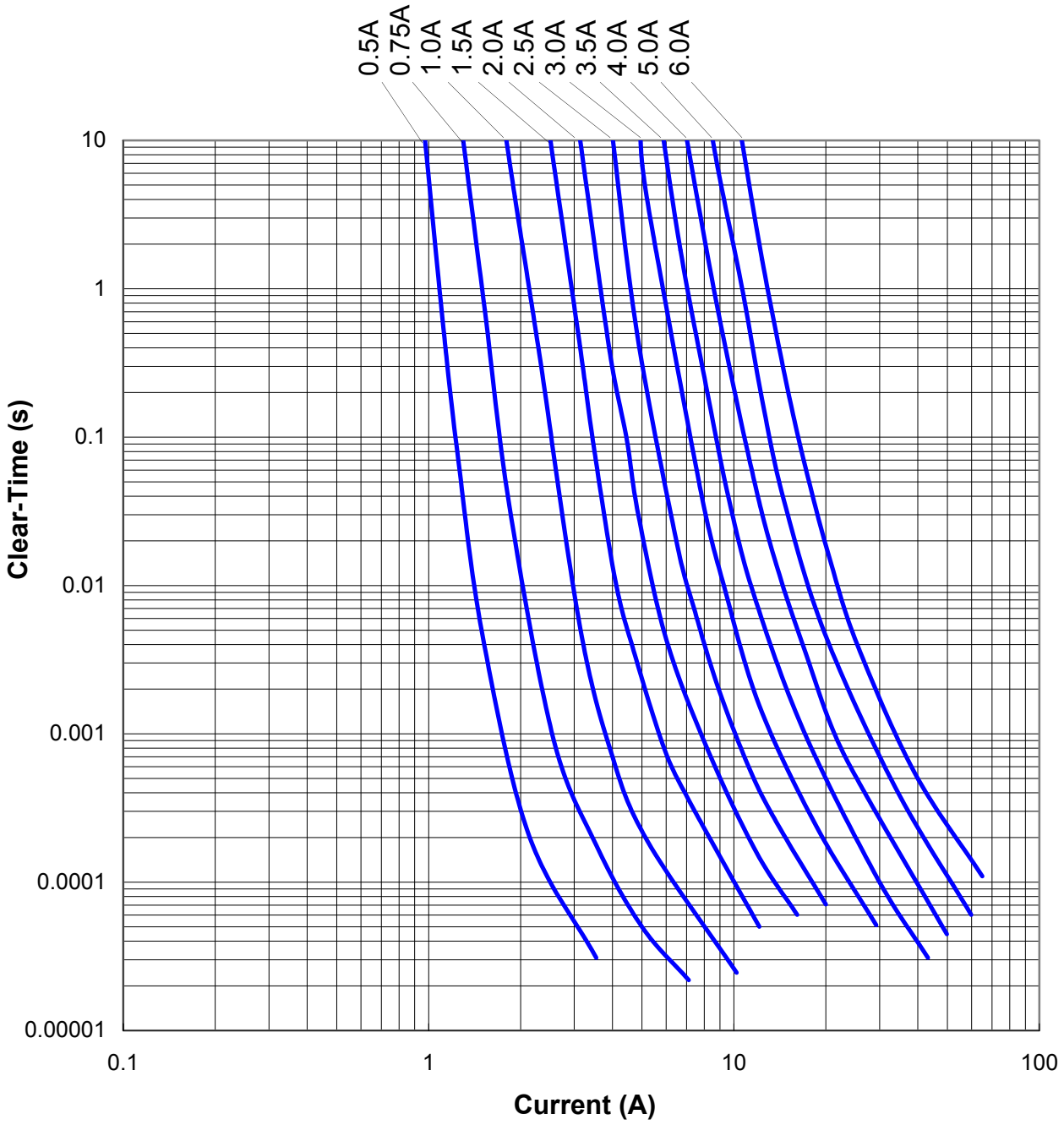
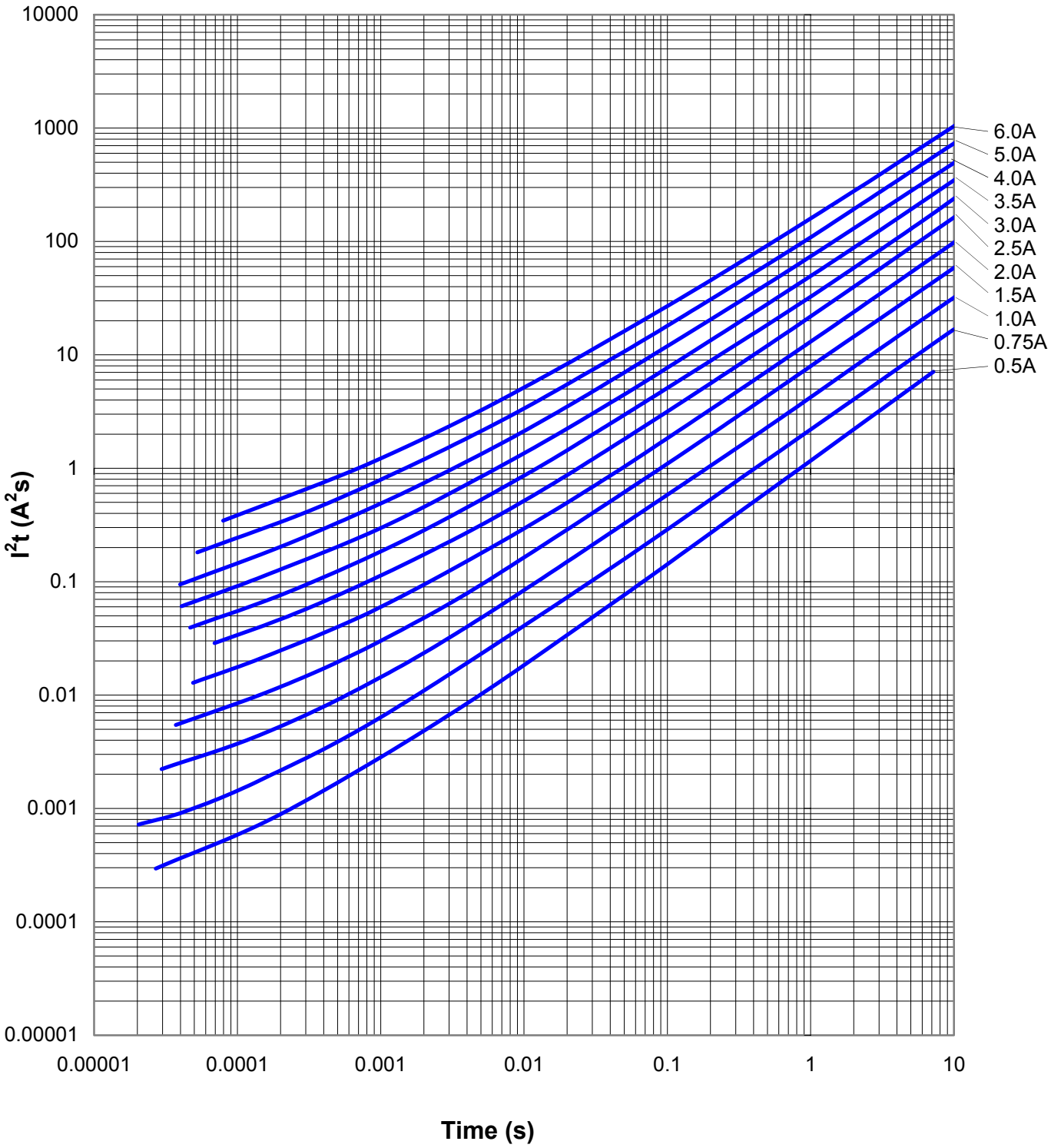
SolidMatrix® 0603 Fast Acting Surface Mount Fuses

Average Clear-Time Curves



SolidMatrix® 0603 Fast Acting Surface Mount Fuses

I^2t vs. t Curves



SolidMatrix® 0402 Fast Acting Surface Mount Fuses

Features:

- Multilayer monolithic structure with glass ceramic body and silver fusing element
- Silver termination with nickel and pure-tin solder plating, providing excellent solderability
- Compatible with both wave and reflow soldering processes
- Operating temperature range: -55°C to +125°C (with de-rating)
- RoHS compiant

Clear-Time Characteristics (Fast Acting):

% of current rating	Clear-time at 25 °C
100%	4 hours min.
250%	5 seconds max.
400%	0.05 seconds max.

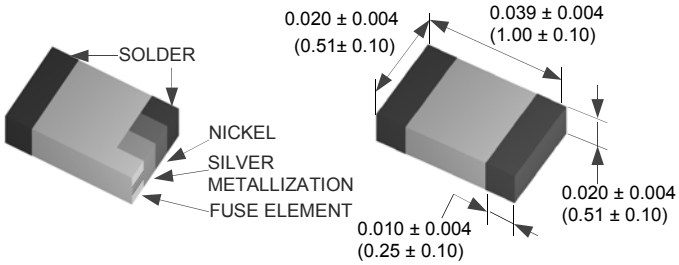
Agency Approval: Recognized Under the Components Program of Underwriters Laboratories, File Number: E232989

Patents: U.S. Patent numbers 6,034,589, 6,228,230, 6,602,766, and other pending patents

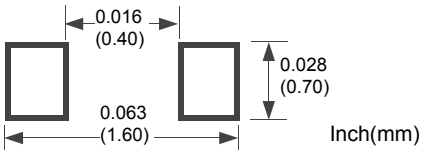
Interrupting Ratings:

35A at rated voltage

Shape and Dimensions:



Recommended Land Pattern:



Ordering Information:

Part Number	Current Rating (A)[2]	Voltage Rating (VDC)	Nominal Cold DCR (Ω)[1]
F0402FA0500V024T	0.5	24	0.380
F0402FA0750V024T	0.75	24	0.210
F0402FA1000V024T	1.0	24	0.120
F0402FA1500V024T	1.5	24	0.056
F0402FA2000V024T	2.0	24	0.035
F0402FA3000V024T	3.0	24	0.021
F0402FA4000V024T	4.0	24	0.014

1. Measured at ≤ 10% rated current and 25°C ambient.
2. Other current ratings are available. Please contact factory.

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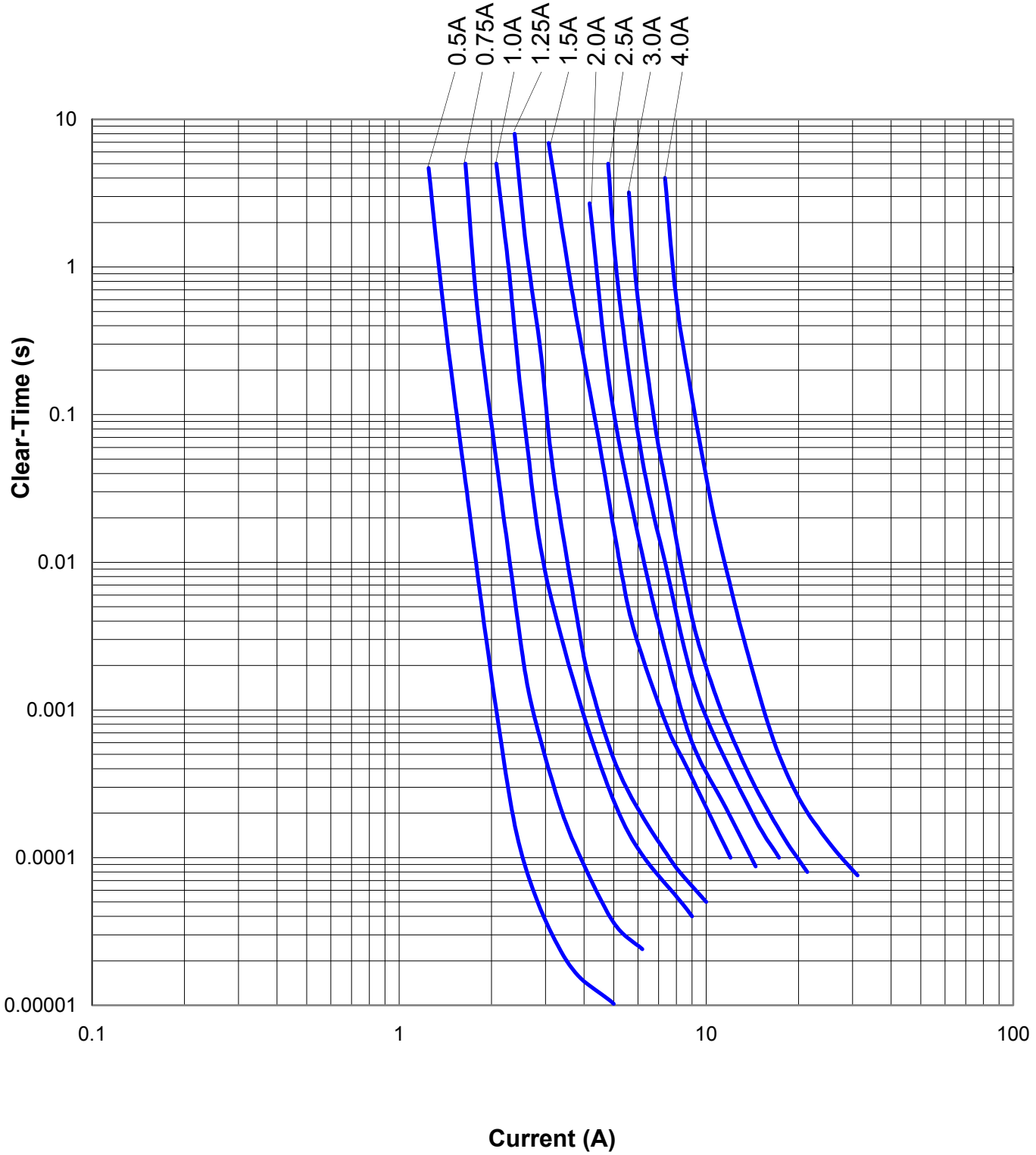
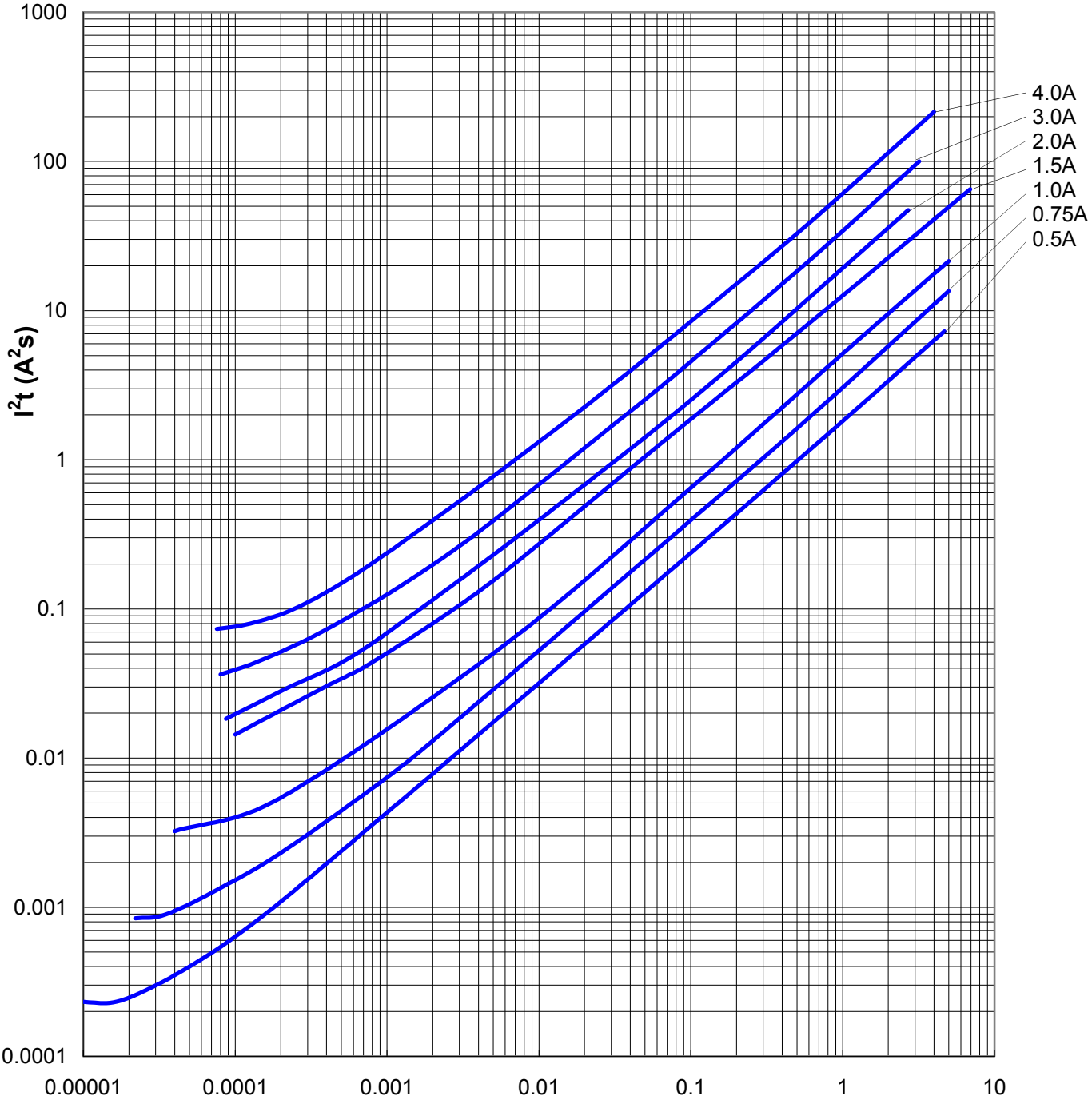
SolidMatrix® 0402 Fast Acting Surface Mount Fuses

Average Clear-Time Curves



SolidMatrix® 0402 Fast Acting Surface Mount Fuses

I^2t vs. t Curves



SolidMatrix® Surface Mount Fuses

Product Identification:

F	0402	FA	1000	V024	T
(1)	(2)	(3)	(4)	(5)	(6)

(1) **Series code:** F — Chip Fuse
(2) **Size code**: Standard EIA Chip Size
(3) **Action code:** FA — Fast Acting; SB — Slow Blow
(4) **Current rating code:** 1000 — 1000 mA
(5) **Voltage rating code:** V024 — 24 VDC
(6) **Package code:** T — Tape & Reel, B — Bulk

Reliability Tests:

No.	Test	Requirement	Test condition	Test reference
1	Soldering heat resistance	DCR change ≤ ±10% No mechanical damage	One dip at 260°C for 60 sec.	MIL-STD-202 Method 210
2	Solderability	Minimum 95% coverage	One dip at 235°C for 5 sec.	MIL-STD-202 Method 208
3	Thermal shock	DCR change ≤ ±10% No mechanical damage	100 cycles between -65°C and +125°C	MIL-STD-202 Method 107
4	Moisture resistance	DCR change ≤ ±15% No excessive corrosion	10 cycles	MIL-STD-202 Method 106
5	Salt spray	DCR change ≤ ±10% No excessive corrosion	48 hour exposure	MIL-STD-202 Method 101
6	Mechanical vibration	DCR change ≤ ±10% No mechanical damage	0.4" D.A. or 30 G between 5 – 3000 Hz	MIL-STD-202 Method 204
7	Mechanical shock	DCR change ≤ ±10% No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
8	Terminal strength	DCR change ≤ ±10% No mechanical damage	30 sec. hanging for 1206 (1.5kg) and 0603 (0.5kg) 2 lb pushing for 0402	

Electrical Specifications:

Clear-Time Characteristics: Same as specified on the Short Form Data Sheet
Insulation Resistance after Opening: 20,000 ohms minimum when cleared with rated voltage applied. Fuse clearing under low voltage conditions may result in lower after clearing insulation resistance values. (Note: Under normal fault conditions (low or rated voltage conditions), AEM SolidMatrix fuses provide sufficient after clearing insulation resistance values for circuit protection.)
Current Carrying Capacity: 100% rated current at +25ºC ambient for 4 hours minimum when evaluated per MIL-PRF-23419
Interrupt Ratings: Same as specified on the Short Form Data Sheet

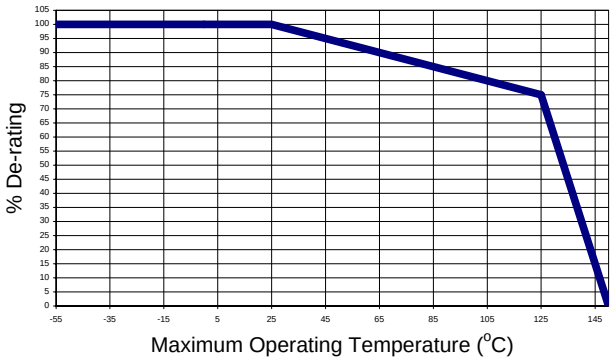
Fuse Selection and Temperature De-rating Guideline:

The ambient temperature affects the current carrying capacity of fuses. When a fuse is operating at a temperature higher than 25°C, the fuse shall be "de-rated".

To select a fuse from the catalog, the following rule may be followed: Catalog Fuse Current Rating = Nominal Operating Current / 0.75 / % De-rating at the maximum operating temperature.

Example: At maximum operating temperature of 65°C, % De-rating is 90%. The nominal operating current is 4A. The current rating for fuse selected from the catalog shall be:
4 / 0.75 / 90% = 5.9 or 6A.

Temperature Effect on Current Rating



Specifications and descriptions in this literature are as accurate as known at the time of publish, but are subject to change without notice.

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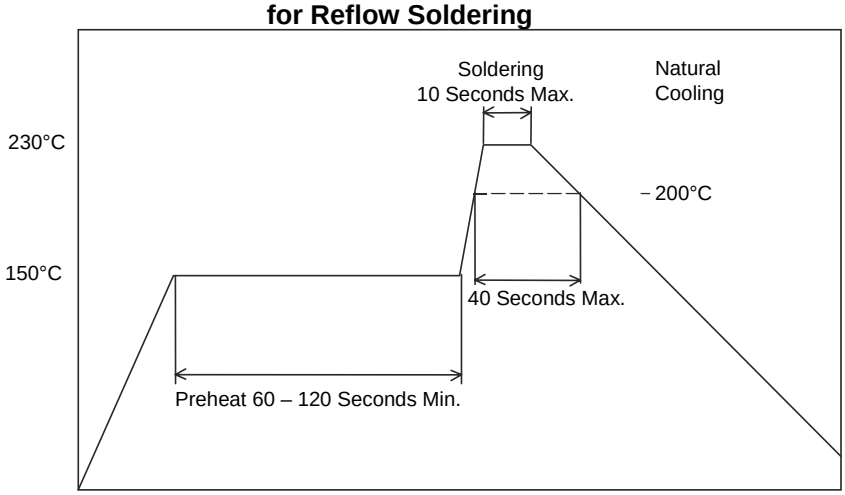
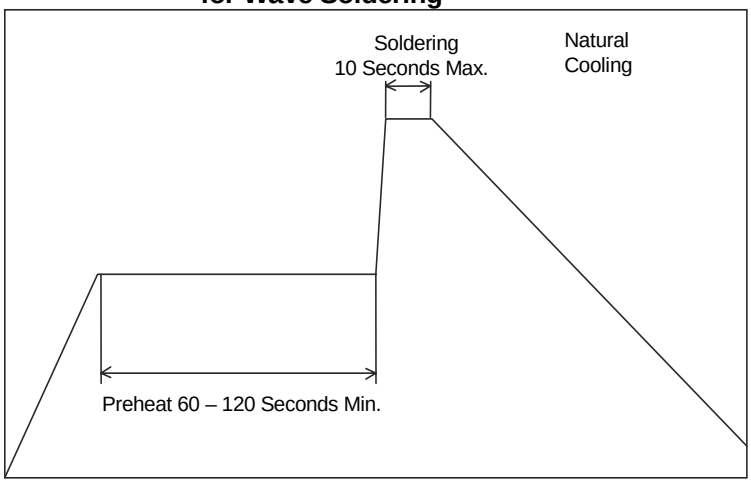
SolidMatrix® Surface Mount Fuses

Soldering Temperature Profiles

Recommended Temperature Profile for Reflow Soldering



Recommended Temperature Profile for Wave Soldering



Maximum peak temperature 260°C for maximum 60 seconds