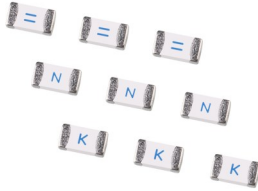


SolidMatrix® Surface Mount Fuses

VH Series (Voltage High), 1206 Size



Features:

- High inrush current withstanding capability
- Ceramic Monolithic structure
- Silver fusing element and silver termination with nickel and tin plating
- Symmetrical design with marking on both sides (optional)
- Operating temperature range: -55°C to +125°C (with de-rating)

Clearing Time Characteristics:

% of Current Rating	Clearing Time at 25°C	
100%	4 hours min.	
200% (2.5 A - 5.0 A)		60 seconds max.
350% (6.0 A - 8.0 A)		5 seconds max.
1000%	0.0002 seconds min.	0.02 seconds max.

Shape and Dimensions:

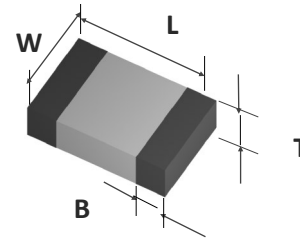
Unit	Inch	mm
L	0.126 ± 0.008	3.20 ± 0.20
W	0.063 ± 0.008	1.60 ± 0.20
T	0.034 ± 0.008	0.85 ± 0.20
B	0.020 ± 0.010	0.51 ± 0.25

Agency Approval:

Recognized Under the Components Program of UL.
File Number: E232989.

Applications:

- Power tools
- DC-DC convert
- Display
- PC
- Server
- Battery pack
- Set top box



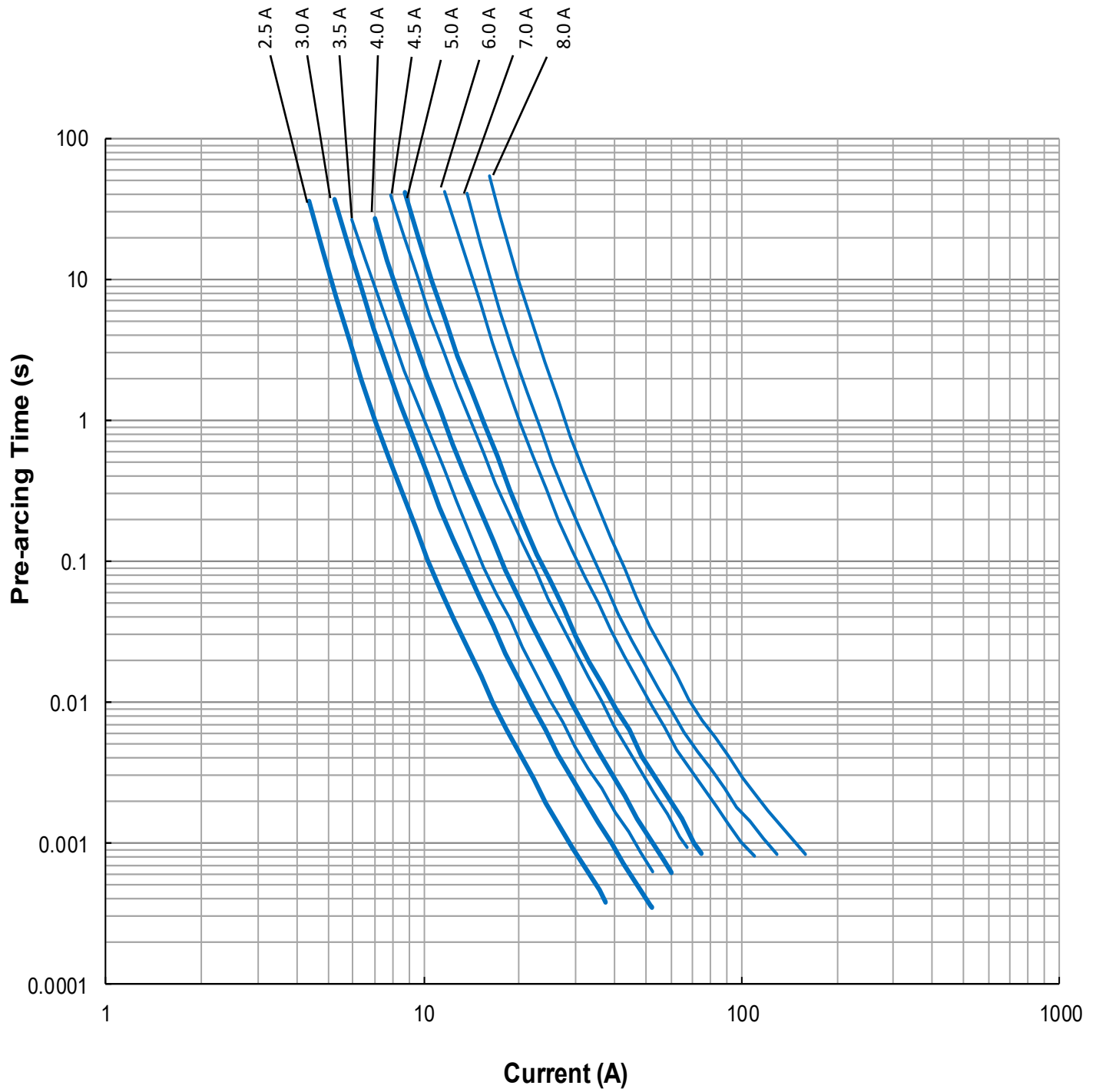
Ordering Information:

Part Number	Current Rating (A)	Voltage Rating (Vdc)	Interrupting Ratings	Nominal Cold DCR (Ω) ¹	Nominal I ² t (A ² s) ²	Marking ³
F1206VH2500TM	2.5	65V	60A@ 65Vdc 80A@48Vdc 100A@32Vdc	0.065	1.15	J
F1206VH3000TM	3.0			0.042	2.40	K
F1206VH3500TM	3.5			0.033	2.80	L
F1206VH4000TM	4.0			0.026	3.80	M
F1206VH4500TM	4.5			0.024	3.90	T
F1206VH5000TM	5.0			0.018	4.40	N
F1206VH6000TM	6.0	48V	80A@48Vdc 100A@32Vdc	0.011	13.0	+
F1206VH7000TM	7.0			0.009	19.0	-
F1206VH8000TM	8.0			0.007	20.0	=

1. Measured at ≤ 10% rated current and 25°C ambient.
2. Melting I²t at 10 times of rated current.
3. Blue Marking Character Code.

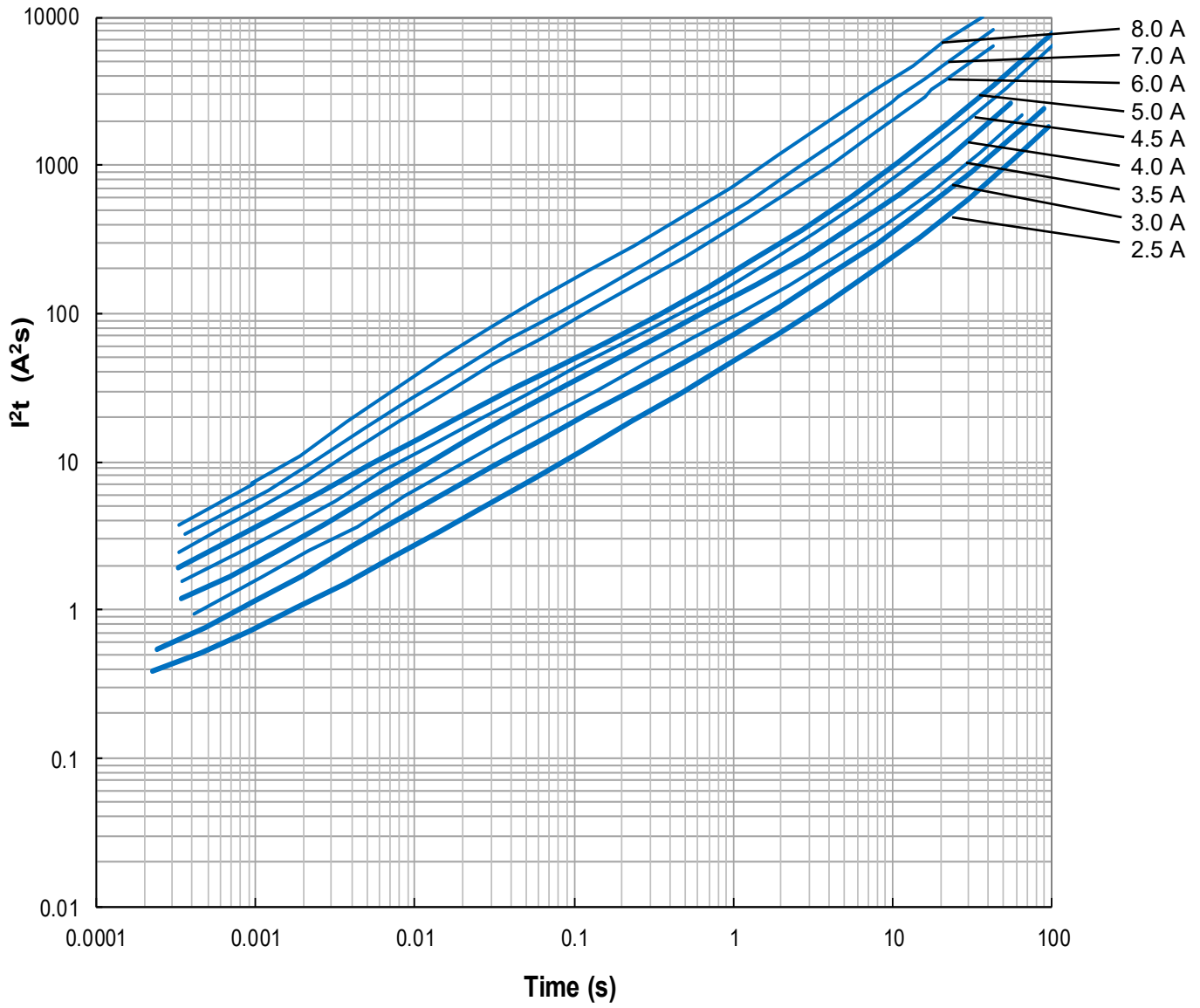
SolidMatrix[®] Surface Mount Fuses
VH Series (Voltage High), 1206 Size

Average Pre-arcing Time Curves:



SolidMatrix[®] Surface Mount Fuses
VH Series (Voltage High), 1206 Size

Average I²t vs. t Curves:



SolidMatrix® Surface Mount Fuses

Product Identification:

F 0603 FA 1000 V032 T M

(1) (2) (3) (4) (5) (6) (7)

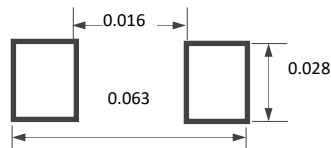
- (1) **Product Code:** F— Chip Fuse
- (2) **Size Code:** Standard EIA Chip Sizes
- (3) **Series Code:** FA - Fast Acting, SB - Slow Blow,
HI - High Inrush, FF - Very Fast Acting, HB - High Current
- (4) **Current Rating Code:** 1000 - 1000 mA (For HB, 10 - 10A)
- (5) **Voltage Rating Code:** V032 - 32 VDC
- (6) **Package Code:** T - Tape & Reel, B - Bulk
- (7) **Marking Code:** M - With Marking

F 1206 HC 20A0 T M

(1) (2) (3) (4) (5) (6)

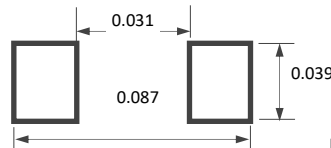
- (1) **Product Code:** F— Chip Fuse
- (2) **Size Code:** L x W (inch),
the first two digits-L (length),
the last two digits-W (width)
- (3) **Series Code:** HC Series
- (4) **Current Rating Code:** 20A0—20.0A
- (5) **Package Code:** T - Tape & Reel, B - Bulk
- (6) **Marking Code:** M - With Marking

Recommended Land Pattern:



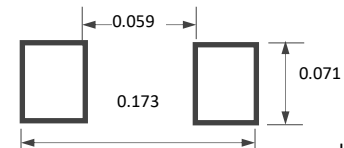
0402 Size

Inch (mm)



0603 Size

Inch (mm)



1206 Size

Inch (mm)

Environmental Tests:

No.	Test	Test Condition and Requirement	Test reference
1	Soldering heat resistance	DCR change $\leq \pm 10\%$. No mechanical damage One dip at 260°C for 60 seconds	MIL-STD-202 Method 210
2	Solderability	245°C , 5 seconds, new solder coverage $\geq 95\%$	MIL-STD-202 Method 208
3	Thermal shock	DCR change $\leq \pm 10\%$. No mechanical damage 100 cycles between -65°C and +125°C	MIL-STD-202 Method 107
4	Moisture resistance	10 cycles, DCR change $\leq \pm 10\%$, no excessive corrosion	MIL-STD-202 Method 106
5	Salt spray	DCR change $\leq \pm 10\%$. No excessive corrosion 48 hour exposure	MIL-STD-202 Method 101
6	Mechanical vibration	DCR change $\leq \pm 10\%$. No mechanical damage. 0.4 " D.A. or 30 G between 5 – 3000 Hz	MIL-STD-202 Method 204
7	Mechanical shock	DCR change $\leq \pm 10\%$. No mechanical damage. 1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
8	Life	80% rated current (75% for <1A), 2000 hours, ambient temperature (from +20°C to 30°C), voltage drop change within $\pm 10\%$	Refer to AEM QIQ106

Moisture Sensitivity Level 1

SolidMatrix[®] Surface Mount Fuses

Electrical Specification:

Clearing Time Characteristics:

Same as specified on the Short Form Data Sheet

Insulation Resistance after Opening:

20,000 ohms typical 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 +25°C ambient for 4 hours minimum when evaluated per MIL-PRF-23419

Interrupt Ratings:

Same as specified in this catalog.

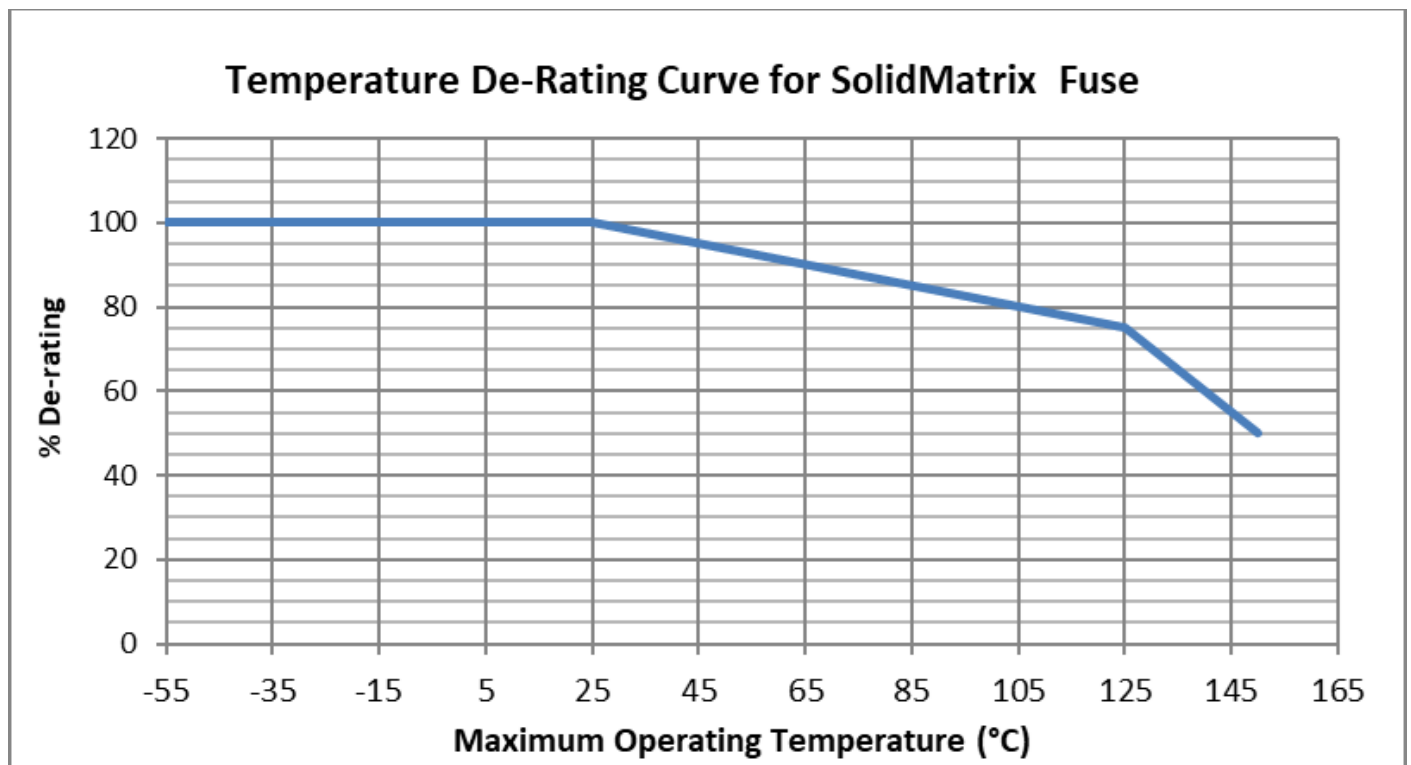
Fuse Selection and Temperature De-rating Guideline:

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.

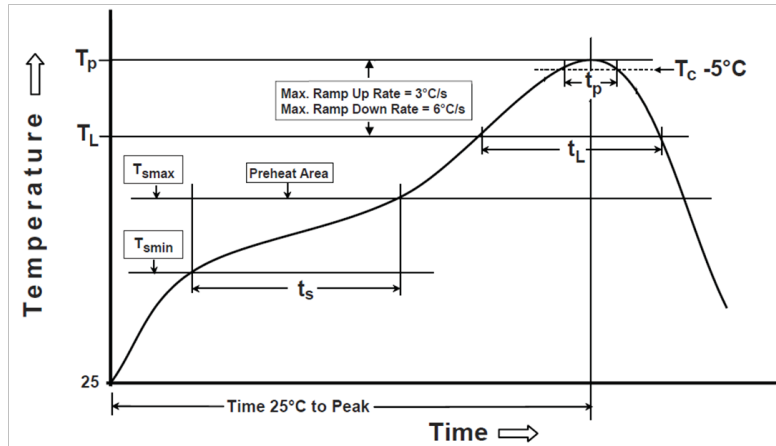
Example: At maximum operating temperature of 65°C, % De-rating is 90%. The nominal operating current is 4 A. The current rating for fuse selected from the catalog shall be: $4 / 0.75 / 90\% = 5.9$ or 6 A. Specifications and descriptions in this literature are as accurate as known at the time of publish, but are subject to change without notice.



SolidMatrix® Surface Mount Fuses

Soldering Temperature Profile:

* Recommended Temperature Profile for Reflow Soldering



Profile Feature	Pb-Free Assembly
Preheat/Soak Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60~120 seconds
Ramp-up rate (T_L to T_p)	3°C/second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 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 (T_p) is defined as a supplier minimum and a user maximum	

* Recommended Temperature Profile for Wave Soldering

Recommended Temperature Profile for Wave Soldering



Notice: Wave Soldering is suitable for 1206 and 0603 size.

Packaging:

Chip Size	Parts on 7 inch (178 mm) Reel
0402 (1005)	10,000
0603 (1608)	4,000
0603FF (1608)	6,000
1206 (3216)	3,000

Disclaimer

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