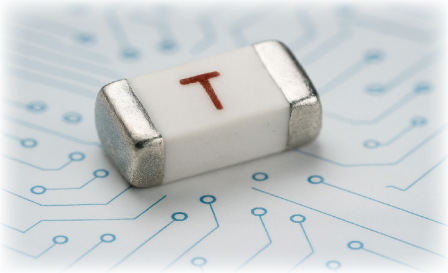
HRF0603SB SolidMatrix Surface Mount Fuse (Slow Blow, 0603 Size)



Applications

- Satellite/Spacecraft
- Aerospace
- Avionics
- Military
- Telecom DC/DC power
- Drones
- Battery and BMS
- PDU

Features

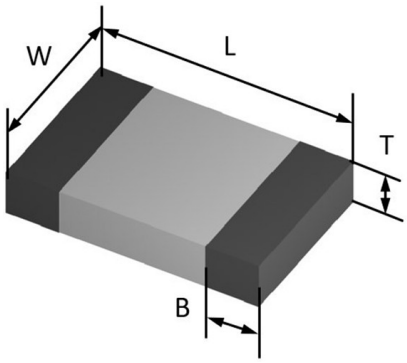
- Tin/Lead (Sn/Pb) solder plated terminals.
- High inrush current withstanding capability.
- Single small case size for current rating from 1A to 8A.
- Ceramic monolithic body structure.
- Silver fusing element and silver termination with Ni and Sn/Pb solder plating.
- Symmetrical design and reliable functionality throughout prolonged use.

Product Dimensions

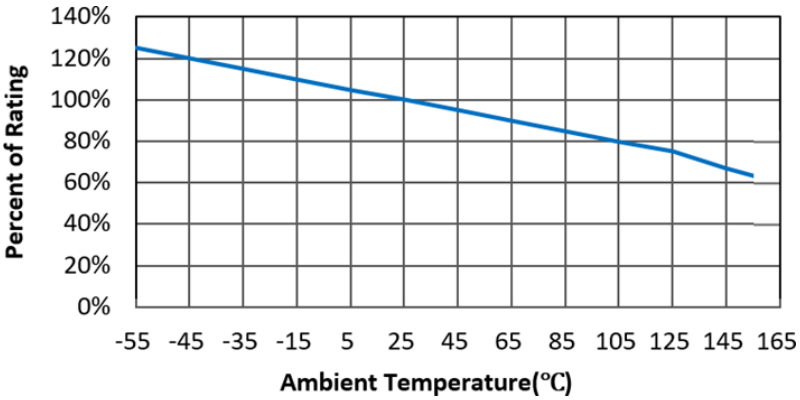
Dimension	Inch	mm
L	0.063 ± 0.006	1.60 ± 0.15
W	0.031 ± 0.006	0.80 ± 0.15
T	0.031 ± 0.006	0.80 ± 0.15
B	0.014 ± 0.006	0.36 ± 0.15

Clearing Time Characteristics

% Of Current Rating	Clearing Time @25°C	
	Min.	Max.
100%	4 hours	-
200%	1 second	120 seconds
300%	0.1 seconds	3 seconds
800% (1 A - 1.5 A)	0.0005 seconds	0.05 seconds
800% (2 A - 8 A)	0.001 seconds	0.05 seconds

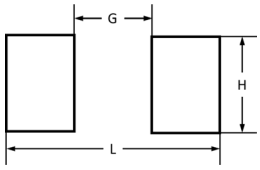


Derating Curve



Recommended Land Pattern

Dimension	0603	Unit
L	0.087 (2.20)	Inch (mm)
G	0.031 (0.80)	Inch (mm)
H	0.039 (1.00)	Inch (mm)



Certified to AS9100D ISO 9001:2015

MIL-STD-790

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Electrical Characteristics

Part Number	Voltage Rating (VDC)	Current Rating (Amps)	Interrupting Rating	Nominal Cold DCR (Ω)/1	Nominal I^2t (A^2s)/2	Marking Code/3
HRF0603SB1000V032Tx	32	1.0	50A at rated voltage	0.200	0.093	E
HRF0603SB1500V032Tx	32	1.5		0.100	0.180	G
HRF0603SB2000V032Tx	32	2.0		0.052	0.320	I
HRF0603SB2500V032Tx	32	2.5		0.041	0.630	J
HRF0603SB3000V032Tx	32	3.0		0.031	0.870	K
HRF0603SB3500V032Tx	32	3.5		0.021	1.20	L
HRF0603SB4000V032Tx	32	4.0		0.017	2.30	M
HRF0603SB4500V032Tx	32	4.5		0.015	2.70	T
HRF0603SB5000V032Tx	32	5.0		0.013	3.20	N
HRF0603SB6000V032Tx	32	6.0	80A at rated voltage	0.010	4.00	O
HRF0603SB7000V032Tx	32	7.0		0.008	5.00	P
HRF0603SB8000V032Tx	32	8.0		0.006	7.00	R

1- Measured at ≤10% rated current and 25°C ambient. *2- Melting I^2t at 0.001 Second pre-arcing time.* *3- Red marking code*

Part Number Identifier

HRF 0603 SB 1000 V032 T x

- HRF Series Fuse — Series Code: HRF Series Fuse
- 0603 — Size Code: L x W (inch), the first two digits - L (length), the last two digits - W (width)
- SB — Characteristic Code: (SB) Slow Blow
- 1000 — Current Rating: 1000=1 Amp
- V032 — Voltage Rating Code: V032 = 32 Volts
- T — T= Tape and Reel
- x — Screening Option: 1 or 2 or 3

Standard Screening Options:

1- Standard 100% Visual Inspection per MIL-PRF-23419/14, AS9102 FAIR, MIL-STD-1580 DPA.
2- Option 2: Group A and B Screening per MIL-PRF-23419/14, AS9102 FAIR, MIL-STD-1580 DPA (see AEM Detail Specification for more details).
3- Option 3: Group A, B, and C Screening per MIL-PRF-23419/14, AS9102 FAIR, MIL-STD-1580 DPA (see AEM Detail Specification for more details).

Termination :

Tin/Lead (Sn/Pb)

General Specification:

1- Operating temperature: -55°C to +150°C (With de-rating).
2- Storage Temperature: -55°C to +150°C.
3- Moisture sensitivity level: MSL=1.

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MIL-STD-790

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Reliability Tests:

No.	Item	Condition	Criteria
1	Bend	2 mm bend	DCR change within ±20%. (±10% for ≤1A), no mechanical damage
2	Solderability	245°C, 5 seconds	New solder coverage ≥95%
3	Soldering Heat Resistance	260°C, 60 seconds	DCR change within ±10%, new solder coverage 75% minimum, no mechanical damage
4	Terminal Strength	Gradually apply 0.5 kg force to the side of the part for 60 seconds	DCR change within ±10%, no mechanical damage
5	Life	80% rated current (75% for <1A), 2000 hours, ambient temperature +20°C to +30°C	Voltage drop change within ±10%
6	Thermal Shock	-65°C to +150°C, 100 cycles	DCR change within ±10%, no mechanical damage
7	Mechanical Vibration	5 – 3000 Hz, 0.4 inch double amplitude or 30 G peak	DCR change within ±10%, no mechanical damage
8	Mechanical Shock	1500 G, 0.5 milliseconds, half-sine shocks	DCR change within ±10%, no mechanical damage
9	Salt Spray	5% salt solution, 48 hours exposure	DCR change within ±10%, no excessive corrosion
10	Moisture Resistance	10 cycles	DCR change within ±10%, no excessive corrosion

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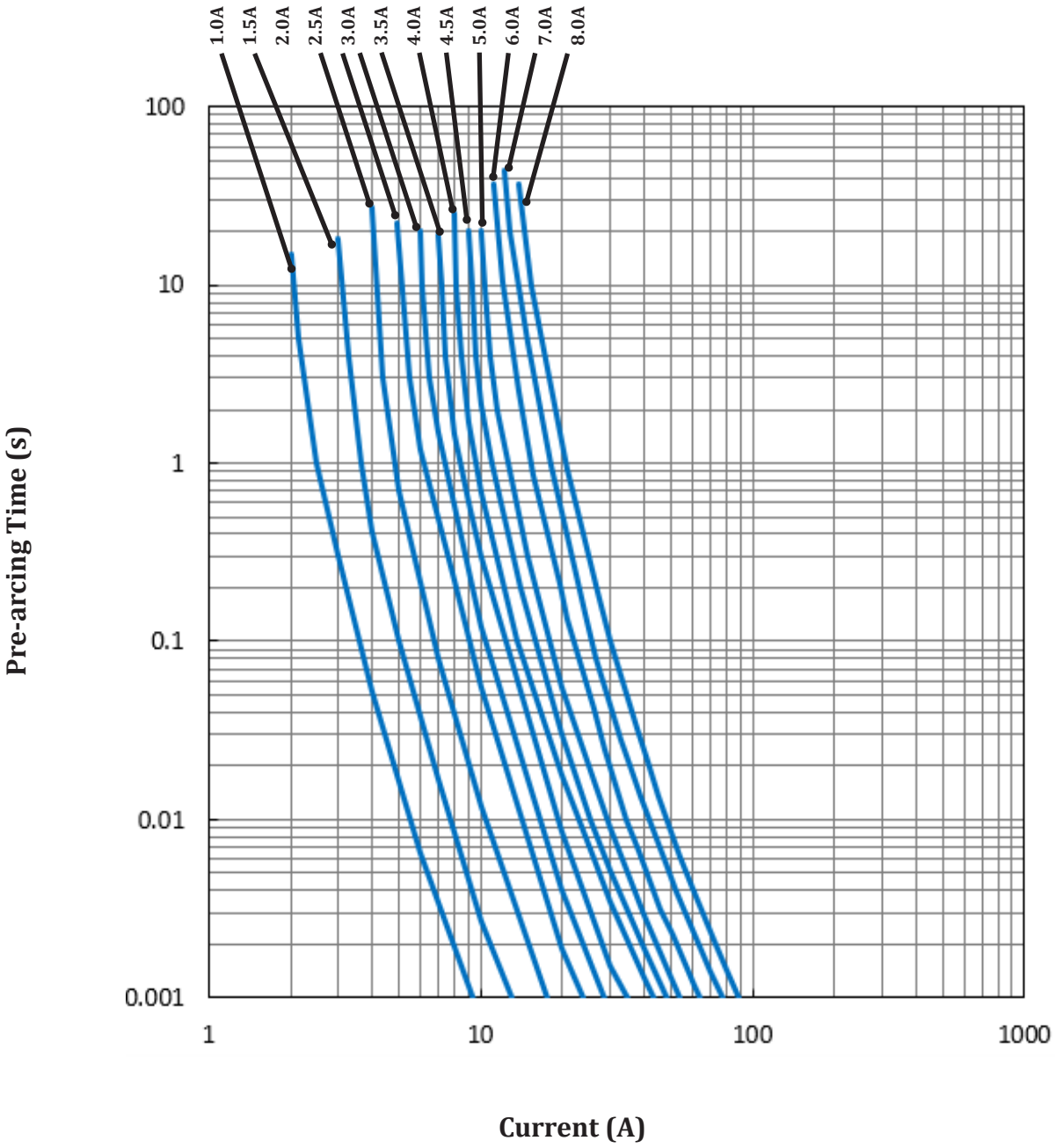
Average Pre-arcing Time Curves



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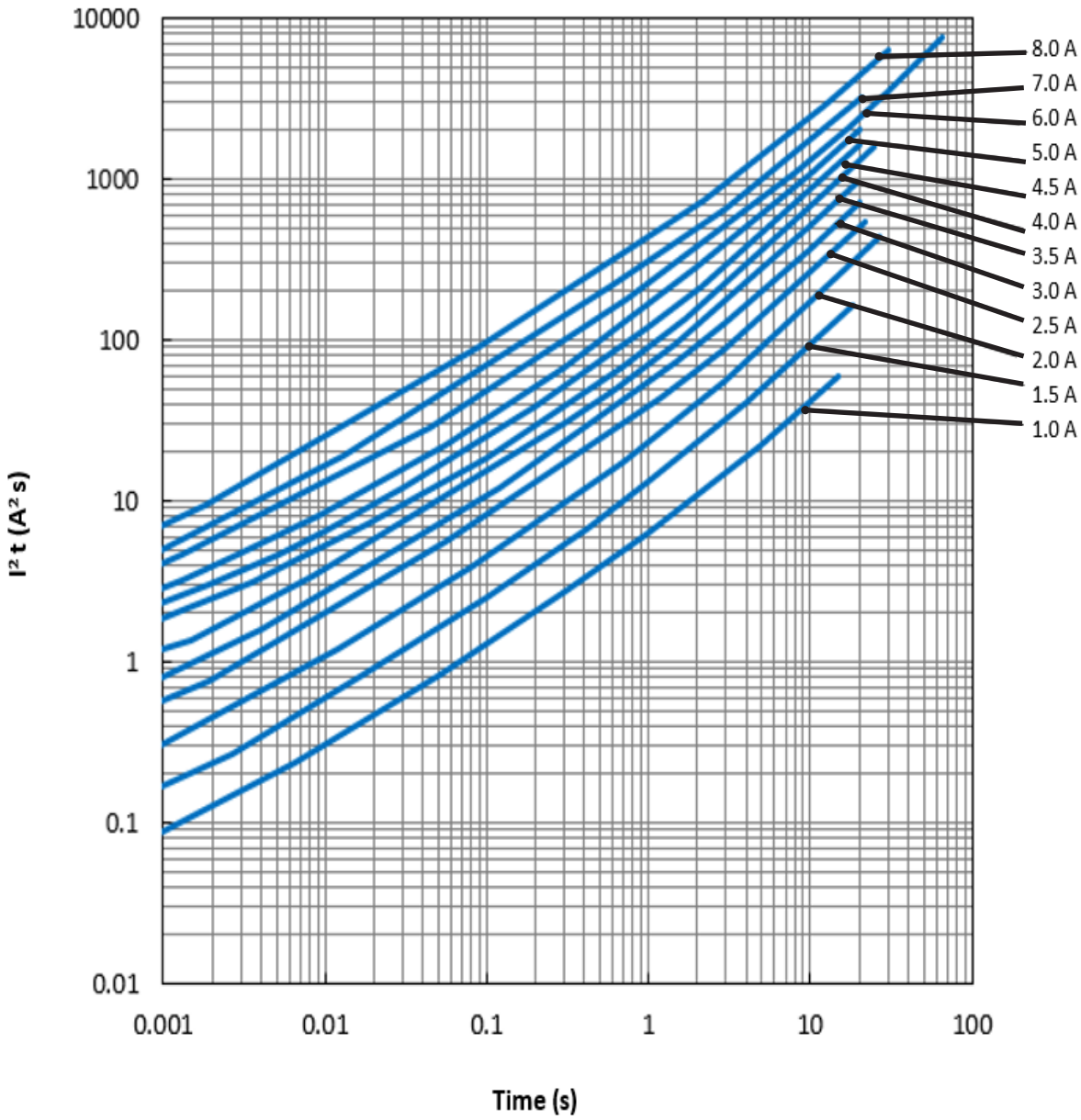
Average I²t vs. t Curves