

Accu-Guard® II

SMD Thin-Film Fuse



Accu-Guard® II is a version of Accu-Guard® fuses for a wider range of current and voltage ratings. Constructed on alumina substrates, Accu-Guard® II fuses display superior electrical, mechanical and environmental properties. Accu-Guard® II dimensions are standard 0402, 0603, 0805, 1206 and 0612 chip sizes, see page 2.

For F1206B and F0805B at -55°C is 107% of rating, at +25°C 100% of rating, at +85°C 93% of rating, at +125°C 90% of rating. For F0805B 2.50A and 3.00A at +85°C 90% of rating, at +125°C 90% of rating.

Interrupting rating: 50A.
Insulation resistance: >20MΩ guaranteed (after fusing at rated voltage).

ELECTRICAL SPECIFICATIONS

Operating temperature: -55°C to +125°C

Current carrying capacity:

For F0402E and F0603E at -55°C 107% of rating, at +25°C 100% of rating, at +125°C 80% of rating.

For F0612D at -55°C 107% of rating, at +25°C 100% of rating, at +85°C 80% of rating, at +125°C 75% of rating.

| Type | Part Number | Current Rating A | Resistance 10% x I rated, 25°C Ω (max.) | Voltage Drop @1 x I rated, 25°C mV (max.) | Fusing Current (within 5 sec), 25°C A | Pre-Arc I ² t @ 50A A ² -sec | Rated Voltage V |
|------------------|------------------|---------------------|---|---|--|--|-----------------------|
| F0402E | F0402E0R25FSTR | 0.25 | 0.650 | 220 | 0.625 | 0.00005* | 32 |
| | F0402E0R50FSTR | 0.50 | 0.250 | 180 | 1.25 | 0.0003 | 32 |
| | F0402E0R75FSTR | 0.75 | 0.200 | 180 | 1.875 | 0.003 | 32 |
| | F0402E1R00FSTR | 1.00 | 0.130 | 160 | 2.50 | 0.008 | 32 |
| | F0402E1R50FSTR | 1.50 | 0.060 | 140 | 3.75 | 0.03 | 32 |
| | F0402E2R00FSTR | 2.00 | 0.040 | 120 | 5.00 | 0.06 | 32 |
| F0603E | F0603E0R25FSTR | 0.25 | 0.650 | 220 | 0.625 | 0.00005* | 32 |
| | F0603E0R37FSTR | 0.375 | 0.450 | 220 | 0.940 | 0.0001 | 32 |
| | F0603E0R50FSTR | 0.50 | 0.250 | 180 | 1.25 | 0.0003 | 32 |
| | F0603E0R75FSTR | 0.75 | 0.200 | 180 | 1.875 | 0.003 | 32 |
| | F0603E1R00FSTR | 1.00 | 0.130 | 160 | 2.50 | 0.008 | 32 |
| | F0603E1R25FSTR | 1.25 | 0.090 | 140 | 3.125 | 0.01 | 32 |
| | F0603E1R50FSTR | 1.50 | 0.060 | 140 | 3.75 | 0.03 | 32 |
| | F0603E1R75FSTR | 1.75 | 0.050 | 120 | 4.375 | 0.04 | 32 |
| | F0603E2R00FSTR | 2.00 | 0.040 | 120 | 5.00 | 0.06 | 32 |
| | F0603E2R50FSTR | 2.50 | 0.035 | 100 | 6.25 | 0.12 | 32 |
| F0603E3R00FSTR | 3.00 | 0.030 | 100 | 7.50 | 0.25 | 32 | |
| F0805B | F0805B0R25FW/STR | 0.25 | 0.750 | 280 | 0.50 | 0.00003* | 63 |
| | F0805B0R50FW/STR | 0.50 | 0.350 | 280 | 1.00 | 0.0002 | 63 |
| | F0805B0R75FW/STR | 0.75 | 0.270 | 280 | 1.50 | 0.001 | 63 |
| | F0805B1R00FW/STR | 1.00 | 0.220 | 280 | 2.00 | 0.003 | 63 |
| | F0805B1R25FW/STR | 1.25 | 0.170 | 280 | 2.50 | 0.007 | 63 |
| | F0805B1R50FW/STR | 1.50 | 0.120 | 240 | 3.00 | 0.010 | 63 |
| | F0805B2R00FW/STR | 2.00 | 0.080 | 220 | 4.00 | 0.030 | 63 |
| | F0805B2R50FW/STR | 2.50 | 0.060 | 220 | 5.00 | 0.050 | 63 |
| F0805B3R00FW/STR | 3.00 | 0.050 | 220 | 6.00 | 0.10 | 63 | |
| F1206B | F1206B0R25FW/STR | 0.25 | 0.750 | 280 | 0.50 | 0.00003 | 63 |
| | F1206B0R50FW/STR | 0.50 | 0.350 | 280 | 1.00 | 0.0002 | 63 |
| | F1206B1R00FW/STR | 1.00 | 0.180 | 240 | 2.00 | 0.003 | 63 |
| | F1206B1R50FW/STR | 1.50 | 0.120 | 240 | 3.00 | 0.010 | 63 |
| | F1206B2R00FW/STR | 2.00 | 0.080 | 220 | 4.00 | 0.030 | 63 |
| | F1206B3R00FW/STR | 3.00 | 0.050 | 220 | 6.00 | 0.10 | 63 |
| F0612D | F0612D4R00FWTR | 4.00 | 0.040 | 260 | 10 | 0.10 | 32 |
| | F0612D5R00FWTR | 5.00 | 0.025 | 200 | 12.5 | 0.25 | 32 |

*Current is limited to less than 50A at 32V due to internal fuse resistance.



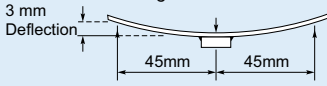
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ENVIRONMENTAL CHARACTERISTICS

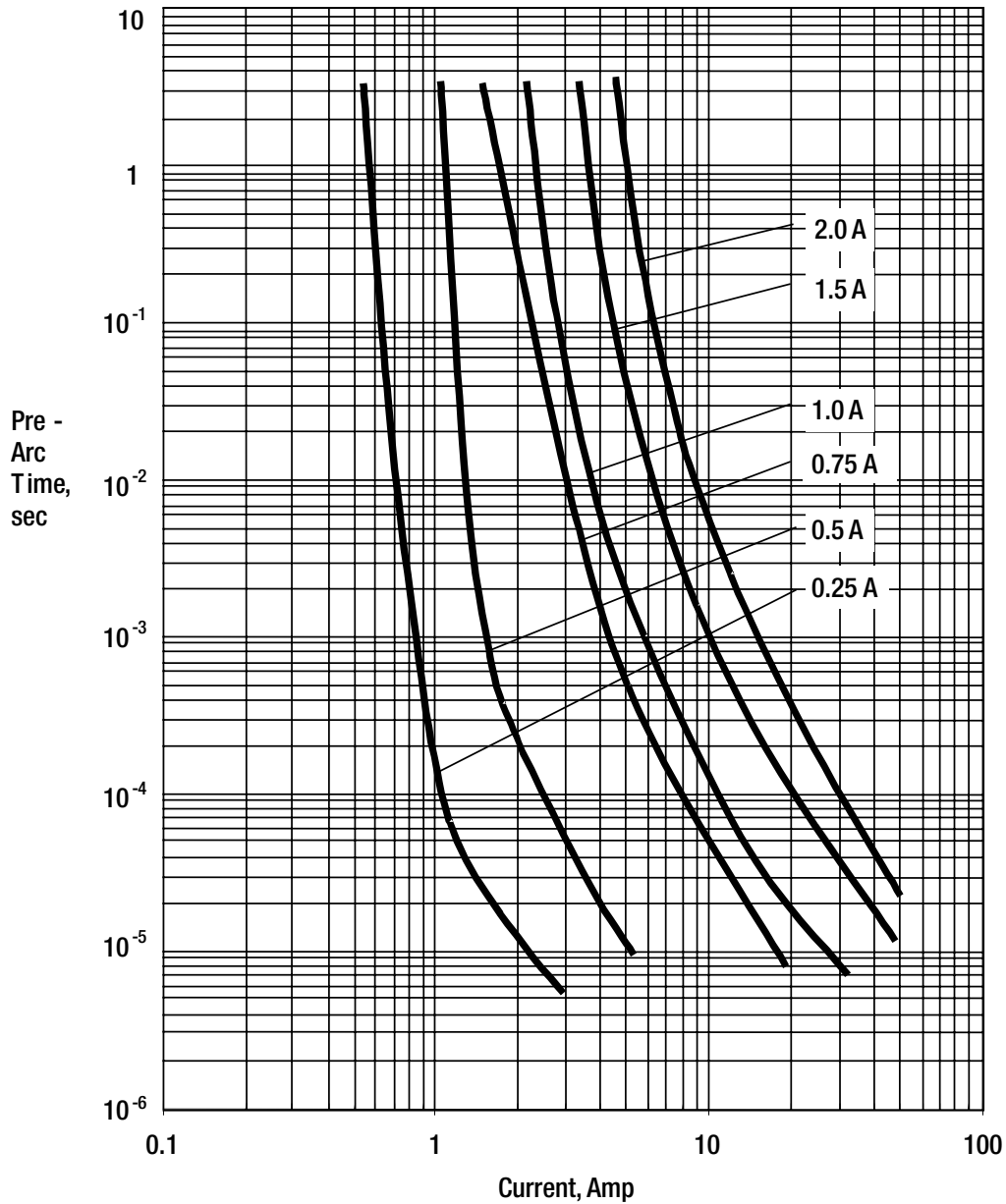
| Test | Conditions | Required |
|-----------------------------|--|--|
| Solderability | Components completely immersed in a solder bath at 235 ±5°C for 2 secs. | Terminations to be well tinned No visible damage |
| Leach Resistance | Completely immersed in a solder bath at 260 ±5°C for 60 secs | Dissolution of termination ≤ 25% of area ΔR/R<10% |
| Storage | 12 months minimum with components stored in "as received" packaging. | Good solderability |
| Shear | Components mounted to a substrate. A force of 5N applied normal to the line joining the terminations and in a line parallel to the substrate | No visible damage |
| Rapid Change of Temperature | Components mounted to a substrate. 50 cycles -55° to +125°C. | No Visible damage ΔR/R<10% |
| Temperature Cycling | Components mounted to substrate. 50 cycles -55°C to +125°C. | No Visible damage ΔR/R<10% |
| Vibration | Components mounted to substrate. 50 cycles -55°C to +125°C. | No Visible damage ΔR/R<10% |
| Bend | Tested as shown in diagram  | No visible damage ΔR/R<10% |
| Load Life F0805B, F1206B | 25°C, rated current, 20,000 hrs. | No visible damage ΔR/R<10% |

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Lead-Free SMD Thin-Film Fuse



FUSE TIME – CURRENT CHARACTERISTICS FOR TYPE F0402E (TYPICAL)



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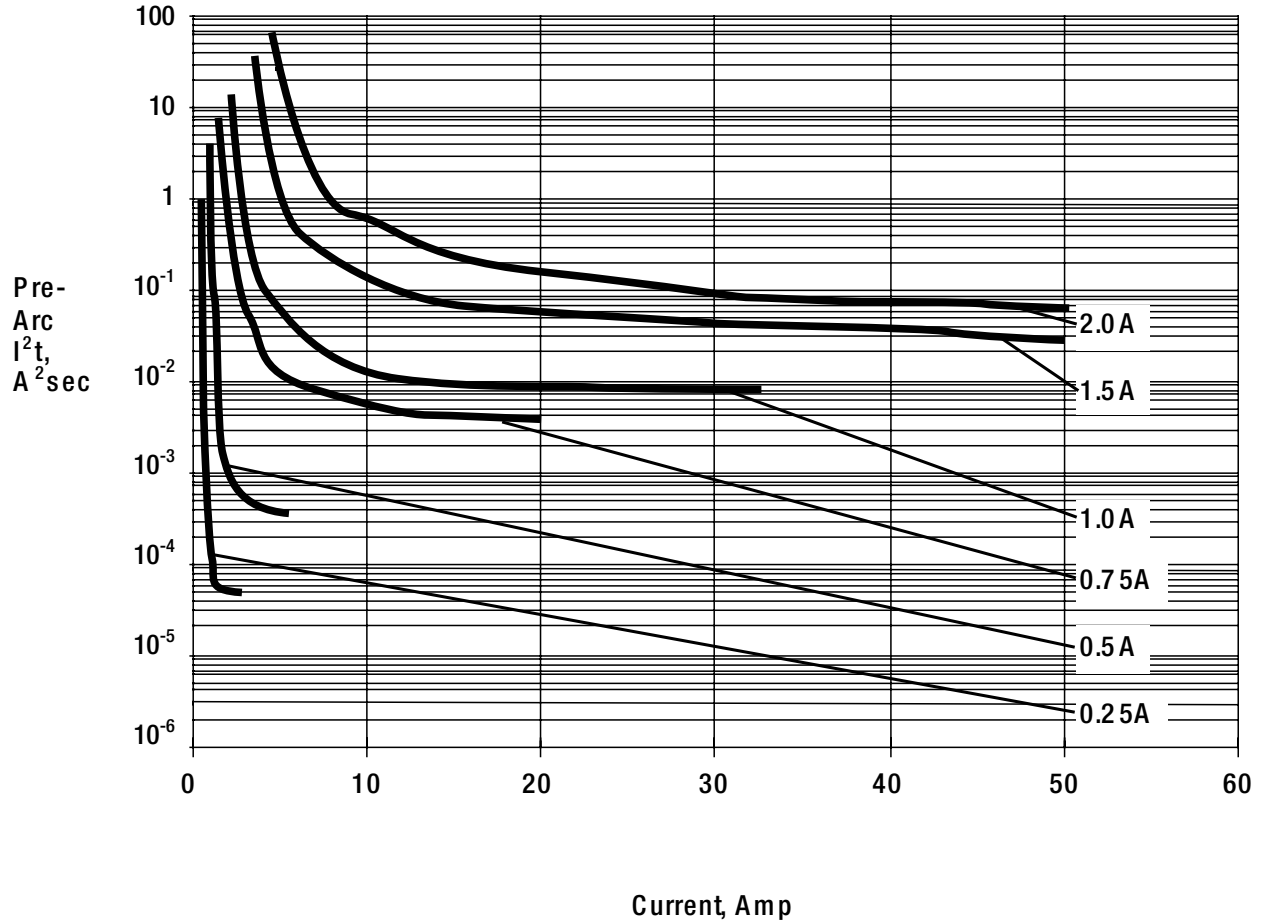
TDS-FUSE-0001 | Rev 2

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Lead-Free SMD Thin-Film Fuse



FUSE PRE-ARC JOULE INTEGRALS VS CURRENT FOR TYPE F0402E (TYPICAL)

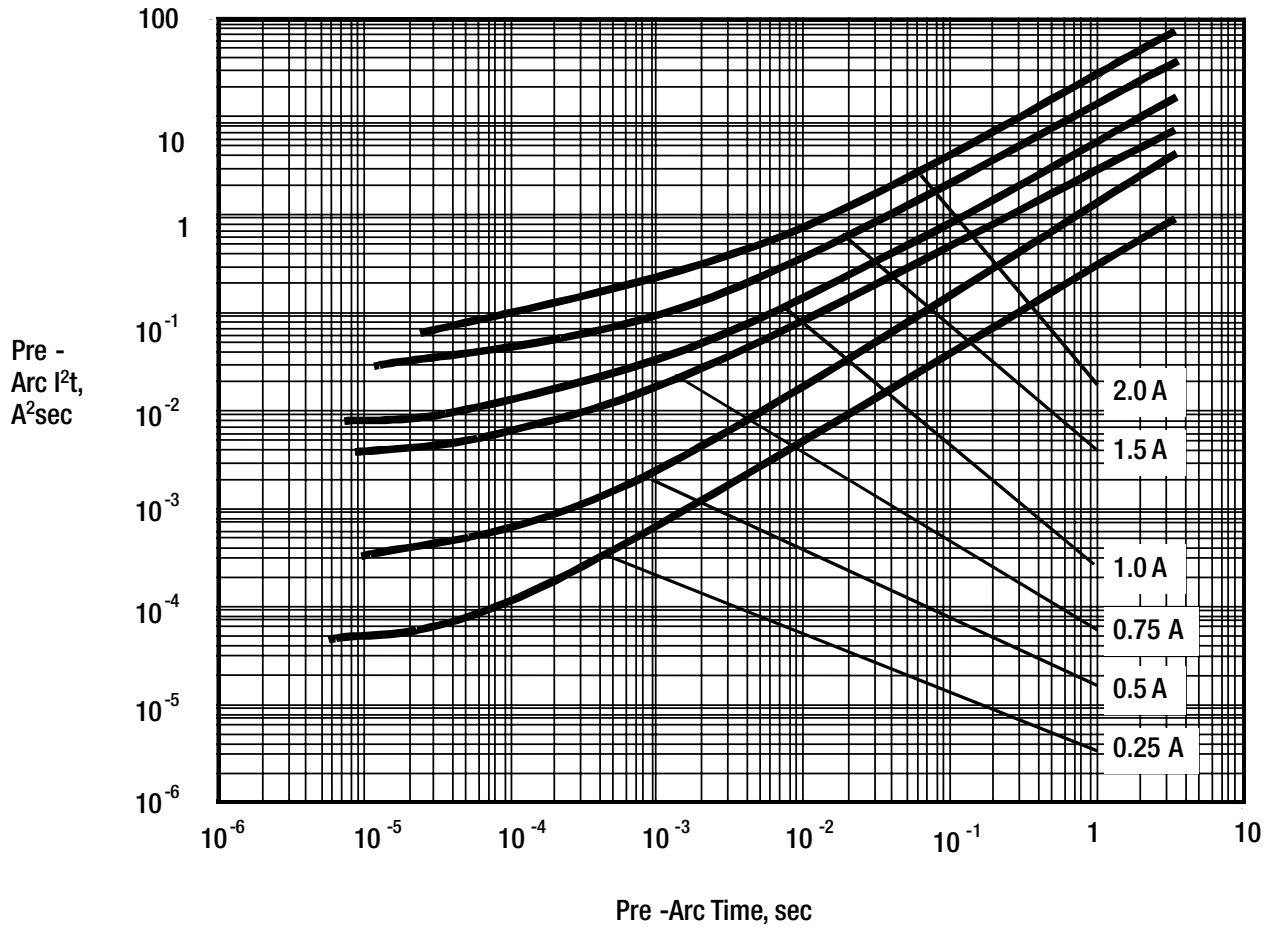


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FUSE PRE-ARC JOULE INTEGRALS VS PRE-ARC TIME FOR TYPE F0402E (TYPICAL)

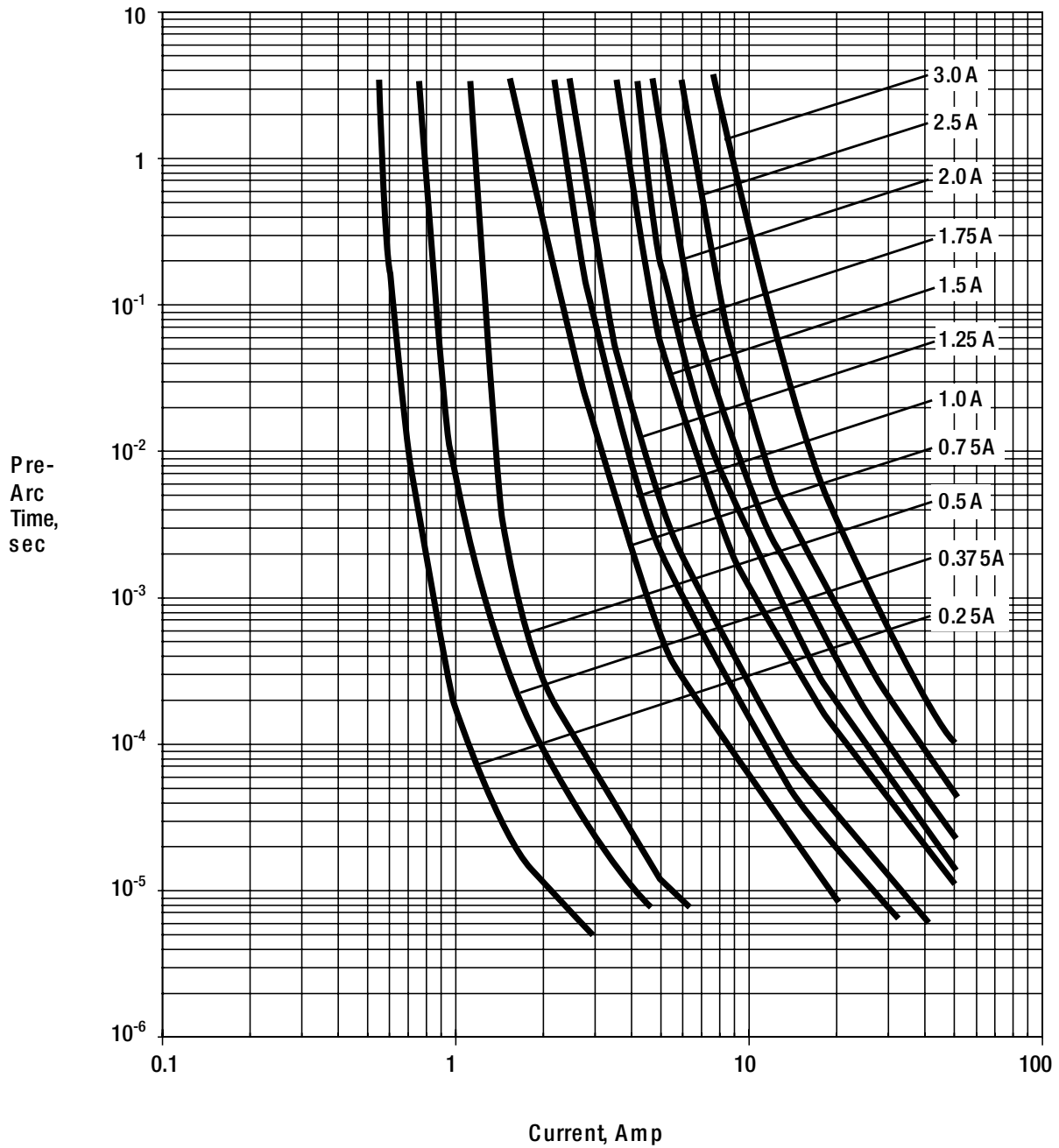


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Lead-Free SMD Thin-Film Fuse



FUSE TIME – CURRENT CHARACTERISTICS FOR TYPE F0603E (TYPICAL)



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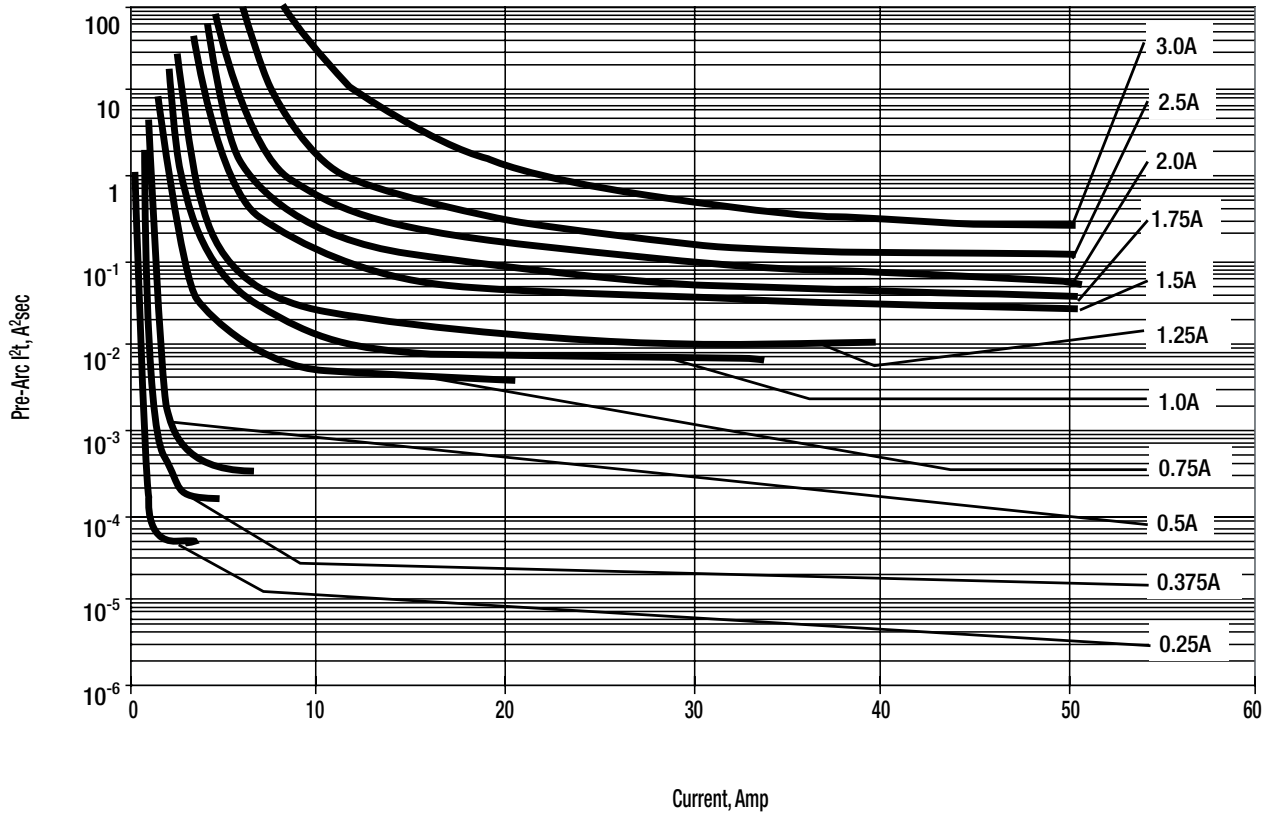
TDS-FUSE-0001 | Rev 2

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Lead-Free SMD Thin-Film Fuse



FUSE PRE-ARC JOULE INTEGRALS VS CURRENT FOR TYPE F0603E (TYPICAL)

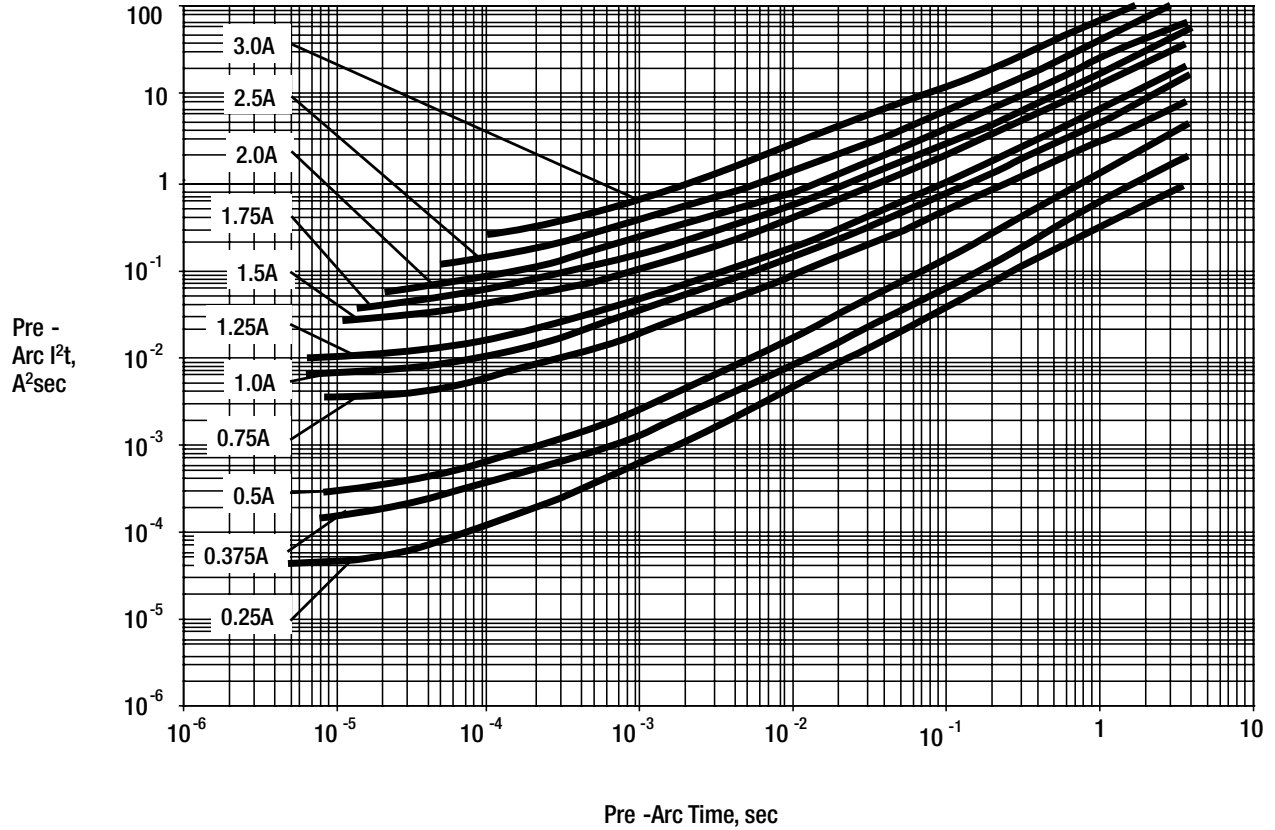


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FUSE PRE-ARC JOULE INTEGRALS VS PRE-ARC TIME FOR TYPE F0603E (TYPICAL)



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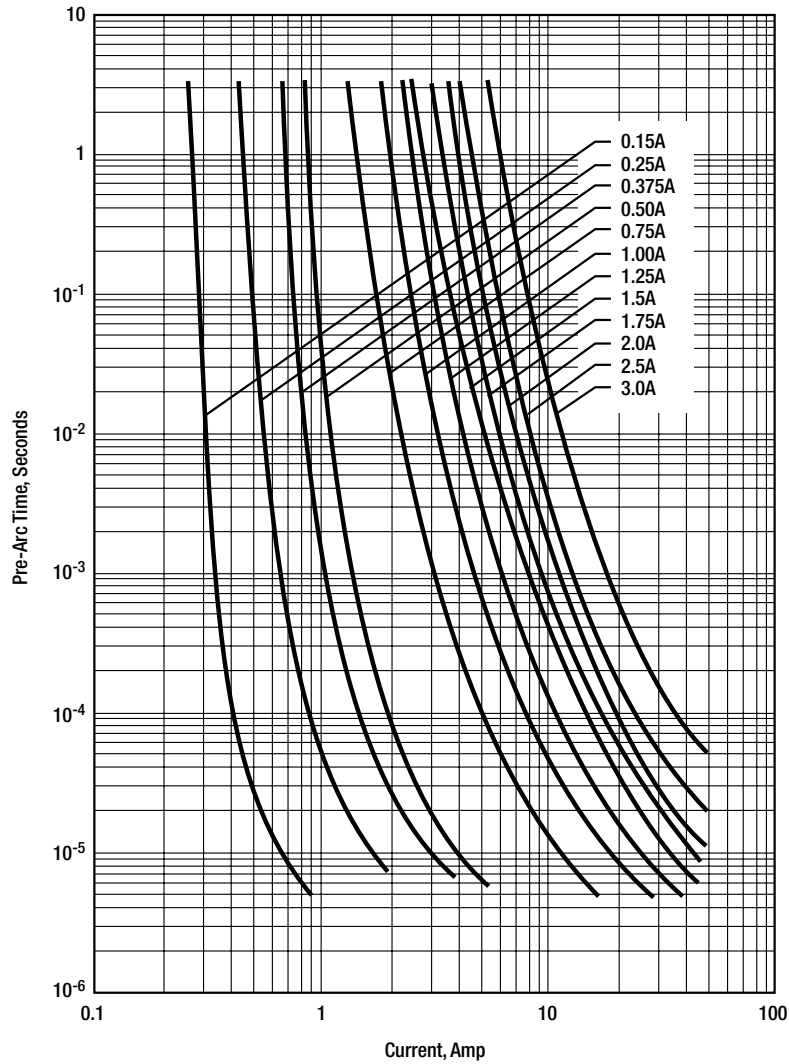
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FUSE TIME - CURRENT CHARACTERISTICS FOR TYPES F0805B AND F1206B (TYPICAL)

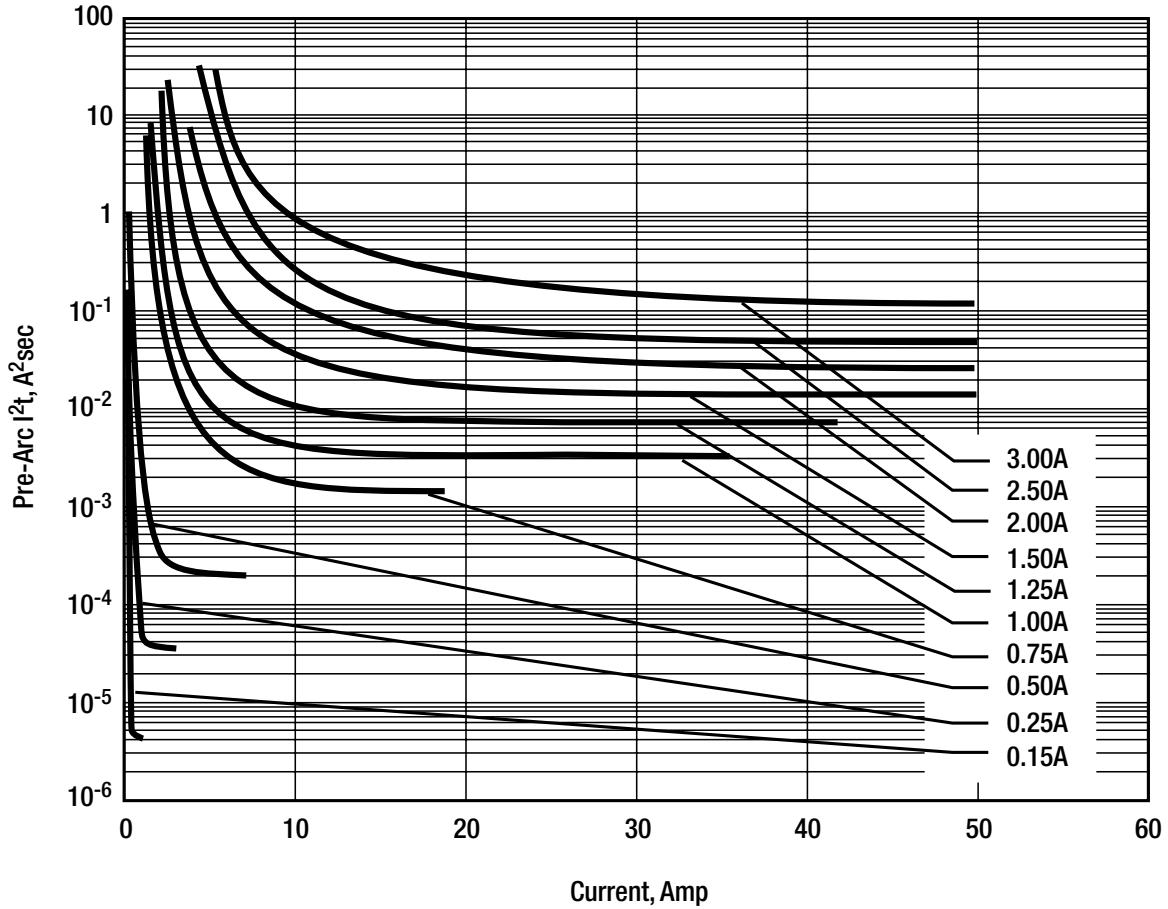


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FUSE PRE-ARC JOULE INTEGRALS VS. CURRENT TIME FOR TYPES F0805B AND F1206B (TYPICAL)

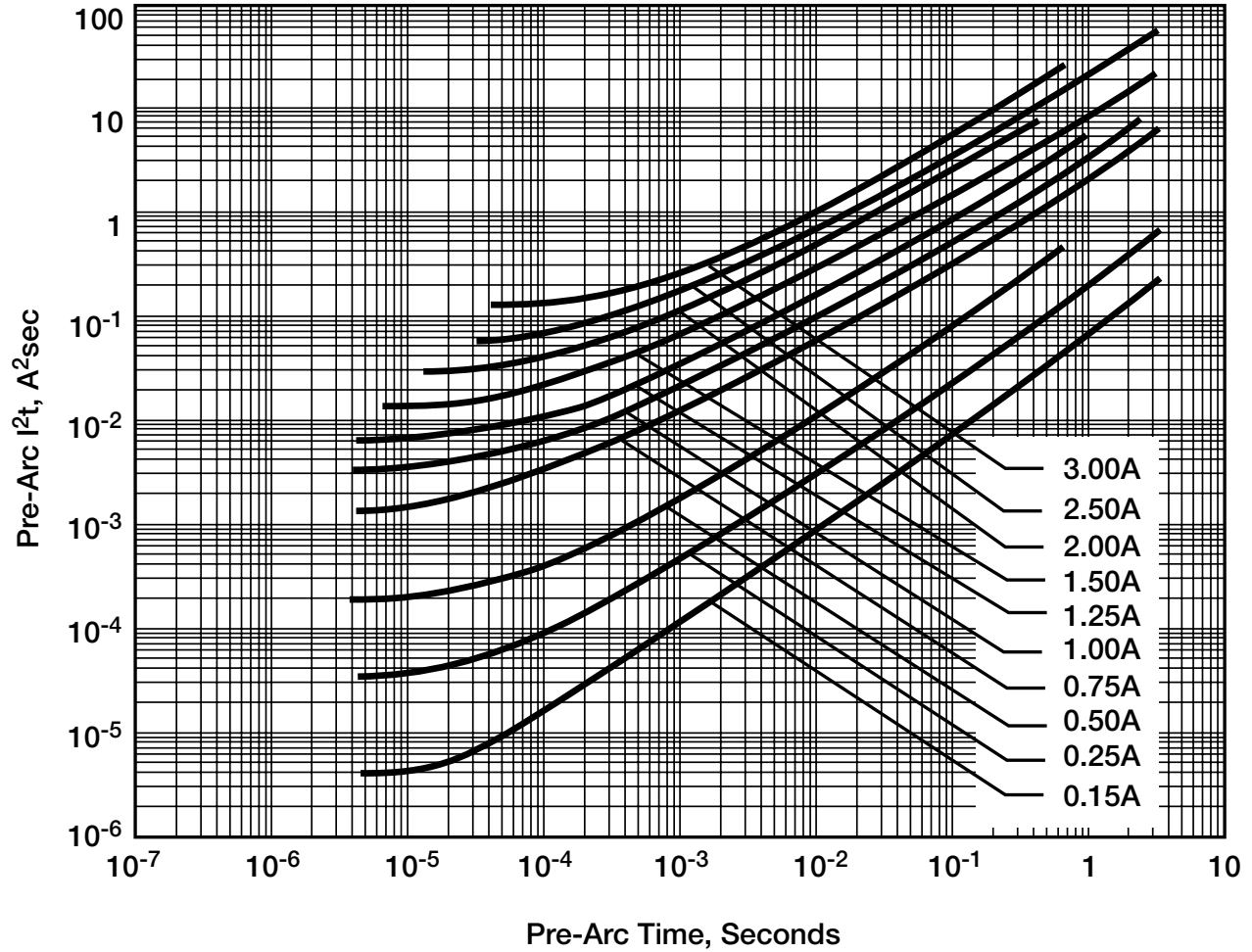


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FUSE PRE-ARC JOULE INTEGRALS VS. PRE-ARC TIME FOR TYPES F0805B AND F1206B (TYPICAL)



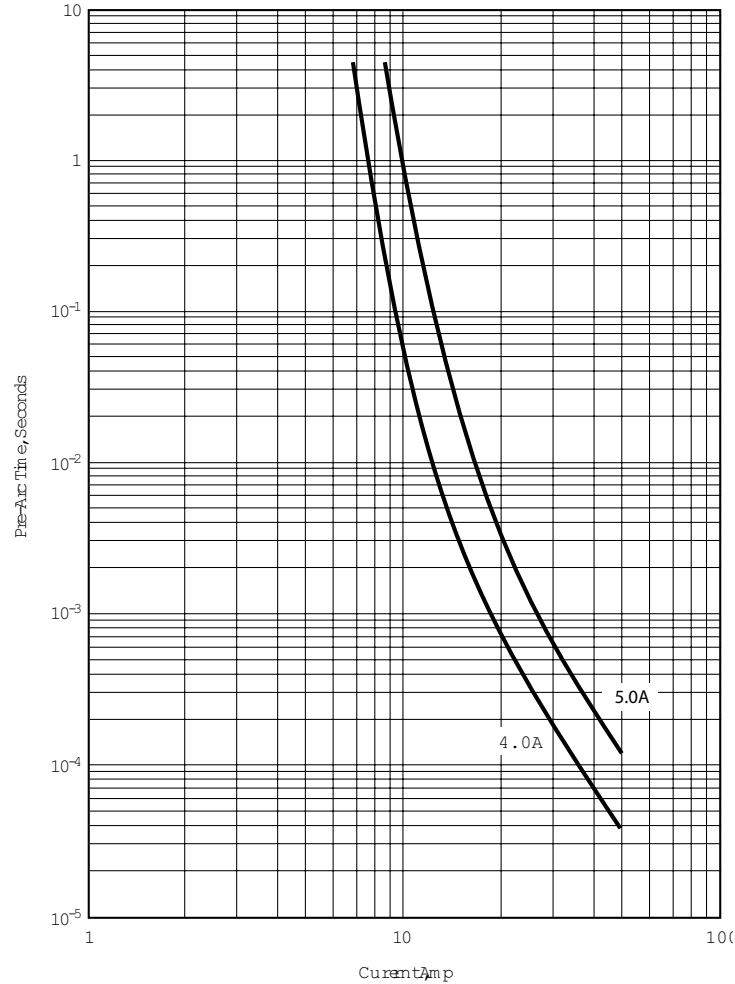
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FUSE TIME - CURRENT CHARACTERISTICS FOR TYPE F0612D (TYPICAL)*

***Not recommended for new designs, please contact factory**



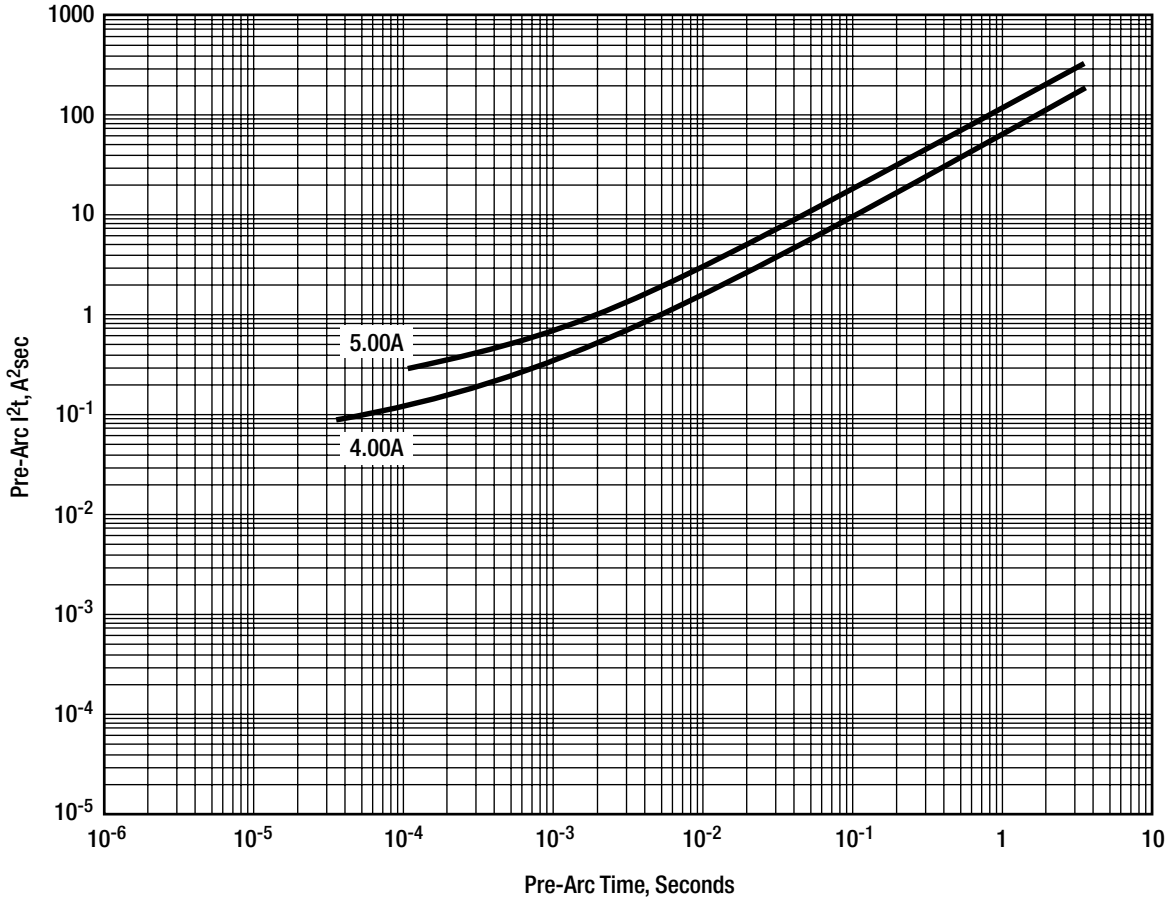
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FUSE PRE-ARC JOULE INTEGRALS VS. PRE-ARC TIME FOR TYPE F0612D (TYPICAL)*

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SMD Thin-Film Fuse



FUSE PRE-ARC JOULE INTEGRALS VS. CURRENT FOR TYPE F0612D (TYPICAL)

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