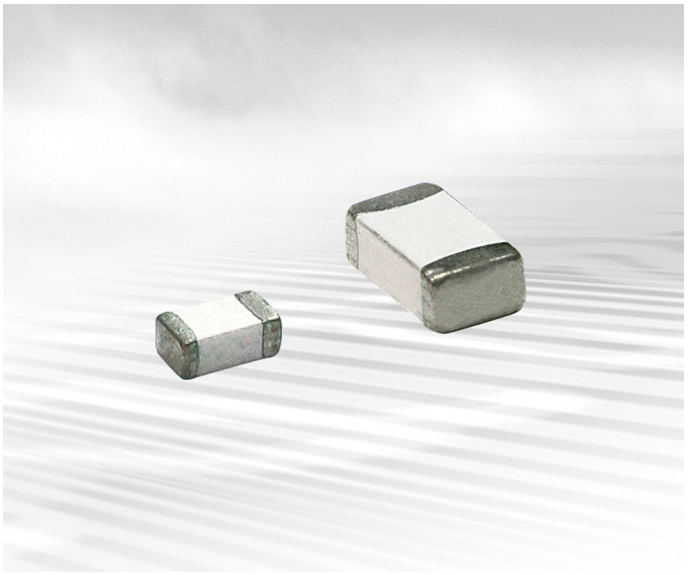
# SURFACE-MOUNT FUSES
## Slow-Blow Chip Fuses

Littelfuse®
Expertise Applied | Answers Delivered

Available in industry standard 1206 and 0603 chip sizes, Littelfuse slow-blow chip fuses help provide overcurrent protection on systems that experience large and frequent current surges as part of their normal operation.

The slow-blow chip fuse's monolithic, multilayer design helps provide some of the highest current ratings available in the 1206 and 0603 footprints and enhances high-temperature performance in a wide range of circuit protection designs. The devices' small size, high reliability and strong arc suppression characteristics make them suitable for overcurrent protection of power supplies, capacitor filter banks, Liquid Crystal Display (LCD) backlight inverters, electric motors and portable electronics.



### BENEFITS

- Time-delayed design prevents nuisance openings in pulsed and high inrush current applications
- Small size with high-current ratings
- Strong arc suppression characteristics

### FEATURES

- Lead-free materials and RoHS compliant
- Halogen free
  (refers to: Br≥900ppm, Cl≥900ppm, Br+Cl≥1500ppm)
- Monolithic multilayer design
- High-temperature performance
- -55°C to +125°C operating temperature range

### APPLICATIONS

- Small motors systems
- Portable electronics
- Input power ports
- Power over Ethernet (PoE)
- Test equipment
- POL converter protection
- Computer drives
- Displays
- Printers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# Surface Mount Fuses
## Slow-Blow Chip Fuses

## Table FS1 — Clear Time Characteristics

**0603SFS Series**

| % of Rated Current | Clear Time at 25°C | |
|---|---|---|
| 100% | 4 hrs (min) | — |
| 200% | 1 s (min) | 120 s (max) |
| 300% | 0.1 s (min) | 3 s (max) |
| 800% (1.0A-1.5A) | 0.0005 s (min) | 0.05 s (max) |
| 800% (2.0A-5.0A) | 0.001 s (min) | 0.05 s (max) |

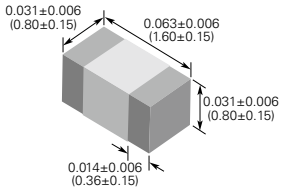
**1206SFS Series**

| % of Rated Current | Clear Time at 25°C | |
|---|---|---|
| 100% | 4 hrs (min) | — |
| 200% | 1 s (min) | 120 s (max) |
| 300% | 0.1 s (min) | 3 s (max) |
| 800% (1.0A-1.5A) | 0.0016 s (min) | 0.05 s (max) |
| 800% (2.0A-8.0A) | 0.002 s (min) | 0.05 s (max) |

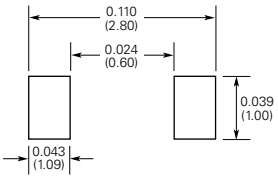
## Table FS2 — Typical Electrical Characteristics, Dimensions and Recommended Pad Layout

### 0603 (1608 mm) Slow-Blow Chip Fuses

**Shape and Dimensions** in (mm)



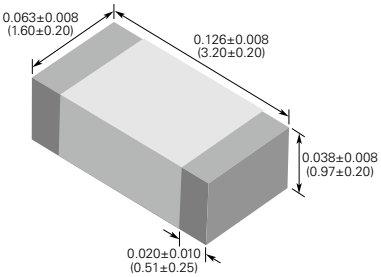

**Recommended Pad Layout** in (mm)



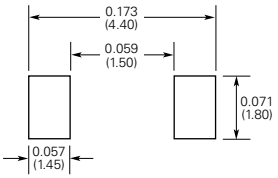

| Part Number | Typical Electrical Characteristics: Rated Current (A) | Nominal Cold DCR (Ω)* | Nominal I²t (A²sec)† | Max Interrupt Ratings: Voltage ($V_{DC}$) | Current (A) |
|---|---|---|---|---|---|
| 0603SFS100F/32 | 1.0 | 0.200 | 0.093 | 32 | 50 |
| 0603SFS150F/32 | 1.5 | 0.100 | 0.18 | 32 | 50 |
| 0603SFS200F/32 | 2.0 | 0.052 | 0.32 | 32 | 50 |
| 0603SFS250F/32 | 2.5 | 0.041 | 0.63 | 32 | 50 |
| 0603SFS300F/32 | 3.0 | 0.031 | 0.87 | 32 | 50 |
| 0603SFS350F/32 | 3.5 | 0.021 | 1.20 | 32 | 50 |
| 0603SFS400F/32 | 4.0 | 0.017 | 2.30 | 32 | 50 |
| 0603SFS450F/32 | 4.5 | 0.015 | 2.70 | 32 | 50 |
| 0603SFS500F/32 | 5.0 | 0.013 | 3.20 | 32 | 50 |
| PSR-27781 | 6.0 | 0.010 | 4.00 | 32 | 80 |
| PSR-27893 | 7.0 | 0.008 | 5.00 | 32 | 80 |
| PSR-28024 | 8.0 | 0.006 | 7.00 | 32 | 80 |

### 1206 (3216 mm) Slow-Blow Chip Fuses

**Shape and Dimensions** in (mm)




**Recommended Pad Layout** in (mm)




| Part Number | Typical Electrical Characteristics: Rated Current (A) | Nominal Cold DCR (Ω)* | Nominal I²t (A²sec)† | Max Interrupt Ratings: Voltage ($V_{DC}$) | Current (A) |
|---|---|---|---|---|---|
| 1206SFS100F/63 | 1.0 | 0.360 | 0.11 | 63 | 50 |
| 1206SFS125F/63 | 1.25 | 0.200 | 0.22 | 63 | 50 |
| 1206SFS150F/63 | 1.5 | 0.150 | 0.23 | 63 | 50 |
| 1206SFS200F/63 | 2.0 | 0.088 | 0.63 | 63 | 50 |
| 1206SFS250F/32 | 2.5 | 0.065 | 0.90 | 32 | 50 |
| 1206SFS300F/32 | 3.0 | 0.034 | 1.20 | 32 | 50 |
| 1206SFS350F/32 | 3.5 | 0.028 | 1.60 | 32 | 50 |
| 1206SFS400F/32 | 4.0 | 0.024 | 2.20 | 32 | 50 |
| 1206SFS450F/32 | 4.5 | 0.020 | 3.60 | 32 | 50 |
| 1206SFS500F/32 | 5.0 | 0.016 | 5.30 | 32 | 50 |
| 1206SFS550F/24 | 5.5 | 0.014 | 6.40 | 24 | 50 |
| 1206SFS600F/24 | 6.0 | 0.011 | 8.50 | 24 | 60 |
| 1206SFS700F/24 | 7.0 | 0.010 | 10.00 | 24 | 60 |
| 1206SFS800F/24 | 8.0 | 0.009 | 16.90 | 24 | 60 |

* Measured at ≤10% of rated current and 25°C ambient temperature.

† Melting I²t at 0.001 sec clear time.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## Figures FS1-FS6 — Family Performance Curves

**Figure FS1**

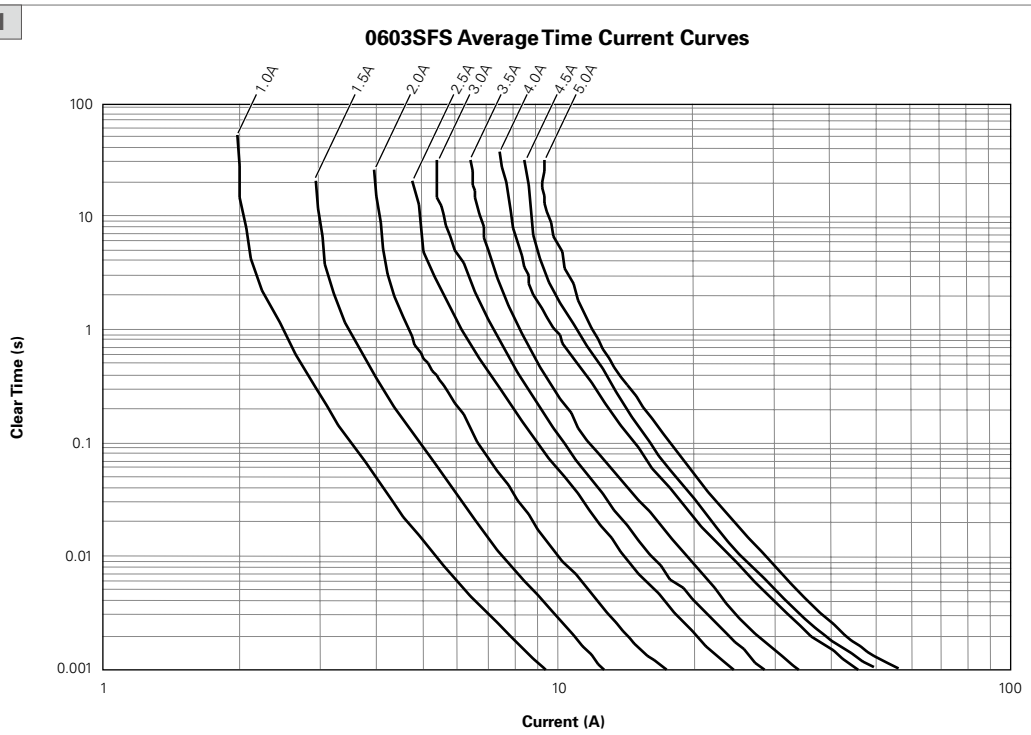
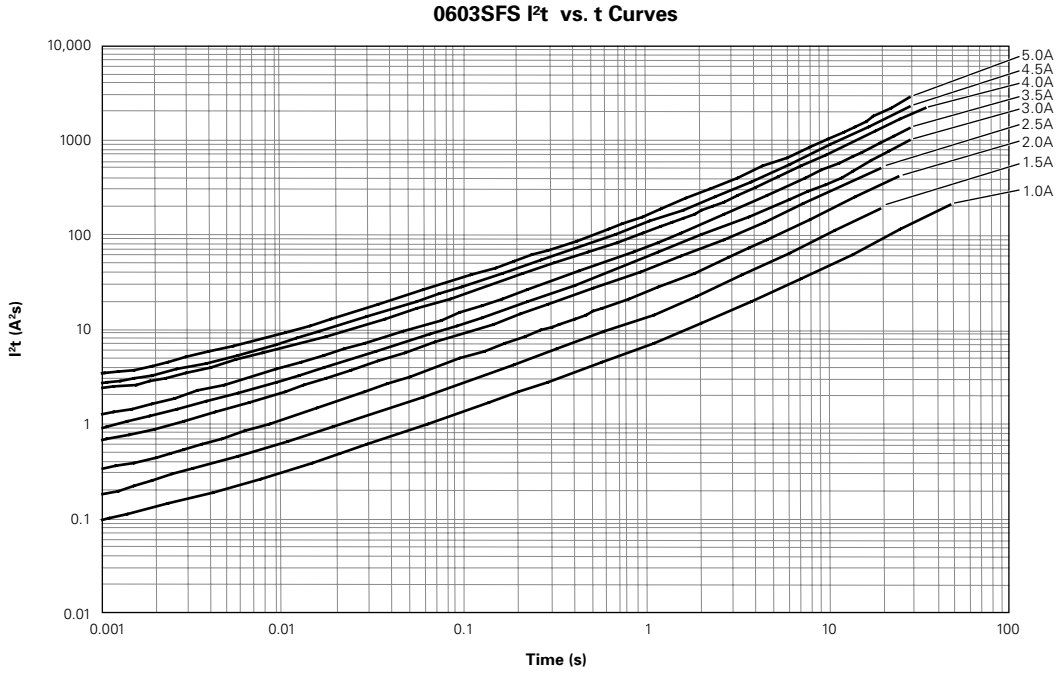



**Figure FS2**




**Note:** Curves are nominal.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## Figures FS1-FS6 — Family Performance Curves (Cont'd)

**Figure FS3**

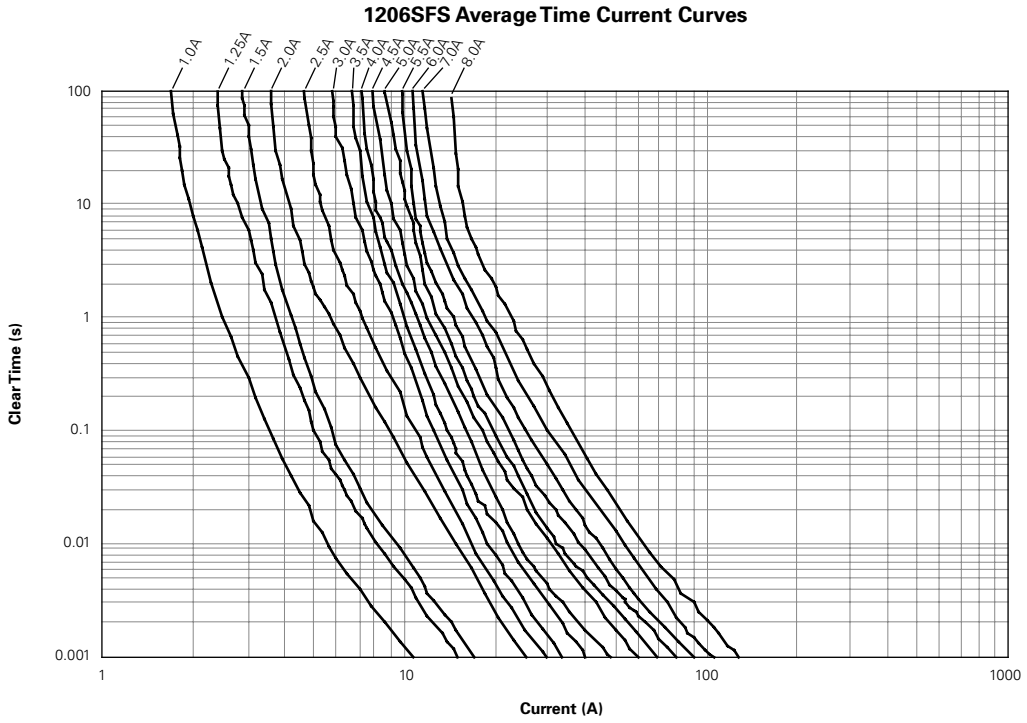
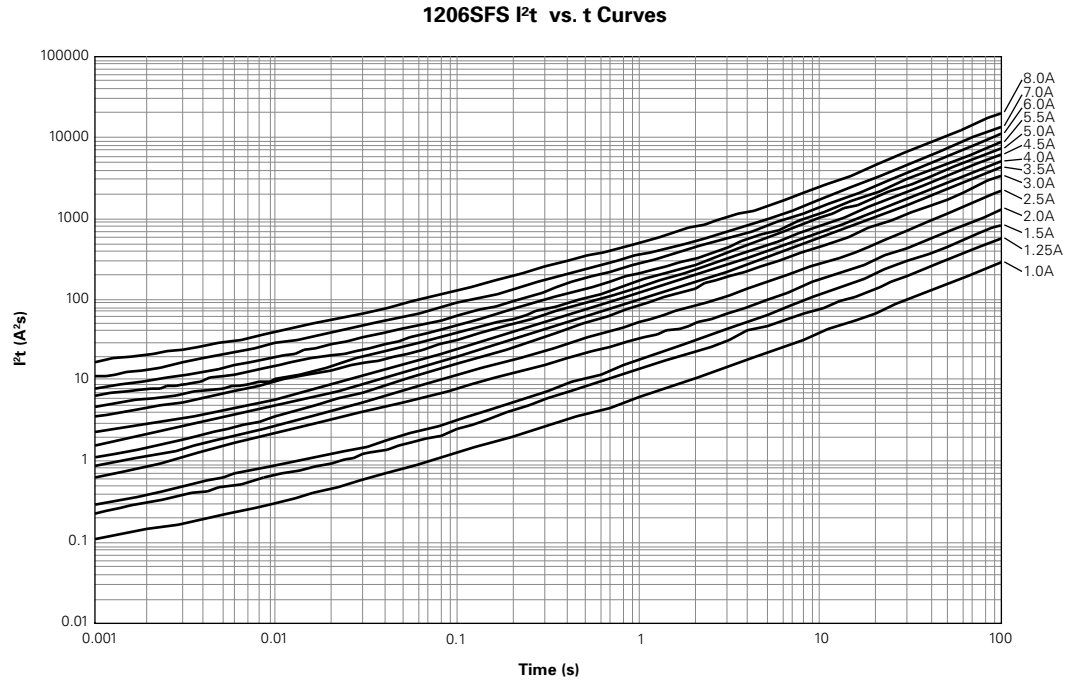



**Figure FS4**




**Note:** Curves are nominal.

➔ **Please go to page 108 for more information about Slow-Blow Chip Fuses.**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## Figures FS1-FS6 — Family Performance Curves (Cont'd)

**Figure FS5**

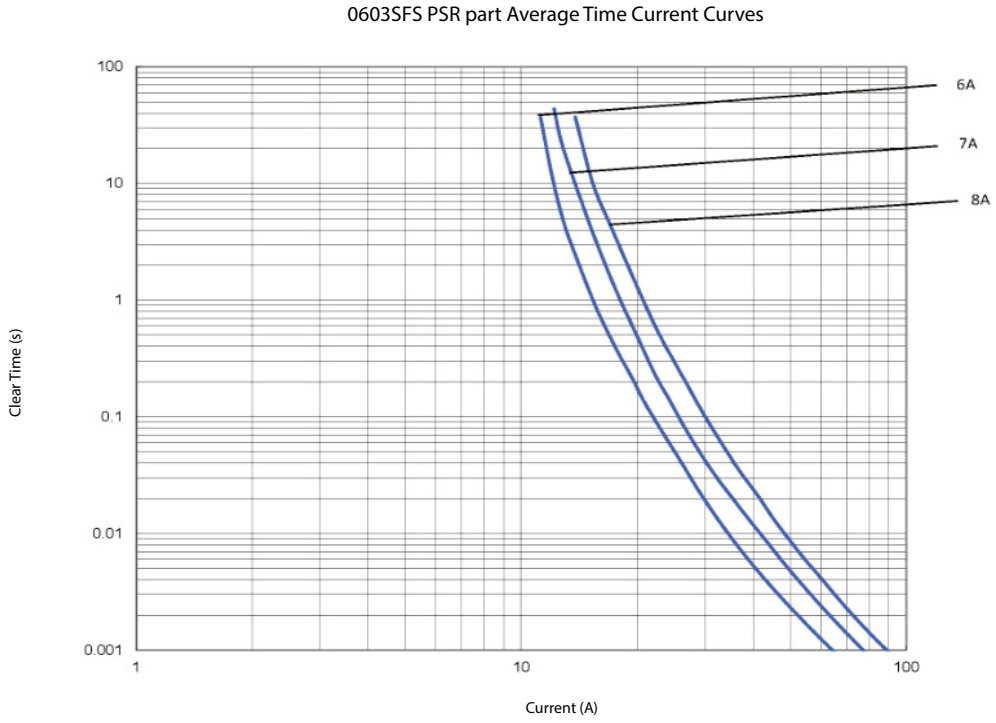
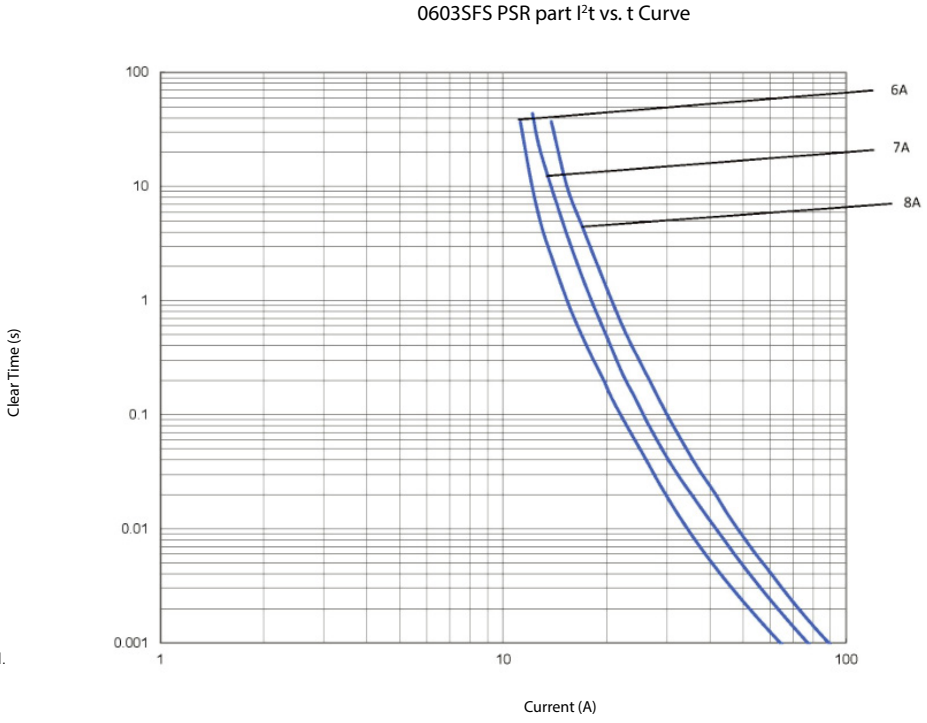



**Figure FS6**




**Note:** Curves are nominal.

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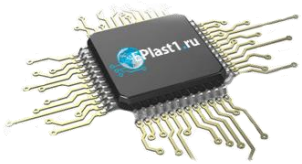
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

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