

# SURFACE-MOUNT FUSES

## Fast-Acting Chip Fuses

Fast-acting chip fuses help provide overcurrent protection for systems using DC power sources up to 63V<sub>DC</sub>. The fuse's monolithic, multilayer design helps provide the highest hold current in the smallest footprint, reduce diffusion-related aging, improve product reliability and resilience, and enhance high-temperature performance in a wide range of circuit designs.

These RoHS-compliant surface-mount devices offer strong arc suppression characteristics and help facilitate the development of more reliable, high-performance consumer electronics such as laptops, multimedia devices, cell phones and other portable electronics.



### BENEFITS

- Small size with high current ratings
- Temperature stability
- High reliability and resilience
- Strong arc suppression characteristics

### FEATURES

- Lead-free 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

- Laptops
- Digital cameras
- Cell phones
- Printers
- DVD players
- Portable electronics
- Game systems
- LCD monitors
- Scanners

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### Table FF1 – Clear Time Characteristics

| % of Rated Current | Clear Time at 25°C |
|--------------------|--------------------|
| 100%               | 4 hrs (min)        |
| 250%               | 5 s (max)          |
| 400%               | 0.05 s (max)       |

### Table FF2 – Typical Electrical Characteristics, Dimensions and Recommended Pad Layout

#### 0402 (1005mm) Fast-Acting Chip Fuses

Shape and Dimensions  
in (mm)



Recommended Pad Layout  
in (mm)



#### 0603 (1608mm) Fast-Acting Chip Fuses

Shape and Dimensions  
in (mm)



Recommended Pad Layout  
in (mm)



#### 1206 (3216mm) Fast-Acting Chip Fuses

Shape and Dimensions  
in (mm)



Recommended Pad Layout  
in (mm)



| Part Number    | Typical Electrical Characteristics |                       |                                                            | Max Interrupt Ratings      |             |
|----------------|------------------------------------|-----------------------|------------------------------------------------------------|----------------------------|-------------|
|                | Rated Current (A)                  | Nominal Cold DCR (Ω)* | Nominal I <sup>2</sup> t (A <sup>2</sup> sec) <sup>†</sup> | Voltage (V <sub>DC</sub> ) | Current (A) |
| 0402SFF100F/24 | 1.00                               | 0.120                 | 0.0170                                                     | 24                         | 35          |
| 0402SFF150F/24 | 1.50                               | 0.056                 | 0.0490                                                     | 24                         | 35          |
| 0402SFF200F/24 | 2.00                               | 0.035                 | 0.0700                                                     | 24                         | 35          |
| 0402SFF300F/24 | 3.00                               | 0.021                 | 0.1250                                                     | 24                         | 35          |
| 0402SFF400F/24 | 4.00                               | 0.014                 | 0.2250                                                     | 24                         | 35          |

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|----------------|------------------------------------|-----------------------|------------------------------------------------------------|----------------------------|-------------|
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| 0603SFF050F/32 | 0.50                               | 0.485                 | 0.0029                                                     | 63                         | 35          |
| 0603SFF075F/32 | 0.75                               | 0.254                 | 0.0064                                                     | 63                         | 35          |
| 0603SFF100F/32 | 1.00                               | 0.147                 | 0.0160                                                     | 63                         | 35          |
| 0603SFF150F/32 | 1.50                               | 0.059                 | 0.0300                                                     | 63                         | 35          |
| 0603SFF200F/32 | 2.00                               | 0.044                 | 0.0600                                                     | 32                         | 35          |
| 0603SFF250F/32 | 2.50                               | 0.032                 | 0.1150                                                     | 32                         | 35          |
| 0603SFF300F/32 | 3.00                               | 0.025                 | 0.1900                                                     | 32                         | 35          |
| 0603SFF350F/32 | 3.50                               | 0.024                 | 0.2950                                                     | 32                         | 35          |
| 0603SFF400F/32 | 4.00                               | 0.018                 | 0.4000                                                     | 32                         | 35          |
| 0603SFF500F/32 | 5.00                               | 0.013                 | 0.7000                                                     | 32                         | 35          |
| 0603SFF600F/24 | 6.00                               | 0.010                 | 1.1250                                                     | 24                         | 35          |

| Part Number    | Typical Electrical Characteristics |                       |                                                            | Max Interrupt Ratings      |             |
|----------------|------------------------------------|-----------------------|------------------------------------------------------------|----------------------------|-------------|
|                | Rated Current (A)                  | Nominal Cold DCR (Ω)* | Nominal I <sup>2</sup> t (A <sup>2</sup> sec) <sup>†</sup> | Voltage (V <sub>DC</sub> ) | Current (A) |
| 1206SFF050F/63 | 0.50                               | 0.730                 | 0.0021                                                     | 63                         | 50          |
| 1206SFF075F/63 | 0.75                               | 0.513                 | 0.0052                                                     | 63                         | 50          |
| 1206SFF100F/63 | 1.00                               | 0.220                 | 0.0120                                                     | 63                         | 50          |
| 1206SFF150F/63 | 1.50                               | 0.120                 | 0.0250                                                     | 63                         | 50          |
| 1206SFF175F/63 | 1.75                               | 0.100                 | 0.0450                                                     | 63                         | 50          |
| 1206SFF200F/63 | 2.00                               | 0.050                 | 0.0700                                                     | 63                         | 50          |
| 1206SFF250F/32 | 2.50                               | 0.035                 | 0.1400                                                     | 32                         | 50          |
| 1206SFF300F/32 | 3.00                               | 0.031                 | 0.2200                                                     | 32                         | 50          |
| 1206SFF400F/32 | 4.00                               | 0.022                 | 0.3800                                                     | 32                         | 45          |
| 1206SFF500F/32 | 5.00                               | 0.015                 | 0.6000                                                     | 32                         | 45          |
| 1206SFF600F/32 | 6.00                               | 0.013                 | 1.0000                                                     | 32                         | 50          |
| 1206SFF700F/32 | 7.00                               | 0.011                 | 1.7500                                                     | 32                         | 50          |
| 1206SFF800F/32 | 8.00                               | 0.008                 | 2.5000                                                     | 32                         | 50          |
| 1206SFF600F/24 | 6.00                               | 0.013                 | 1.0000                                                     | 24                         | 45          |
| 1206SFF700F/24 | 7.00                               | 0.011                 | 1.7500                                                     | 24                         | 45          |
| 1206SFF800F/24 | 8.00                               | 0.008                 | 2.5000                                                     | 24                         | 45          |

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

† Melting I<sup>2</sup>t at 0.001 sec clear time.

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## Fast-Acting Chip Fuses

### Figures FF1-FF6 – Family Performance Curves

**Figure FF1**



**Figure FF2**



Note: Curves are nominal.

**Figure FF3**



**Figure FF4**



Note: Curves are nominal.

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### Figures FF1-FF6 — Family Performance Curves

(Cont'd)



### Notice:

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