

Fast Acting Fuses

Fast-acting fuses help provide overcurrent protection on systems using DC power sources up to 63V_{DC}. The fuse's monolithic, multilayer design provides the highest hold current in the smallest footprint, reduces diffusion-related aging, improves product reliability and resilience, and enhances high temperature performance. This helps 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
- Excellent temperature stability
- High reliability and resilience
- Strong arc suppression characteristics

Features

- RoHS compliant
- Monolithic, multilayer design
- High temperature performance
- -55°C to +125°C operating range

Applications

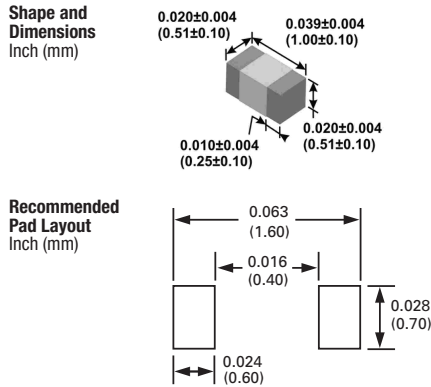
- | | | |
|-------------------|------------------------|----------------|
| • Laptops | • Printers | • Game systems |
| • Digital cameras | • DVD players | • LCD monitors |
| • Cell phones | • Portable electronics | • Scanners |

Table FF1 - Clear Time Characteristics for Fast Acting Fuses

% of rated current	Clear time at 25°C
100%	4 hours min.
250%	5 seconds max.
400%	0.05 seconds max.

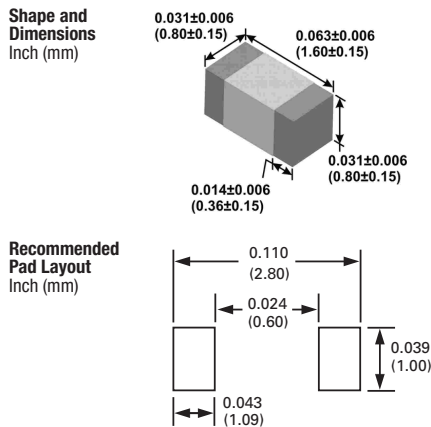
Table FF2 - Typical Electrical Characteristics, Dimensions and Recommended Pad Layout for Fast Acting Fuses

0402 (1005mm) Fast Acting Surface-mount Chip Fuses



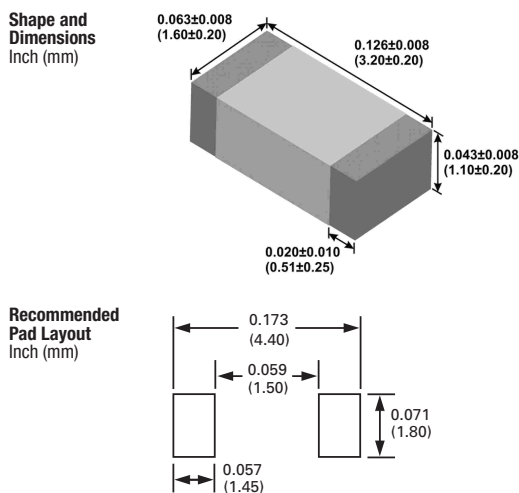
Part Number	Typical Electrical Characteristics*		Max Interrupt Ratings*	
	Rated Current (A)	Nominal Cold DCR† (Ω)	Voltage (V _{DC})	Current (A)
0402SFF050F/24	0.50	0.380	24	35
0402SFF075F/24	0.75	0.210		
0402SFF100F/24	1.00	0.120		
0402SFF150F/24	1.50	0.056		
0402SFF200F/24	2.00	0.035		
0402SFF300F/24	3.00	0.021		
0402SFF400F/24	4.00	0.014		

0603 (1608mm) Fast Acting Surface-mount Chip Fuses



Part Number	Typical Electrical Characteristics*		Max Interrupt Ratings*	
	Rated Current (A)	Nominal Cold DCR† (Ω)	Voltage (V _{DC})	Current (A)
0603SFF050F/32	0.50	0.485	32	50
0603SFF075F/32	0.75	0.254		
0603SFF100F/32	1.00	0.131		
0603SFF150F/32	1.50	0.059		
0603SFF200F/32	2.00	0.044		
0603SFF250F/32	2.50	0.032		
0603SFF300F/32	3.00	0.025		
0603SFF350F/32	3.50	0.024	35	
0603SFF400F/32	4.00	0.018		
0603SFF500F/32	5.00	0.013		
0603SFF600F/24	6.00	0.010	24	

1206 (3216mm) Fast Acting Surface-mount Chip Fuses



Part Number	Typical Electrical Characteristics*		Max Interrupt Ratings*	
	Rated Current (A)	Nominal Cold DCR† (Ω)	Voltage (V _{DC})	Current (A)
1206SFF050F/63	0.50	0.500	63	50
1206SFF075F/63	0.75	0.330		
1206SFF100F/63	1.00	0.220		
1206SFF150F/63	1.50	0.120		
1206SFF175F/63	1.75	0.100		
1206SFF200F/63	2.00	0.050		
1206SFF250F/32	2.50	0.035		
1206SFF300F/32	3.00	0.031		
1206SFF400F/32	4.00	0.022		
1206SFF500F/63	5.00	0.015	24	45
1206SFF600F/24	6.00	0.013		
1206SFF700F/24	7.00	0.011		
1206SFF800F/24	8.00	0.008		

* Measured at 25°C
† Measured at 10% of rated current

Figures FF1-FF6 - Family Average Clear Time

Figure FF1 - 0402SFF Family Average Clear Time

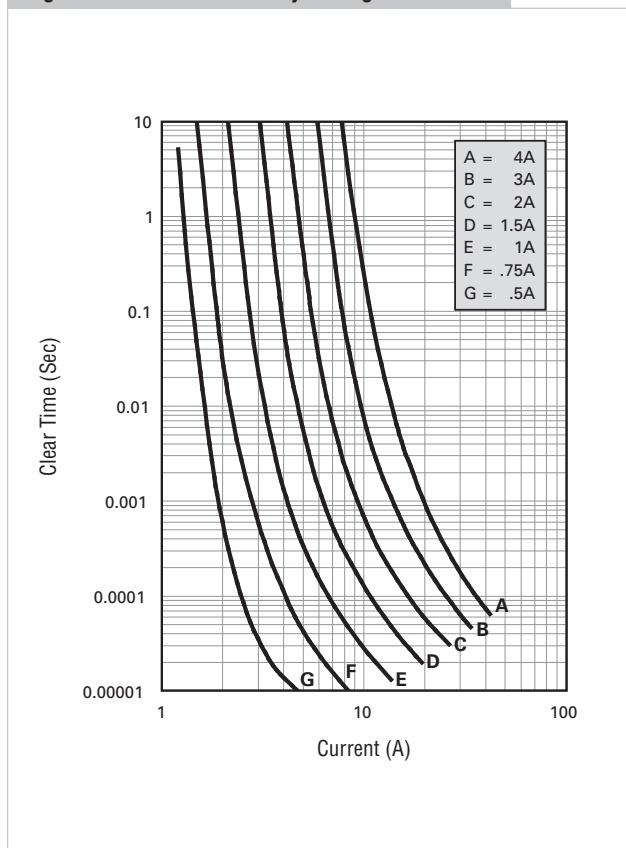


Figure FF2 - 0402SFF Family I²T vs. Clear Time

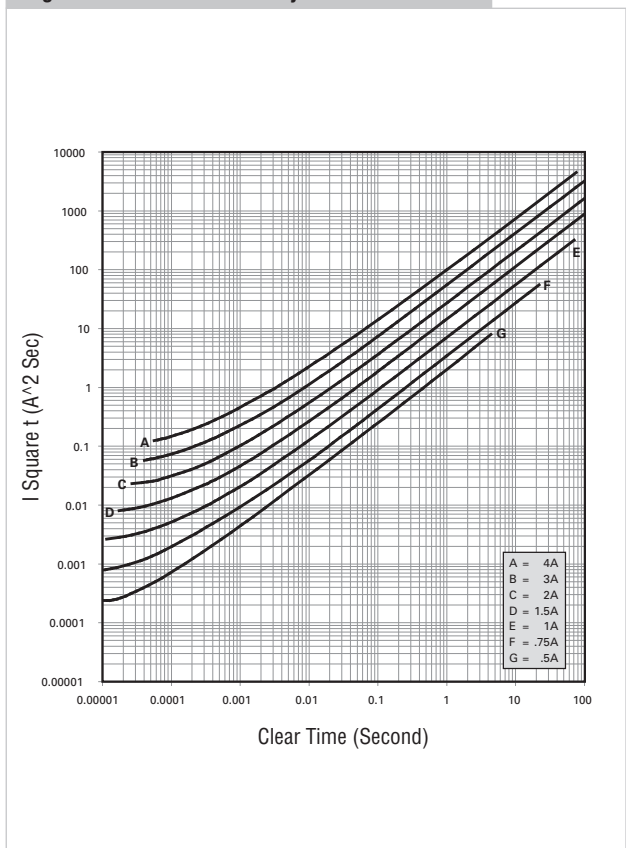


Figure FF3 - 0603SFF Family Average Clear Time

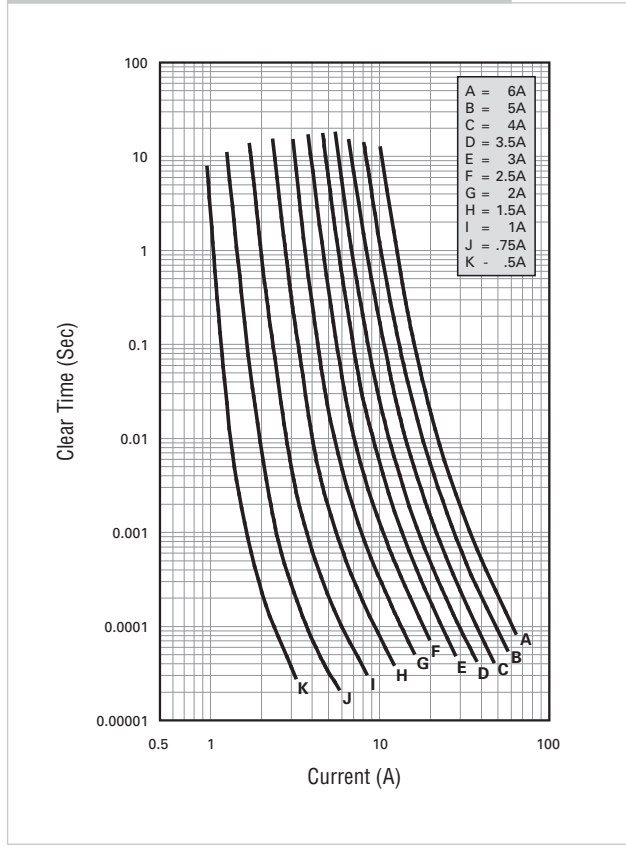


Figure FF4 - 0603SFF Family I²T vs. Clear Time

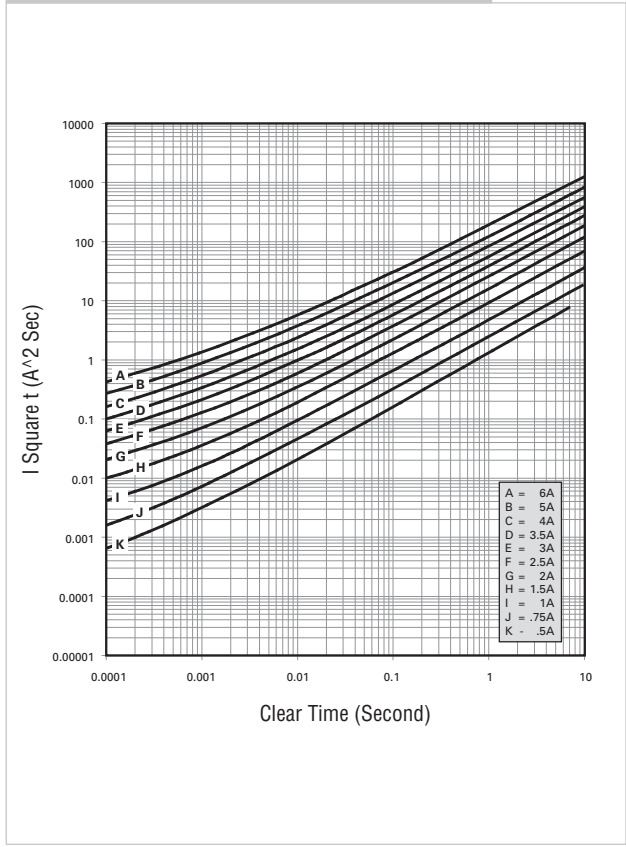


Figure FF5 - 1206SFF Family Average Clear Time

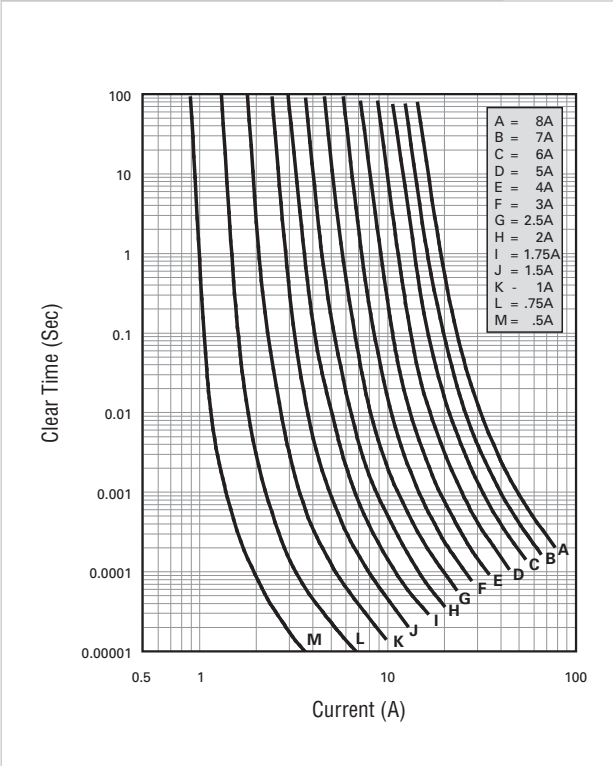
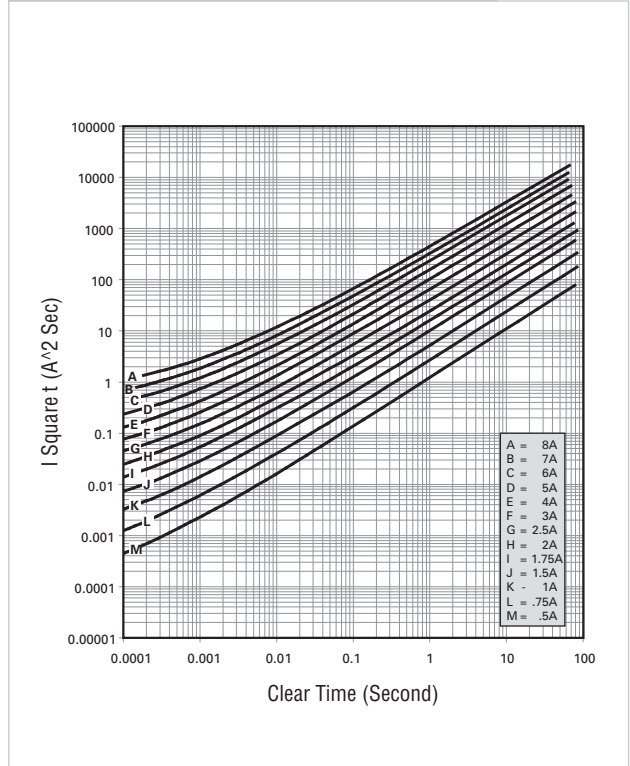


Figure FF6 - 1206SFF Family I²t vs. Clear Time



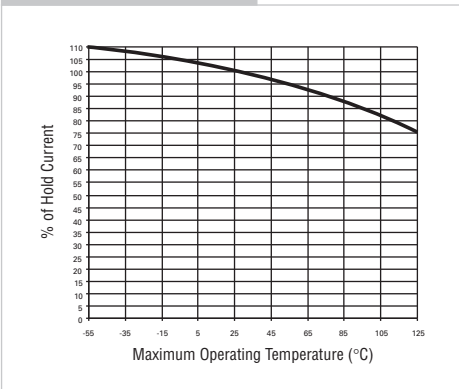
Environmental Specifications

Operating Temperature	-55°C to +125°C
Mechanical Vibration	Withstands 5-3000 Hz at 30 Gs when evaluated per Method 204 of MIL-STD-202
Mechanical Shock	Withstands 1500 Gs, 0.5 millisecond half-sine pulses when evaluated per Method 213 of MIL-STD-202
Thermal Shock	Withstands 100 cycles from -65°C to +125°C when evaluated per Method 107 of MIL-STD-202
Resistance to Soldering Heat	Withstands 60 seconds at +260°C when evaluated per Method 210 of MIL-STD-202
Solderability	Meets 95% minimum coverage requirement when evaluated per Method 208 of MIL-STD-202
Moisture Resistance	Withstands 10 cycles when evaluated per Method 106 of MIL-STD-202
Salt Spray	Withstands 48-hour exposure when evaluated per Method 101 of MIL-STD-202

Material Specifications

Construction Body Material	Ceramic
Termination Material	Silver, Nickel, Tin
Fuse Element	Silver
Terminal Strength	Hanging test: 0603: 0.5kg 30 seconds; 1206 1.5kg, 30 seconds; 0402 part types meet 2-pound push test

Thermal Derating Current



Electrical Specifications

Insulation Resistance after Opening	20,000Ω minimum @ rated voltage. Fuse clearing under low voltage conditions may result in lower post-clearing insulation values. Under normal fault conditions values. Under normal fault conditions Raychem fuses provide sufficient insulation resistance for circuit protection.
Current Carrying Capacity	Withstands 100% rated current at +25°C ambient for 4 hours when evaluated per MIL-PRF-23419

Packaging Specifications

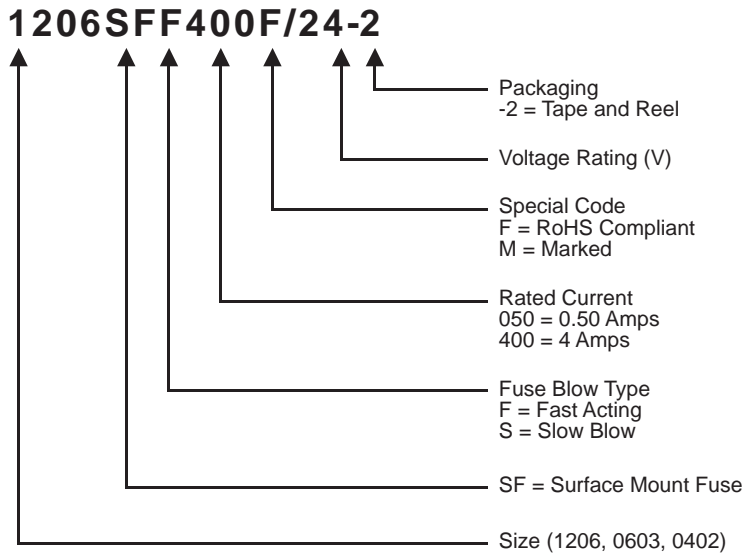
Chip Size	Parts on 7-inch (178 mm) Reel
0402 (1005)	10,000
0603 (1608)	4,000
1206 (3216)	3,000

Agency Approvals for Fast Acting Fuses

UL

File # E197536

Part Numbering System for Fast Acting Fuses



WARNING:

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