

# Fast Acting | 0.063x0.032 inch Thick Film Chip Fuses

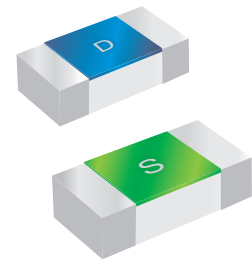
## 0603FA Series



0603FA Series are the fuses set the industry standard for performance, reliability and quality. The solder-free design provides excellent on-off and temperature cycling characteristics during use and also makes our SMD fuses more heat and shock tolerant than typical subminiature fuses.

### Features

- High inrush current withstanding capability
- Ceramic and glass construction
- Halogen free, lead free and RoHS compliant
- Excellent environmental integrity
- One time positive disconnect
- AEC-Q200 Automotive Grade Certified



### Applications

- Flat panel displays and televisions
- Automotive infotainment and ECU
- Computer servers
- Portable electronics
- Mobile device chargers

### Electrical Characteristics

Amp Rating	% of Amp Rating	Opening Time
0.25~8A	100%	4 Hours Min.
0.25~8A	200%	60 Seconds Max.

### Specifications

Part Number	Ampere Rating (A)	Voltage Rating (V)	Interrupting Rating	Typical Cold Resistance (Ohms)	Typical Melting I <sup>2</sup> t (A <sup>2</sup> Sec)	Typical Voltage Drop (V)	Marking Code
0603FA-R250	0.250	32	32V@50A	3.220	0.00045	0.890	D
0603FA-R375	0.375	32	32V@50A	1.290	0.00091	0.591	E
0603FA-R500	0.500	32	32V@50A	1.073	0.0012	0.589	F
0603FA-R750	0.750	32	32V@50A	0.477	0.0093	0.428	G
0603FA-1A	1.00	32	32V@50A	0.311	0.0111	0.346	B
0603FA-1.5A	1.50	32	32V@50A	0.147	0.0462	0.275	H
0603FA-2A	2.00	32	32V@50A	0.071	0.1153	0.160	K
0603FA-2.5A	2.50	32	32V@50A	0.055	0.1416	0.142	L
0603FA-3A	3.00	32	32V@50A	0.034	0.2098	0.135	O
0603FA-3.5A	3.50	32	32V@50A	0.024	0.5147	0.130	R
0603FA-4A	4.00	32	32V@50A	0.021	0.5601	0.123	S
0603FA-5A	5.00	32	32V@50A	0.013	1.212	0.119	T
0603FA-6A	6.00	32	32V@50A	0.009	1.745	0.112	V
0603FA-7A	7.00	32	32V@50A	0.007	2.333	0.856	X
0603FA-8A	8.00	32	32V@50A	0.005	3.027	0.767	Z

- DC Interrupting Rating - Measured at designated voltage, time constant < 50 microseconds.
- DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C.
- Typical Melting I<sup>2</sup>t measured at 10In Current.
- Typical Voltage Drop measured at rated current after temperature has stabilized.

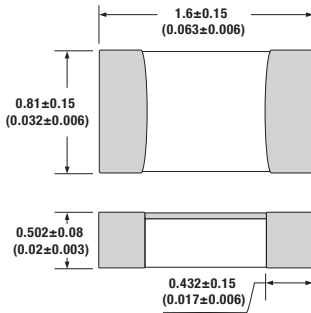
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## Thick Film Chip Fuses

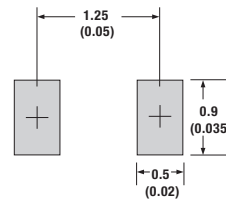
## 0603FA Series

### Dimension

Unit: mm/inch



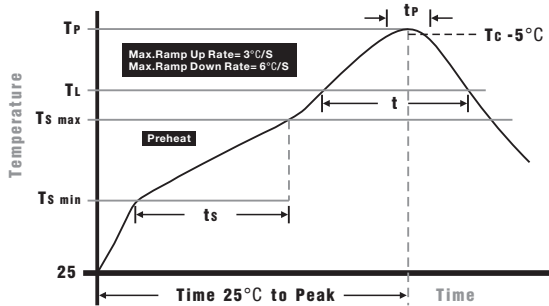
### Pad layout



### Packaging

- Quantity: 5,000pcs
- 8mm wide tape on 178mm(7 inch) diameter reel - specification EIA Standard 481.

### Soldering Parameters

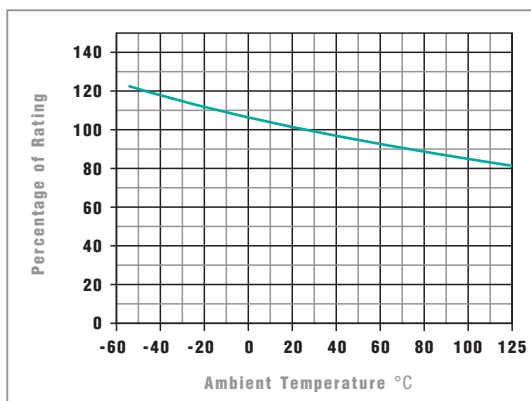


**Wave Soldering:** 260°C, 10 seconds max.  
**Infrared Reflow:** 260°C, 30 seconds max.

### IR Reflow Profile

<b>Preheat Heat</b>	
Temperature min (T <sub>smin</sub> )	150°C
Temperature max (T <sub>smax</sub> )	200°C
Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	60 - 120 seconds
<b>Average ramp-up rate (T<sub>smax</sub> to T<sub>p</sub>)</b>	3°C/second max.
<b>Liquidous temperature (T<sub>L</sub>)</b>	217°C
Time at liquidous (t <sub>L</sub> )	60 - 150 seconds
<b>Peak temperature (T<sub>p</sub>)</b>	260+0/-5°C
<b>Time within 5°C of actual peak Temperature (t<sub>p</sub>)</b>	10 - 30 seconds
<b>Average ramp-down rate (T<sub>p</sub> to T<sub>smax</sub>)</b>	6°C/second max.
<b>Time 25 °C to peak temperature</b>	8 minutes max.

### Temperature Derating Curve



- Normal Operating Temperature: 23°C  $\pm$  2
- Operating Temperature: -55 to 125°C
- The fuse rating is determined by the equation below:

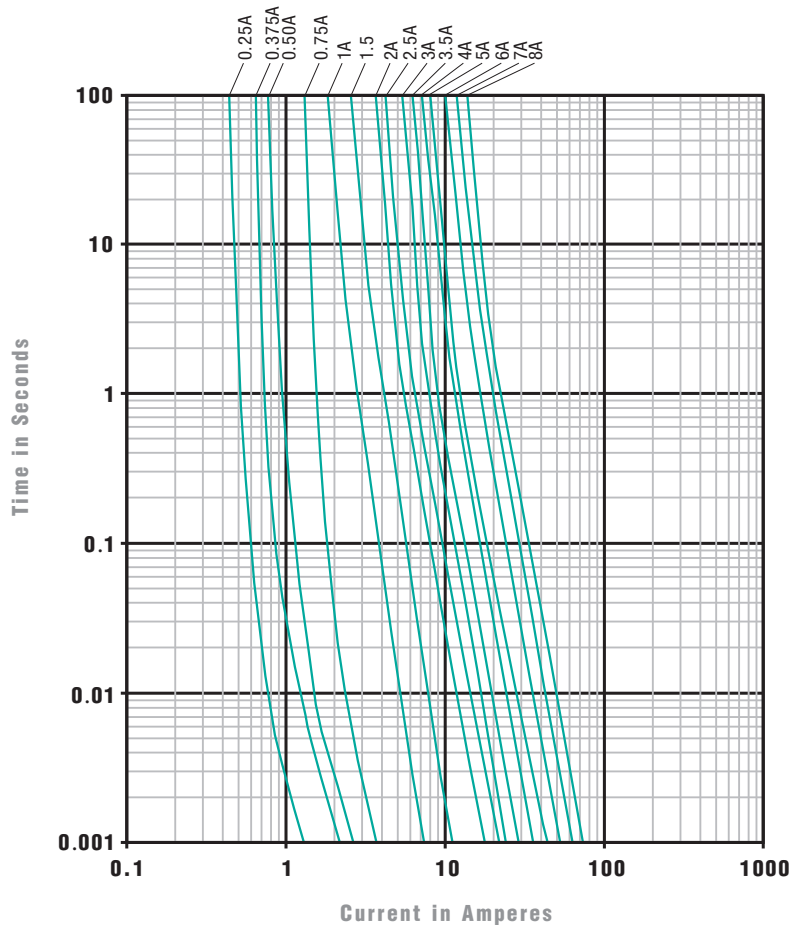
$$I_n = \frac{I_{input\ max.}}{0.70 \times K_{temp}}$$

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Thick Film Chip Fuses

0603FA Series

Average Time Current Curves



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