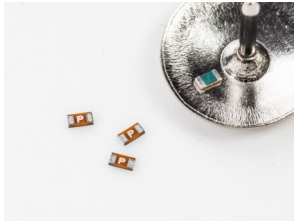


## TF-FUSE® Thin Film Surface Mount Fuses

### HI Series (High Inrush), 0603 Size



#### Features:

- Low DCR
- High inrush current withstanding capability
- Fiberglass enforced epoxy fuse body
- Copper termination with nickel and tin plating
- Halogen free, RoHS compliance and lead-free

#### Applications:

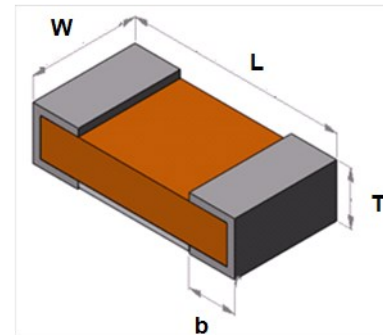
- Consumer Electronics
- Notebook Computers and Tablets
- Telecom Devices
- Mobile Phone
- Battery Pack
- Digital Camera

#### Shape and Dimensions:

Unit	Inch	mm
Length (L)	0.063 ± 0.004	1.60 ± 0.10
Width (W)	0.032 ± 0.004	0.81 ± 0.10
Thickness (T)	0.014 ± 0.004	0.36 ± 0.10
Termination bandwidth (b)	0.014 ± 0.004	0.36 ± 0.10

#### Clearing Time Characteristics:

% of Current Rating	Opening Time at 25°C	
	100%	4 hours min.
200%	1 second min.	60 seconds max.
1000%	0.0002 second min.	0.02 second max.



#### Agency Approval:

Recognized Under the Components Program of UL.  
File Number: E232989.

#### Typical Ratings and Characteristics:

Operating temperature: -55 to +90°C

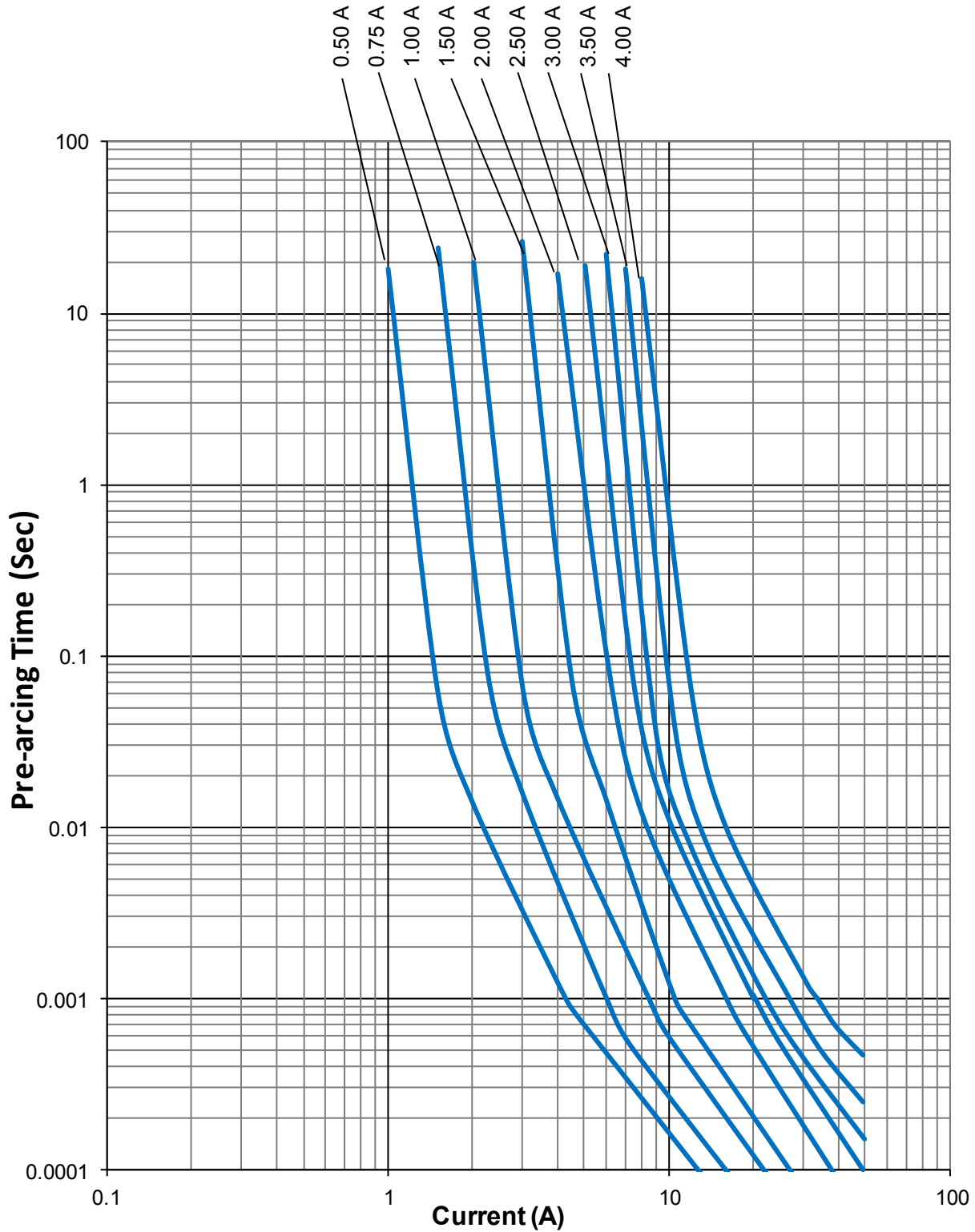
Part Number	Current Rating (A)	Voltage Rating (VDC)	Interrupting Rating	Nominal Cold DCR ( $\Omega$ ) <sup>1</sup>	Nominal $I^2t$ ( $A^2s$ ) <sup>2</sup>	Marking
T0603HI0500TM	0.50	65	50A@35V DC/AC 13A@65V DC	0.1550	0.019	C
T0603HI0750TM	0.75	65		0.0830	0.036	D
T0603HI1000TM	1.00	65		0.0500	0.052	E
T0603HI1500TM	1.50	65		0.0290	0.110	T
T0603HI2000TM	2.00	35	35A@35V DC/AC 50A@24V DC/AC	0.0200	0.310	F
T0603HI2500TM	2.50	35		0.0165	0.400	J
T0603HI3000TM	3.00	35		0.0140	0.600	L
T0603HI3500TM	3.50	35		0.0120	0.800	N
T0603HI4000TM	4.00	35		0.0095	1.200	P

<sup>1</sup> Measured at ≤ 10% of rated current and 25°C ambient.

<sup>2</sup> Melting  $I^2t$  at 0.001 sec.

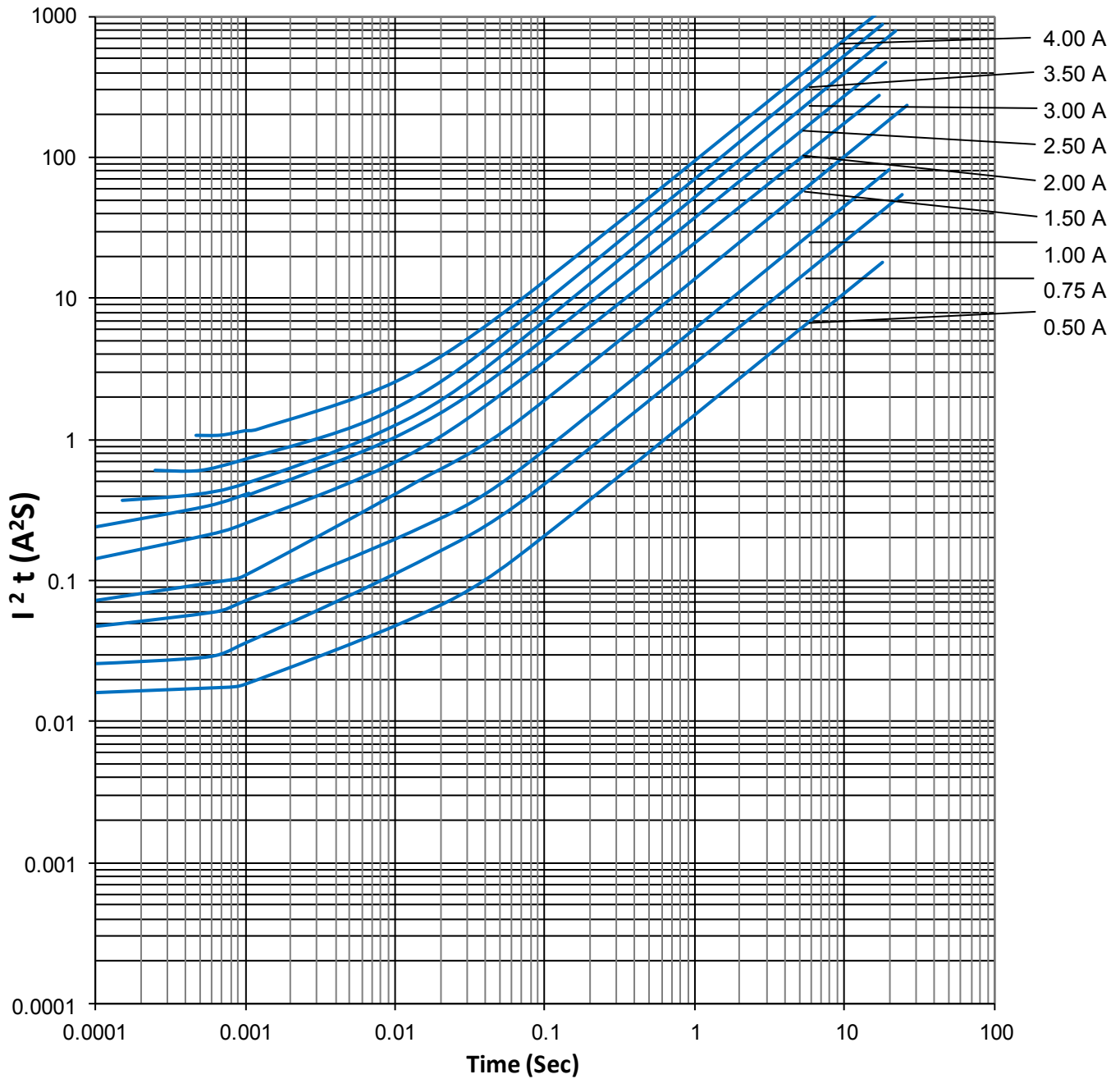
**TF-FUSE® Thin Film Surface Mount Fuses**  
**HI Series (High Inrush), 0603 Size**

**Average Pre-arcing Time Curves:**



**TF-FUSE® Thin Film Surface Mount Fuses**  
**HI Series (High Inrush), 0603 Size**

**Average  $I^2t$  vs.  $t$  Curves:**



## TF-FUSE® Thin Film Surface Mount Fuses

### Product Identification:

**T 0603 FF 1000 T M**

(1) (2) (3) (4) (5) (6)

- (1) **Product Code:** T—Thin Film
- (2) **Size Code:** Standard EIA chip sizes
- (3) **Series Code:** FF—Very Fast Acting, HI—High Inrush
- (4) **Current Rating Code:** 0500—0.5A, 1000—1.0A
- (5) **Package Code:** T—Tape & Reel; B—Bulk

### Environmental Tests:

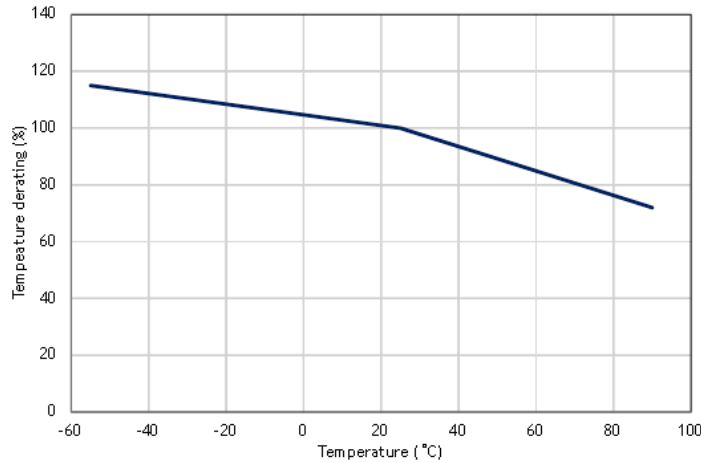
No.	Test item	Requirement	Test condition	Reference
1	Bending	≤1A: 10% DCR change max. >1A: 20% DCR change max.	2mm	Refer to AEM QIQ034
2	Solderability	95% coverage min.	One dip at 255°C for 5 seconds	MIL-STD-202 Method 208
3	Thermal shock	DCR change within ±10% No mechanical damage	100 cycles between -55°C and +125°C	MIL-STD-202 Method 107
4	Moisture resistance	DCR change within ±10% No excessive corrosion	10 cycles	MIL-STD-202 Method 106
5	Salt spray	DCR change within ≤ ±10% No excessive corrosion	5% salt solution, 48 hour exposure	MIL-STD-202 Method 101
6	Mechanical vibration	DCR change within ≤ ±10% No mechanical damage	0.4" D.A. or 30G between 5 and 3000 Hz	MIL-STD-202 Method 204
7	Mechanical shock	DCR change within ≤ ±10% No mechanical damage	1500G, 0.5 ms, half sine shocks	MIL-STD-202 Method 213
8	Life	Change of voltage drop within ±10%, no open circuit	75% rated current, 2000 hours, ambient temperature +20°C to 30°C	Refer to AEM QIQ106

### Packaging:

Chip Size	Parts on 7 inch (178mm) Reel
0603(1608)	8,000
0402(1005)	20,000

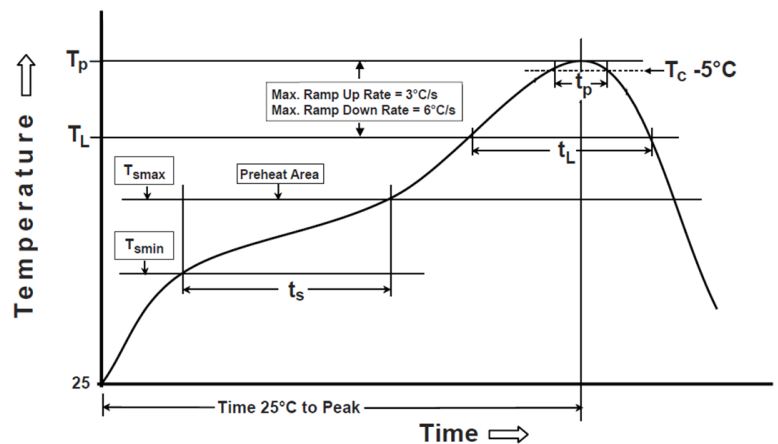
## TF-FUSE® Thin Film Surface Mount Fuses

### Temperature Effect on Current Rating:



### Recommended Reflow Soldering Profile:

Profile Feature	Pb-Free Assembly
<b>Preheat/Soak</b>	
Temperature Min ( $T_{smin}$ )	150°C
Temperature Max ( $T_{smax}$ )	200°C
Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60~120 seconds
Ramp-up rate ( $T_L$ to $T_p$ )	3°C/second max.
Liquidous temperature ( $T_L$ )	217°C
Time ( $t_L$ ) maintained above $T_L$	60~150 seconds
Peak package body temperature ( $T_p$ )	260°C
Time ( $t_p$ )*within 5°C of the specified classification temperature ( $T_c$ )	30 seconds *
Ramp-down rate ( $T_p$ to $T_L$ )	6°C/second max.
Time 25°C to peak temperature	8 minutes max.
* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum	



### Thermal Shock When Making Correction with a Soldering Iron:

The temperature of soldering iron tip should be controlled under 350 °C and soldering time should be less than 3 sec. The soldering iron tip should not directly touch the top side termination of the component.

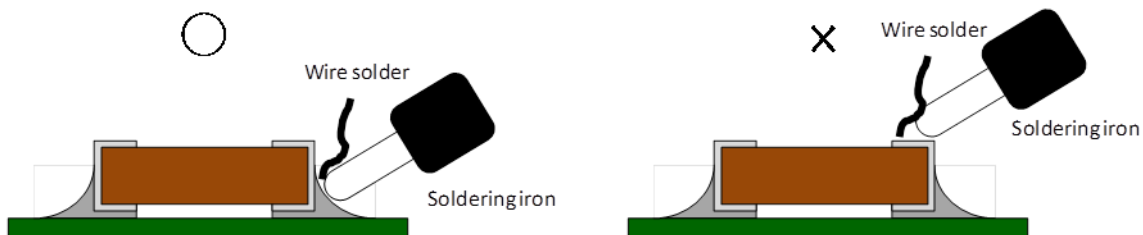


Fig 3 Correct handling method of soldering iron

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[0308.375UR](#) [0308.750UR](#) [0308001.UR](#) [030801.5UR](#) [F0603G0R03FNTR](#) [SKY87604-12](#) [SKY87604-11](#) [SKY87604-13](#) [R451003.L](#)  
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