



ADVANCED SURGETECH MATERIALS

1206 Slow Blow SMD Fuses

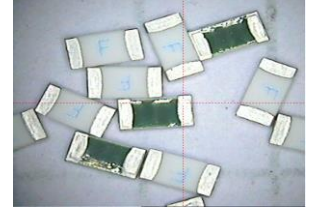
12 111 Series

Rev.: June., 2020



Description

12 111 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.



Rated Current	Electrical Characteristics				
	1.0In	2.5In	3.0In	3.5In	10.0In
4.5A~5A	4 hour min.	5 sec max.	0.1sec – 3sec	-	0.2ms – 20ms
6A~40A	4 hour min.	-	-	5 sec max.	0.2ms – 10ms

Features

- High inrush current withstanding capability
- AEC-Q200 Automotive Grade Certified
- Compatible with reflow and wave solder
- Ceramic and glass construction
- Excellent environmental integrity
- One time positive disconnect
- Lead Free and Halogen free material

Specifications

Specification								
Part No.	Rated		Rated Current (A)	Breaking Capacity (A) ¹	Typical Cold Resistance (mOhms) ²	Typical Voltage Drop (mV)	Typical Pre-Arcing I ² t (A ² Sec) ³	Alpha Mark
	Voltage							
	DC							
12 111.4.5	72V	32V	4.5	50A	27	164	2.65	X
12 111.5	63V		5		22	145	4	T
12 111.6	72V	32V	6	50A	14.5	140	12	F
12 111.7	63V		7		10.5	130	14	7
12 111.8	48V	32V	8	150A@48Vdc 150A@32Vdc	7.0	123	16	V
12 111.10			10		5.0	110	22	U
12 111.12			12		4.3	80	40	W
12 111.15			15		3.5	85	45	Y
12 111.20			20		2.2	80	50	Q
12 111.25	36V	32V	25	200A@32Vdc 200A@36Vdc	1.55	90	58	L
12 111.30			30		1.32	90	95	Z
12 111.40			40		0.85	95	240	XL

1. DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)

2. DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C

3. Typical Pre-arcing I²t are measured at 10In Current

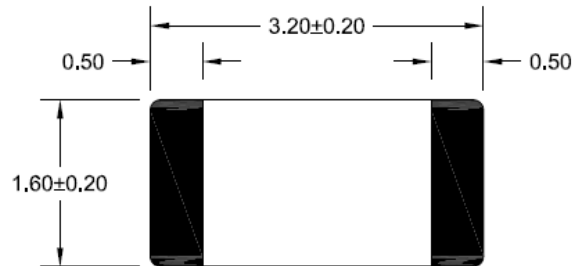
Choice fuse for surge application (USB charger etc.), make sure the I²t of fuse is 4 times than surge.

Specifications are subject to change without notice. Application testing is strongly recommended.

Dimension

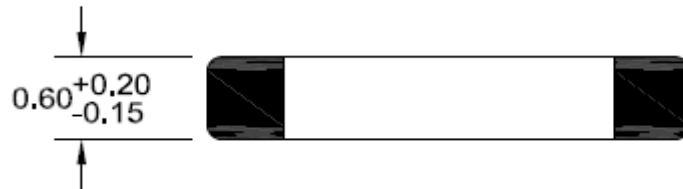
Drawing not to scale (Unit: mm)

Top view

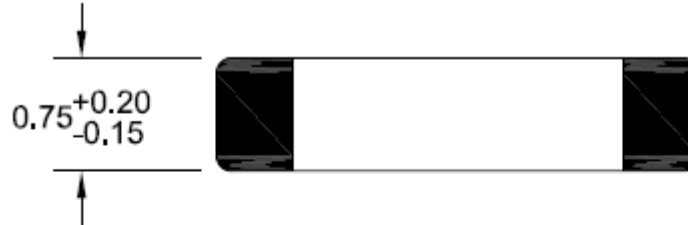


Side view:

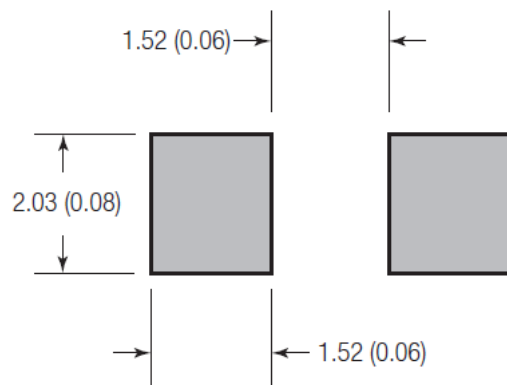
4.5A-30A



40A



Recommended land pattern

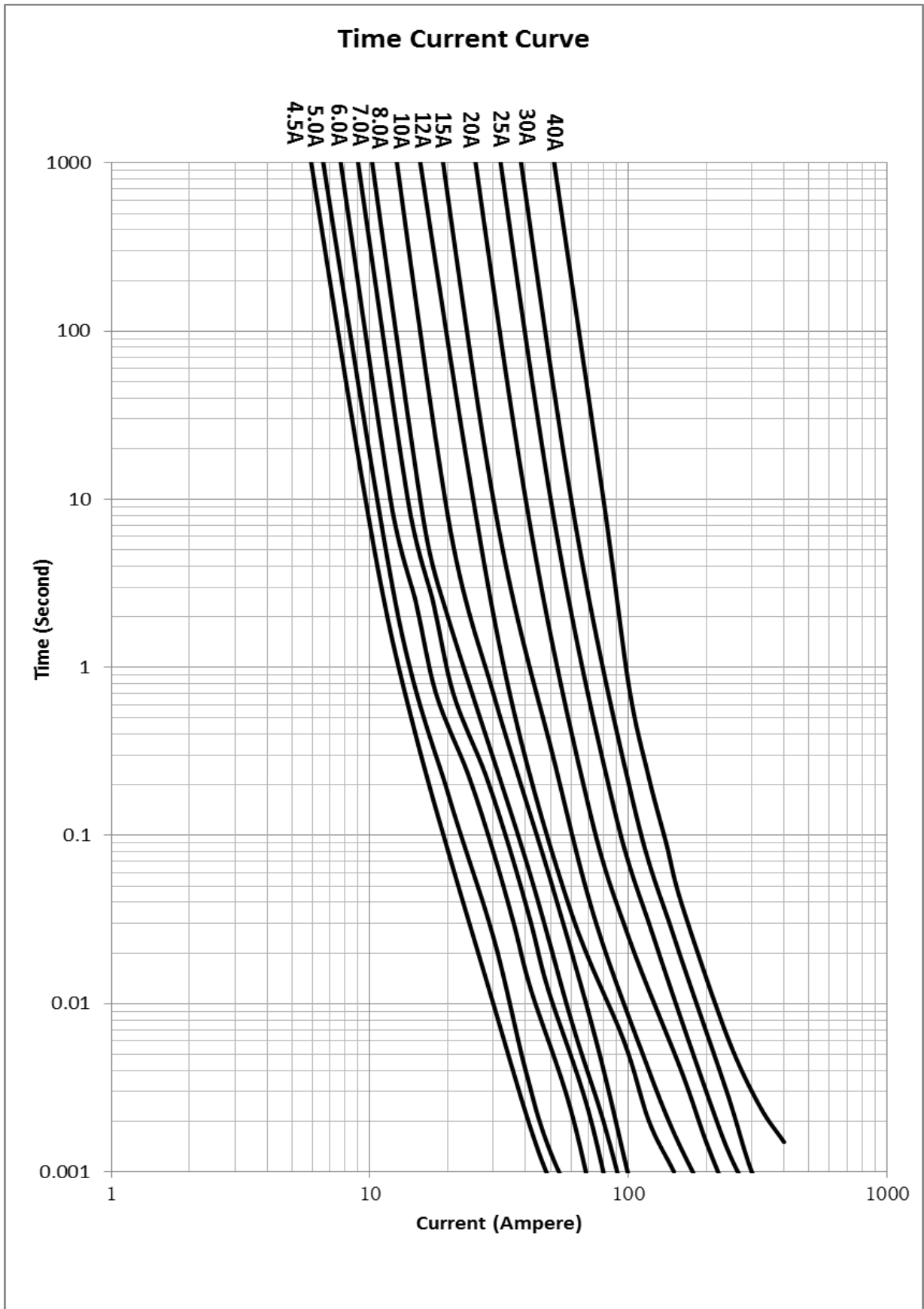


Unit: mm(inch)



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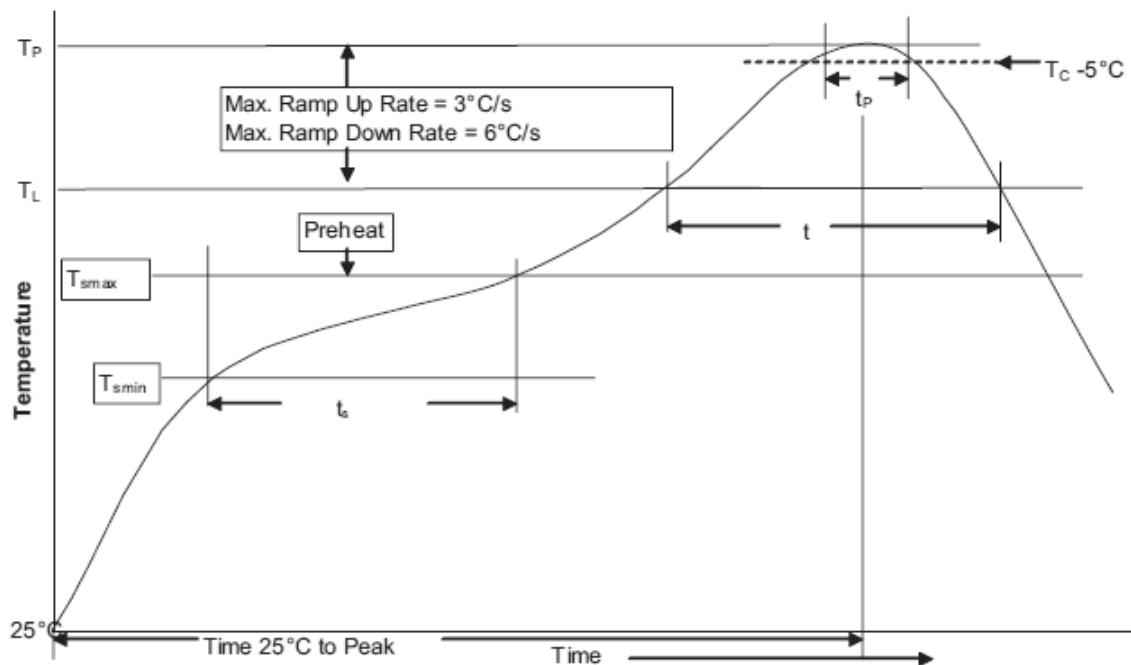
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Soldering method

- Wave solder
 - Reservoir temperature: 260°C
 - Time in reservoir: 10 seconds maximum
- Infrared reflow
 - Temperature: 260°C
 - Time: 30 seconds maximum

Solder reflow profile



Profile Feature		Lead(Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	150°C
	• Temperature max. (T_{smax})	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60 - 120 Seconds
Average ramp up rate T_{smax} to T_P		3°C / Second Max.
Liquidous temperature (T_L)		217°C
Time at liquidous (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
Average ramp-down rate (T_P to T_{smax})		6°C / Second Max.
Time (25°C to Peak Temperature)		8 Minutes Max.



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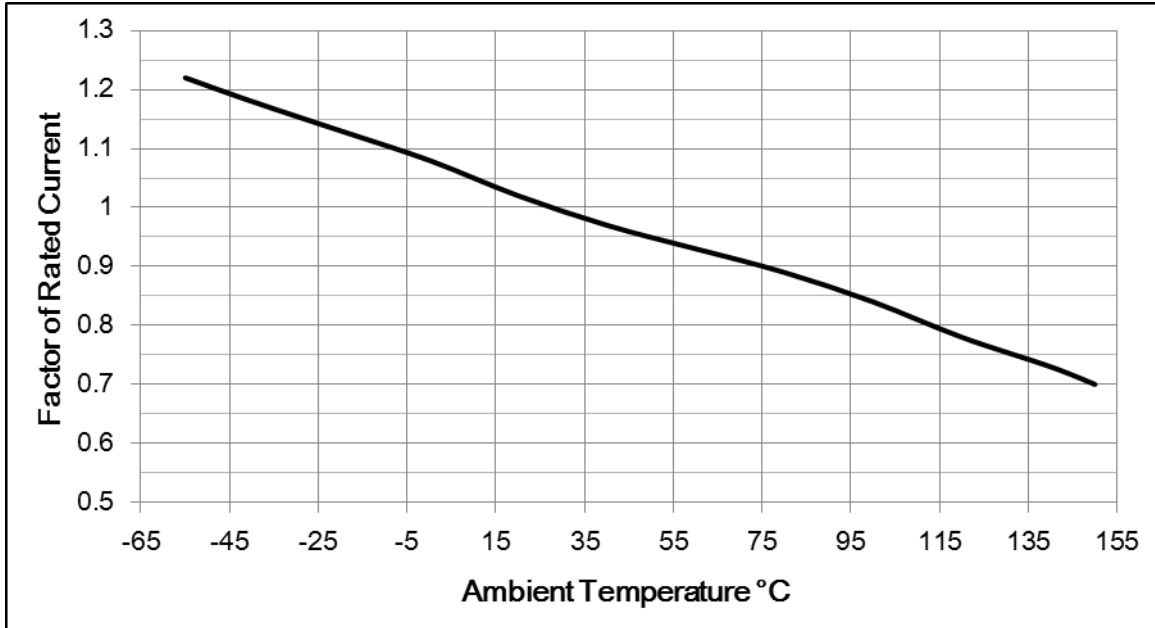
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Temperature Derating Curve

Normal ambient temperature: 23+/-3°C

Operating temperature: -55 ~ 150°C, with proper correction factor applied



Package

3000 fuses on 8mm tape-and-reel on a 7 inch (178mm) reel per EIA Standard 481.

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