ADVANCED SURGETECH MATERIALS

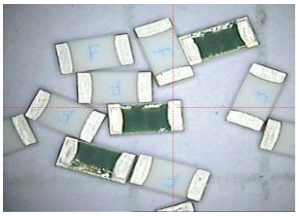
Rev.: Dec., 2022

1206 Slow Blow SMD Fuses

12 111 Series

E355868

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.

	Electrical Characteristics				
Rated Current	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 – 20ms

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 Voltage		Rated Current	Breaking Capacity (A) [1]	Typical Cold. Resistance (mOhms) [2]	Typical Voltage Drop (mV)	Typical Pre-Arcing I^2t (A^2Sec) [3]	Alpha Mark
	DC		(A)					
12 111.4.5	72V 63V	32V	4.5	50A@72Vdc 50A@63Vdc 50A@32Vdc	27	164	2.65	X
12 111.5			5		22	145	4	T
12 111.6			6		14.5	140	12	F
12 111.7			7		10.5	130	14	7
12 111.8	48V 36V	32V	8	200A@48Vdc 200A@36Vdc 200A@32Vdc	7	123	16	V
12 111.10			10		5	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			25		1.55	90	58	L
12 111.30			30		1.32	90	95	Z
12 111.40	36V	32V	40	200A@32Vdc 200A@36Vdc	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℃
3. Typical Pre-arcing I^2t are measured at 10In Current

Choice fuse for surge application (USB charger etc.), make sure the I^2t of fuse is 4 times than surge.

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

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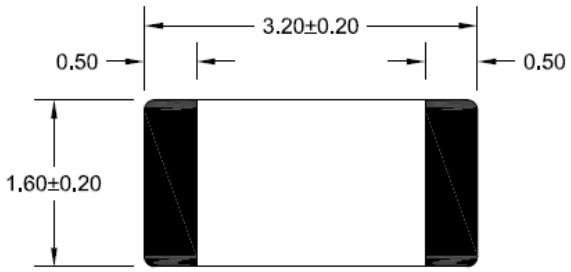
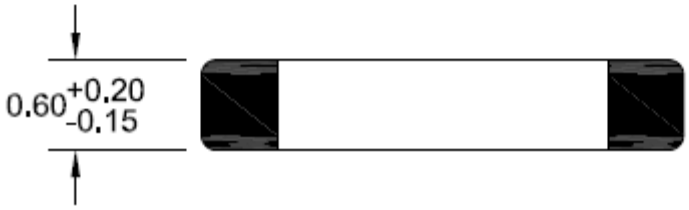
Dimension

Drawing not to scale (Unit: mm)

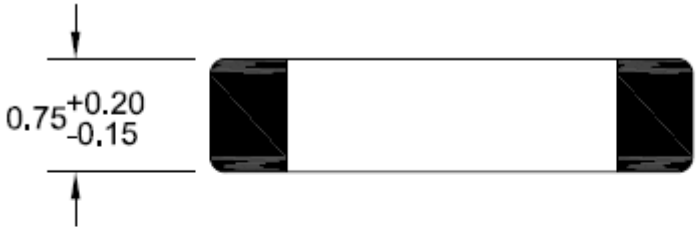
Top view



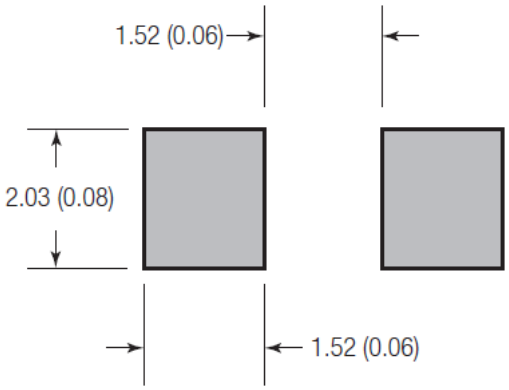
Side view: 4.5A-30A



40A



Recommended land pattern



Unit: mm(inch)

Recommended stencil thickness is 0.15mm (6A-40A)

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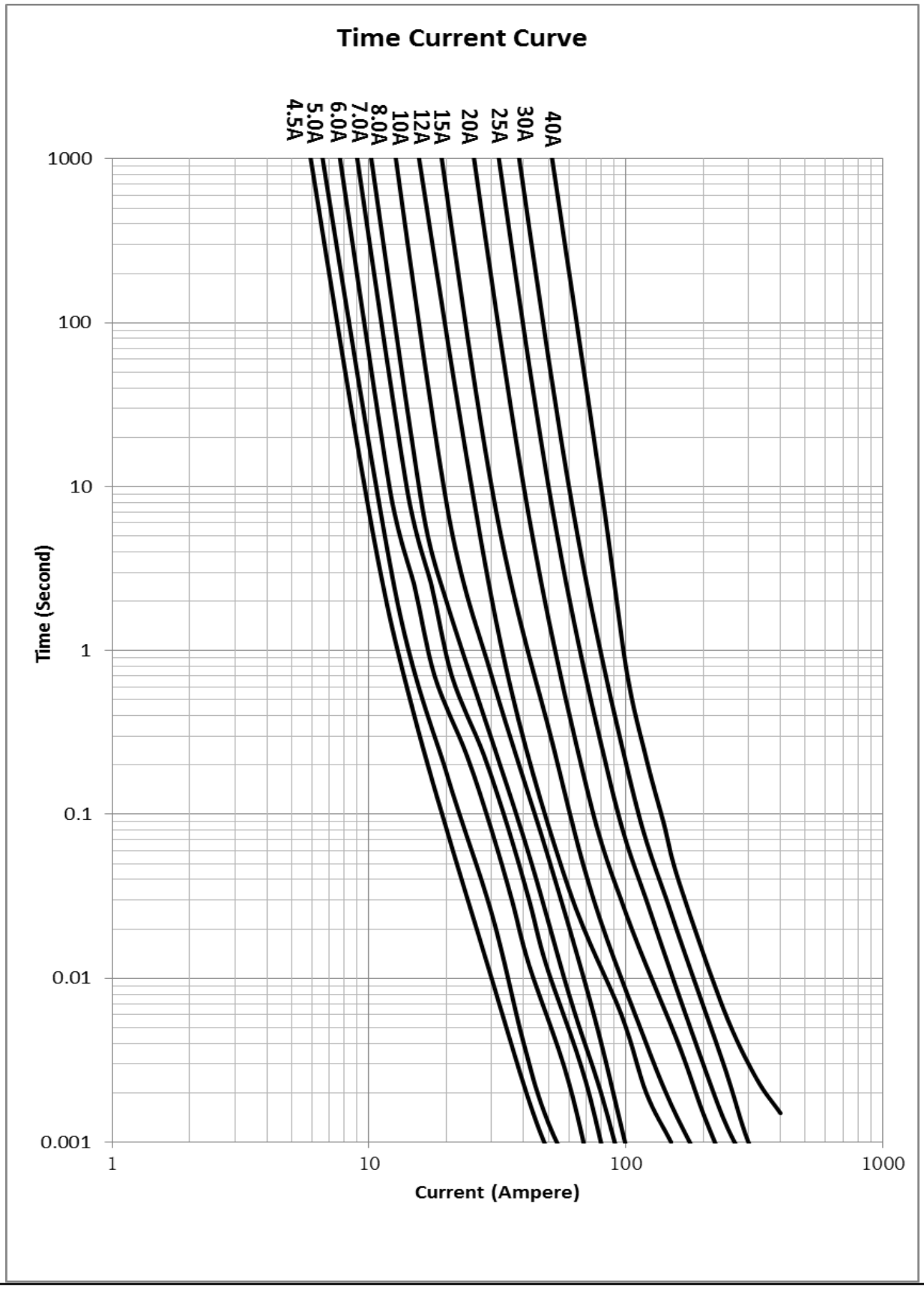

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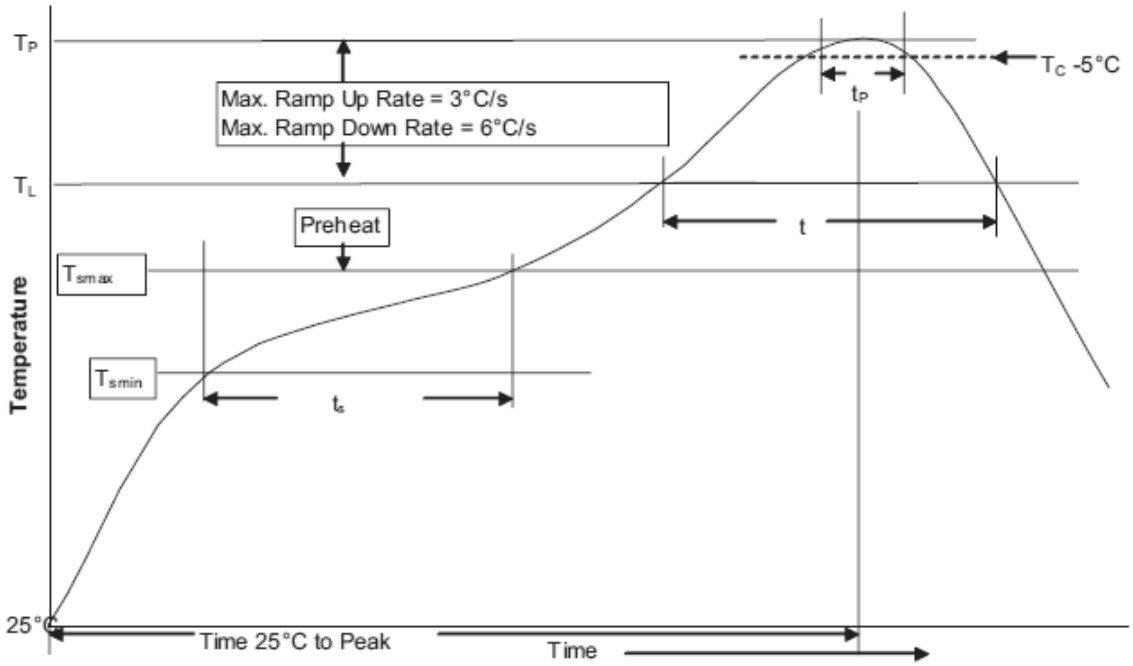
Soldering method

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

Solder reflow profile



Profile Feature		Lead(Pb) free solder
Preheat and soak	• Temperature min.(T_{smin})	150℃
	• Temperature max. (T_{smax})	200℃
	• Time (T_{smin} to T_{smax}) (t_S)	60 - 120 Seconds
Average ramp up rate T_{smax} to T_p		3℃ / Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		217℃ 60 - 150 Seconds
Peak package body temperature (T_P)		260℃
Time (t_P) within 5℃ of the specified classification temperature (T_C)		30 Seconds
Average ramp-down rate (T_P to T_{smax})		6℃ / Second Max.
Time (25℃ to Peak Temperature)		8 Minutes Max.

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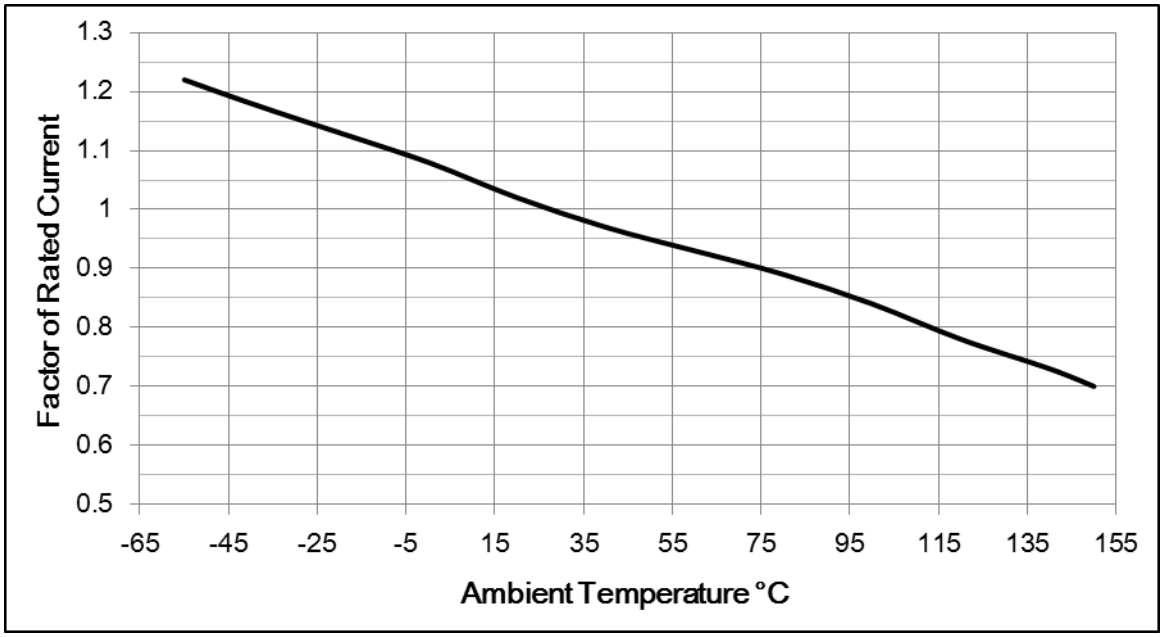
Temperature Derating Curve

Normal ambient temperature: 23+/-3℃

Operating temperature: -55 ~ 150℃, 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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