

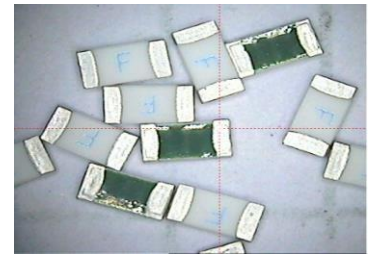
Type 12S

1206 Slow Blow SMD Fuses



Description

12S 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 – 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

Part No.	Rated		Rated Current	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							
12S1450	72V 63V	32V	4.5	50A	27	164	2.65	X
12S1500			5	50A	22	145	4	T
12S1600			6	50A	14.5	140	12	F
12S1700			7	50A	10.5	130	14	7
12S1800	48V 36V	32V	8	200A	7.0	123	16	V
12S2100			10	200A	5.0	110	22	U
12S2120			12	200A	4.3	80	40	W
12S2150			15	200A	3.5	85	45	Y
12S2200			20	200A	2.2	80	50	Q
12S2250			25	200A	1.55	90	58	L
12S2300			30	200A	1.32	90	95	Z
12S2400			36V	32V	40	200A	0.85	95

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.

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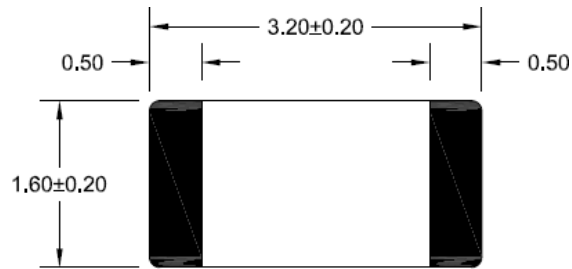
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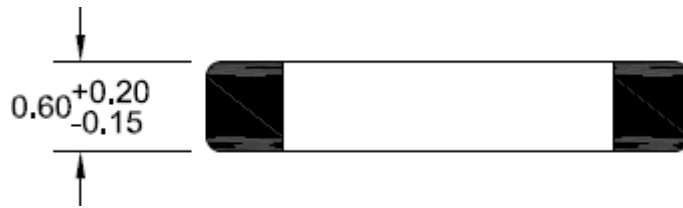
Dimension

Drawing not to scale (Unit: mm)

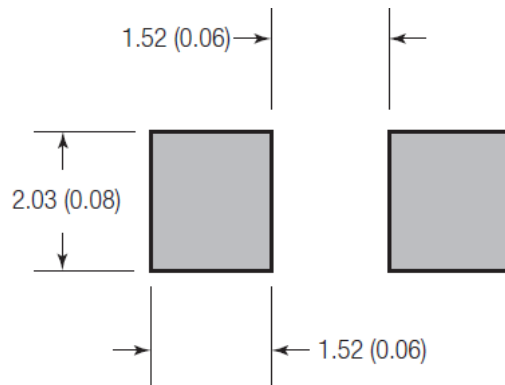
Top view



Side view



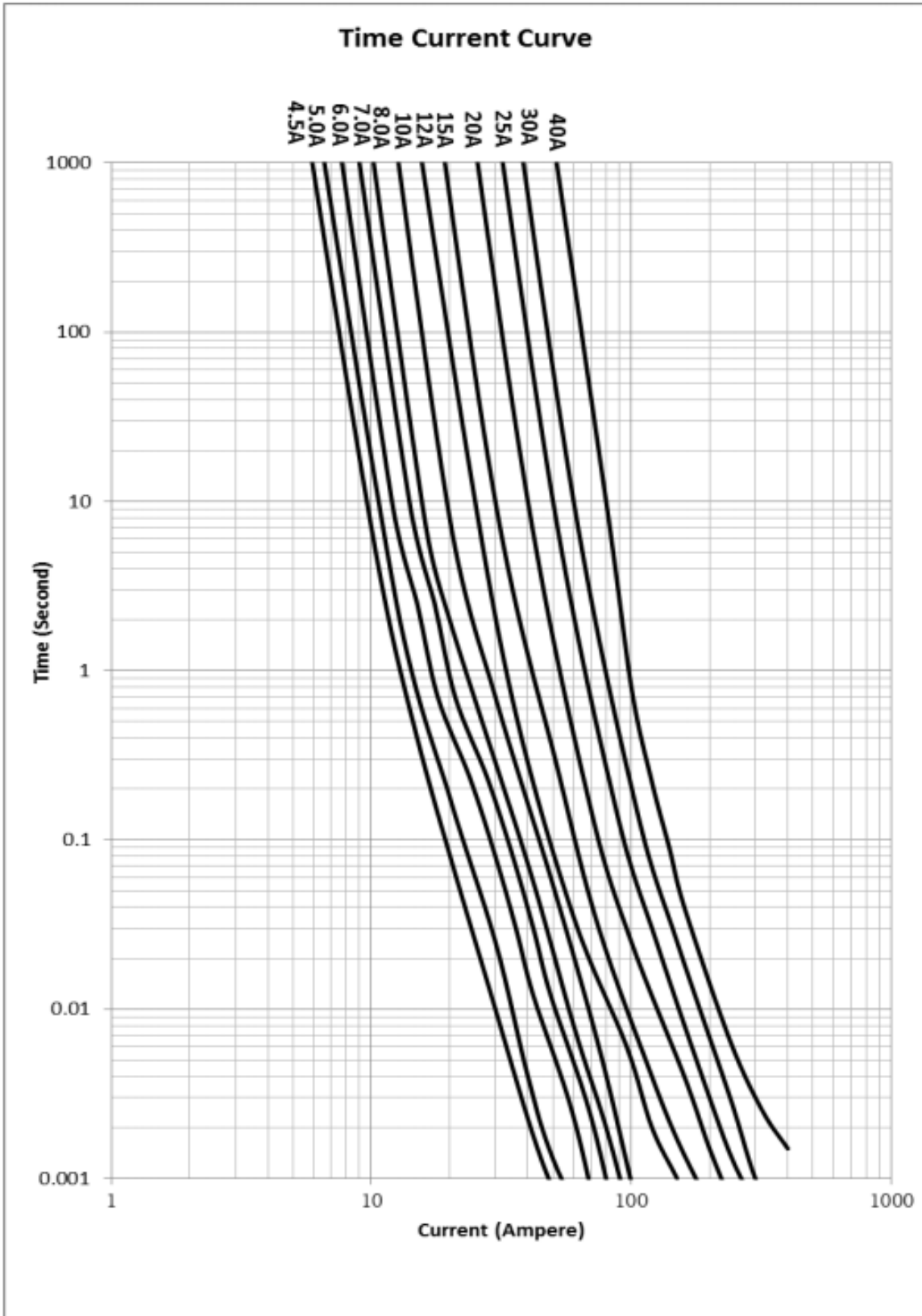
Recommended land pattern



Unit: mm(inch)

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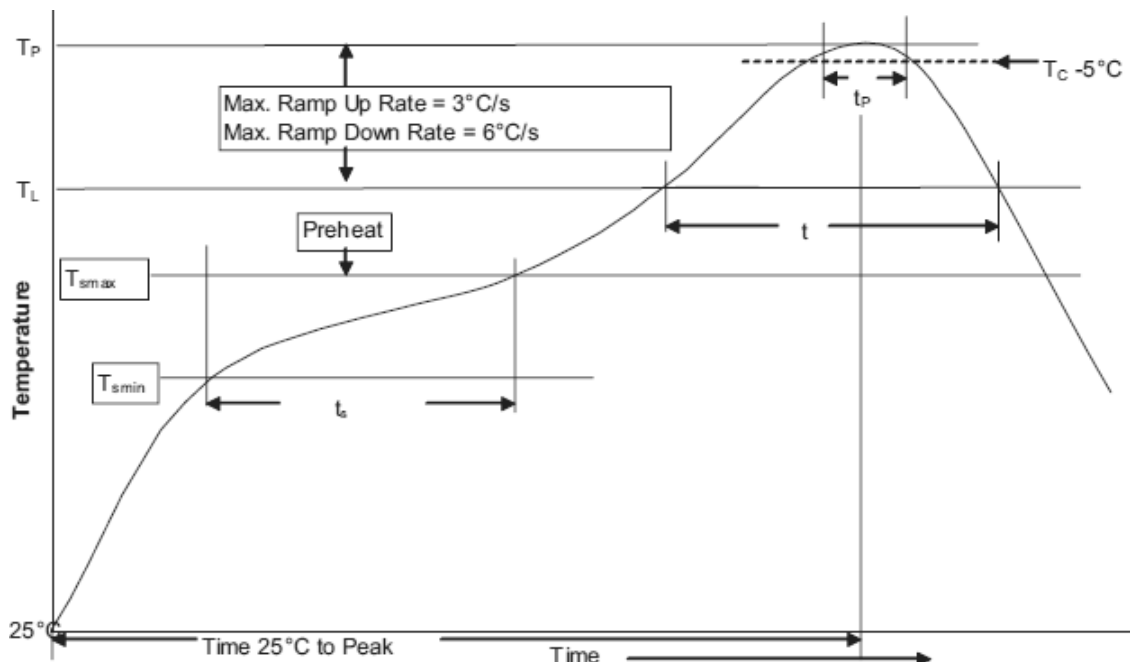
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Soldering method

- 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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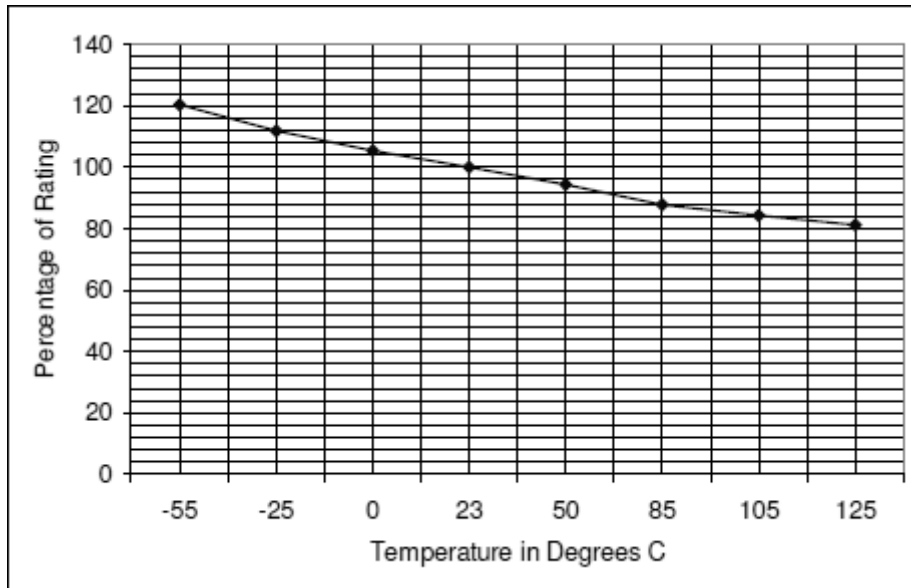
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Temperature Derating Curve

Normal ambient temperature: 23+/-3°C

Operating temperature: -55 ~ 125°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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