

Description

12 110 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	2.0In	2.5In	3.0In	3.5In	10.0In
0.63A~3A	4 hour min.	1sec – 60sec	5 sec max.	0.1sec – 3sec	-	0.2ms – 20ms
3.5~5A	4 hour min.	-	5 sec max.	0.1sec – 3sec	-	0.2ms – 20ms
6A~30A	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)	Typical Cold Resistance	Typical Voltage Drop (mV)	Typical Pre-Arcing I^2t (A ² Sec) ³	Alpha Mark
	Voltage							
	DC							
12.110.0.63	72V	63V	0.63	50A	1080	950	0.009	B
12.110.0.75			0.75	50A	850	900	0.01	0.75
12 110.1			1	50A	480	510	0.11	H
12 110.1.25			1.25	50A	330	500	0.15	H
12 110.1.5			1.5	50A	230	367	0.17	K
12 110.2			2	50A	140	316	0.41	N
12 110.2.5			2.5	50A	80	240	0.68	O
12 110.3			3	50A	50	187	1.5	P
12 110.3.5			3.5	50A	38	180	2	R
12 110.4			4	50A	34	173	2.5	S
12 110.4.5			32V/45V ⁵	4.5	50A@32Vdc 50A@45Vdc ⁵	25	164	2.65
12 110.5	5	50A@32Vdc			21.5	145	4	T

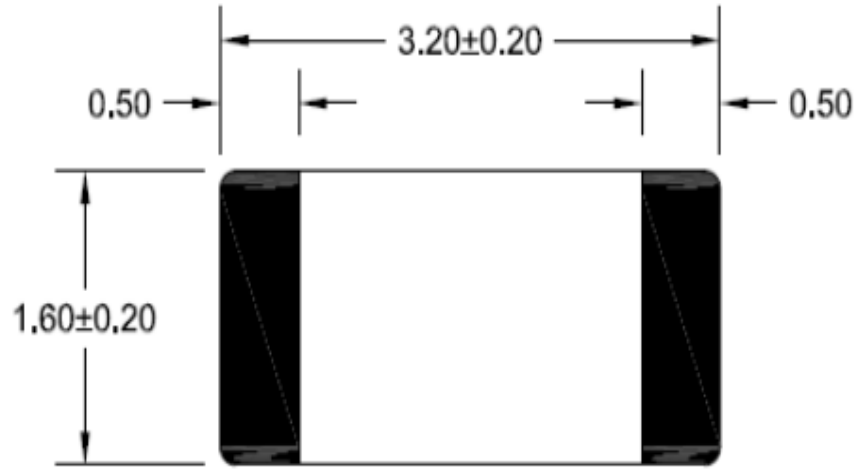
			50A@45Vdc ⁵				
12 110.6		6	50A@32Vdc 50A@45Vdc ⁵	16	140	12	F
12 110.7		7	50A@32Vdc 50A@45Vdc ⁵	12.3	130	14	7
12 110.8	24V 32V	8	300A@24V 150A@32V ⁴	10	123	16	M
12 110.10		10	300A@24V 150A@32V ⁴	7	110	22	U
12 110.12		12	300A@24V 150A@32V ⁴	5	85	11.5	12
12 110.12A ⁶		12	300A@24V 150A@32V ⁴	4.5	80	40	W
12 110.15		15	300A@24V 150A@32V ⁴	3.5	78	16.5	15
12 110.15A ⁶		15	300A@24V 150A@32V ⁴	3.0	85	45	Y
12 110.20		20	300A@24V 150A@32V ⁴	3.4	80	50	Q
12 110.25		25	300A@24V 150A@32V ⁴	1.6	90	60	L
12 110.30		30	300A@24V 150A@32V ⁴	1.3	90	100	Z

- DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)
 - DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C
 - Typical Pre-arcing I²t are measured at 10I_n Current
Choice fuse for surge application (USB charger etc.), make sure the I²t of fuse is 4 times than surge.
 - Internal qualification for 8-30A @ 32Vdc, UL Approval is pending.
 - Internal qualification for 4.5A-7A @ 45Vdc, UL Approval is pending.
 - 12 110.12A&15A are higher I²t version than 12 110.12&15.
- Specifications are subject to change without notice. Application testing is strongly recommended.

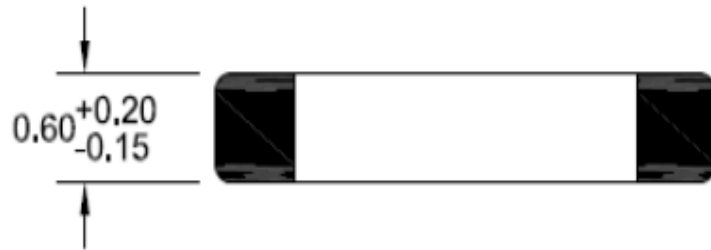
Dimension

Drawing not to scale (Unit: mm)

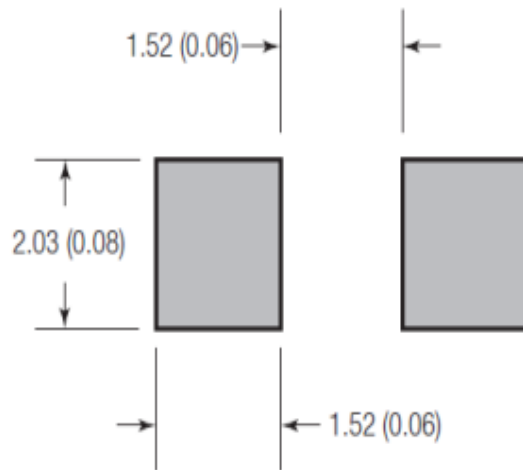
Top view



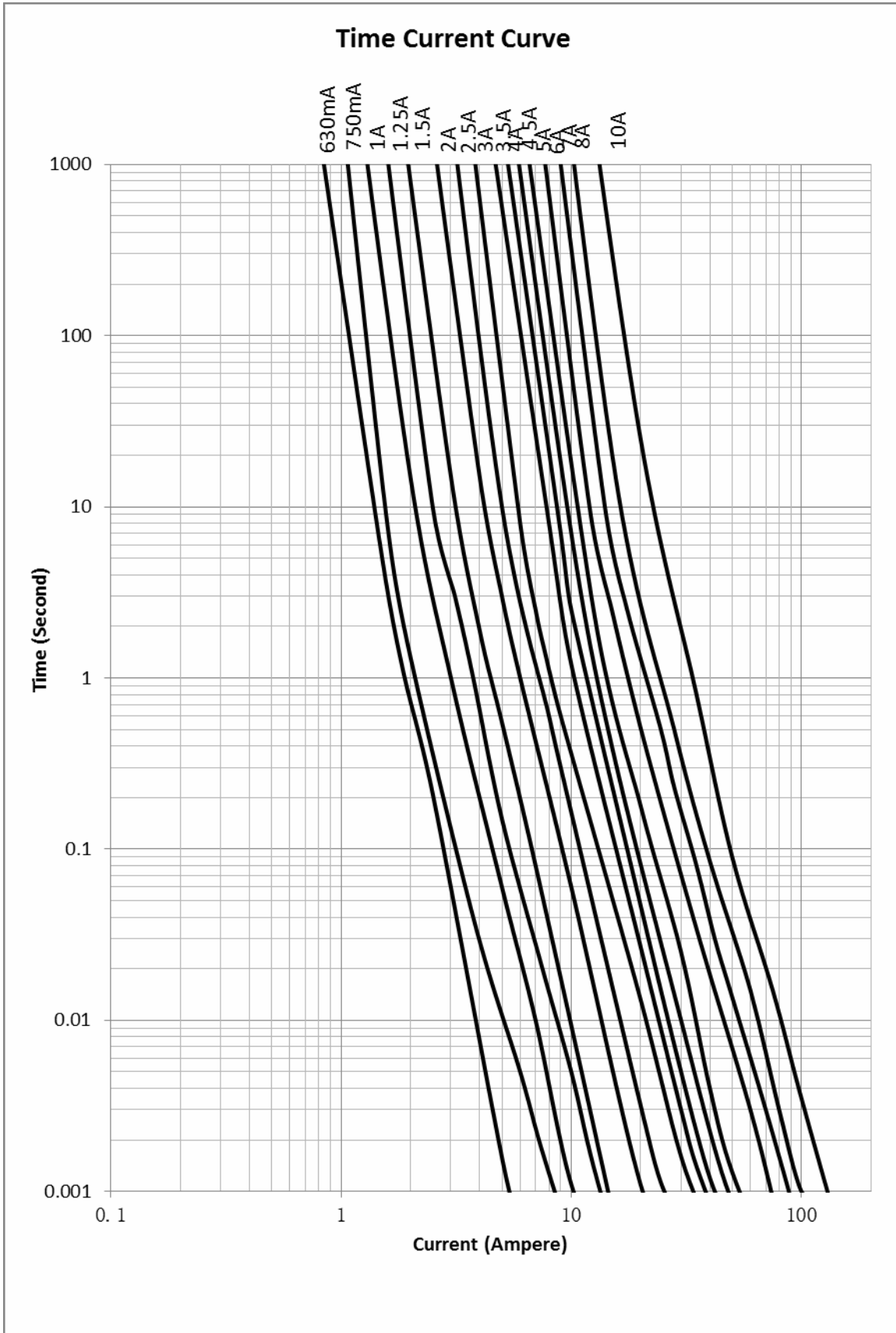
Side view

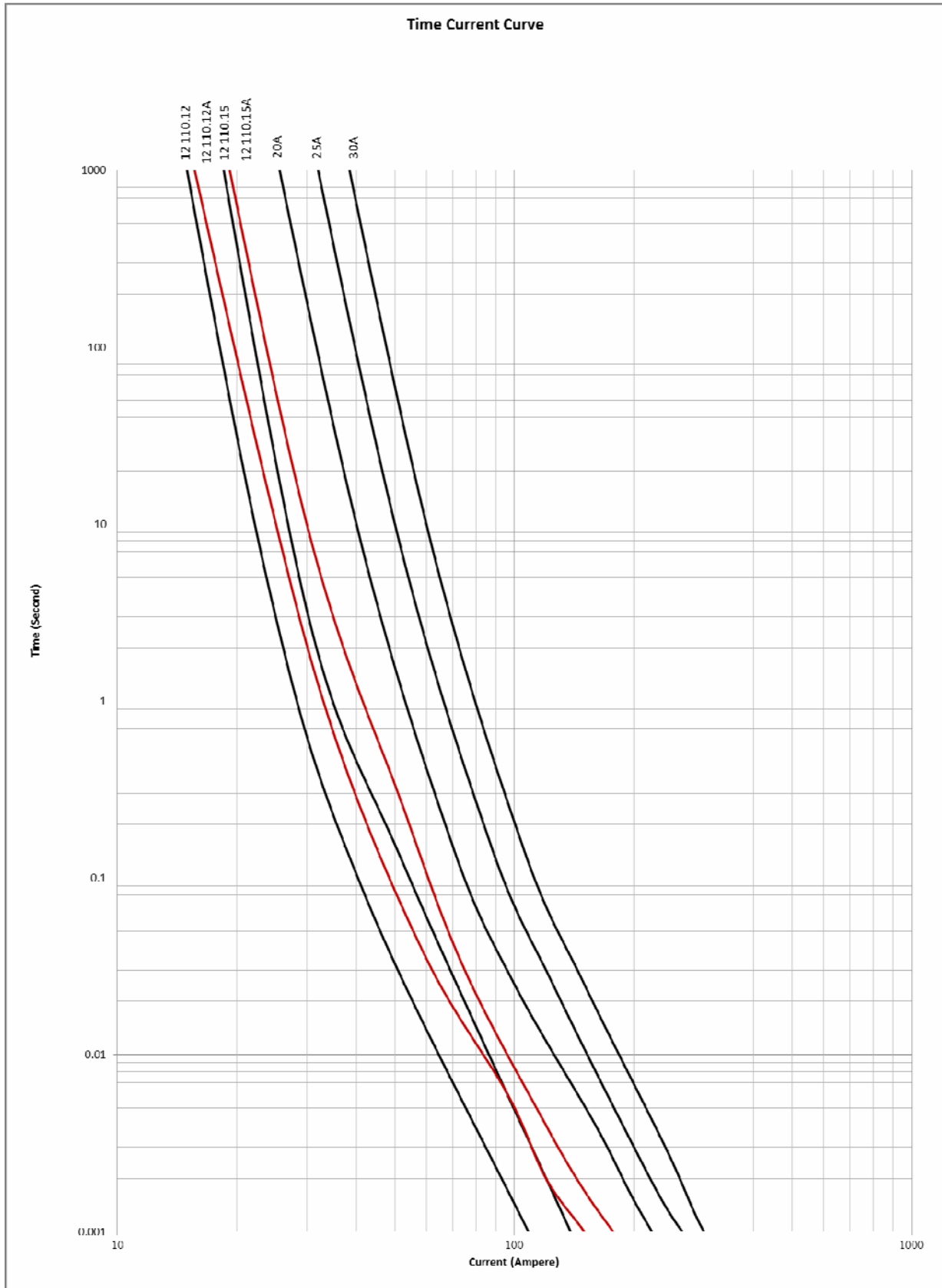


Recommended land pattern



Unit: mm(inch)

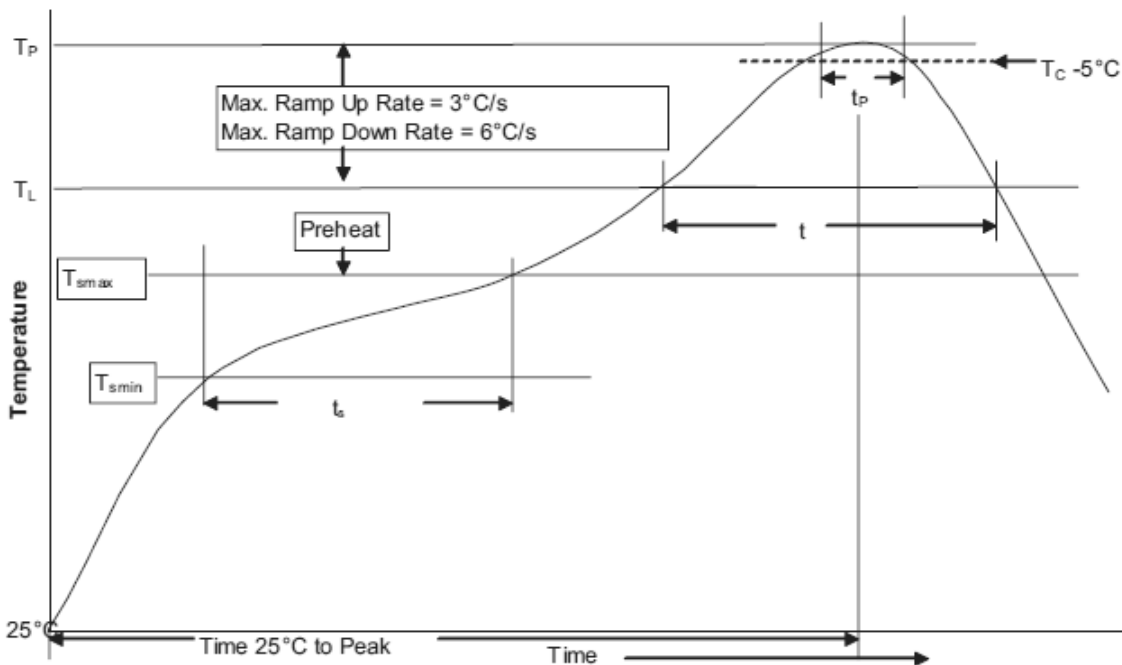




Soldering method

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

Solder reflow profile

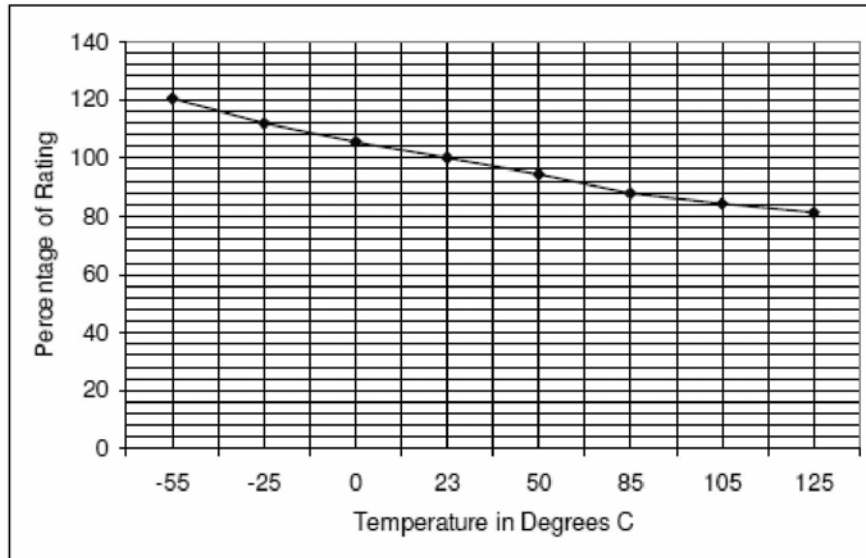


Profile Feature		Lead(Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	150°C
	• Temperature max. (T_{smax})	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60 - 120 Seconds
Average ramp up rate T_{smax} to T_P		3°C / Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		217°C 60 -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

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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