

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.



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

	Electrical Characteristics					
Rated Current	1.0In	2.0In	2.5In	3.0In	3.5In	10.0In
1A~3A	4 hour min.	1sec-60sec	5 sec max.	0.1sec –	-	0.2ms –
3.5A~5A	4 hour min.	-	5 sec max.	0.1sec –	-	0.2ms –
7A~15A	4 hour min.	-	-	-	5 sec max.	0.2ms –

Part No.	Rated Voltage		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
	DC				Min	Max			
12 110 1	72V	63V	1	50A	350	567	510	0.11	H
12 110 1.5			1.5	50A	150	290	367	0.17	K
12 110 2			2	50A	100	163	316	0.41	N
12 110 2.5			2.5	50A	55	100	240	0.68	O
12 110 3			3	50A	32	66	187	1.5	P
12 110 3T	72V		3	50A	32	50	187	1.5	P
12 110 3.5	72V	63V	3.5	50A	24	47	180	2	R
12 110 4			4	50A	21	43	173	2.5	S
12 110 4.5	32V		4.5	50A	18	38	164	2.65	X
12 110 5			5	50A	14	36	145	4	T
12 110 7			7	50A	8	16.5	140	6.6	7
12 110 8	24V		8	300A	5.6	12.6	123	16	M
12 110 10			10	300A	4	9.1	110	18	U
12 110 12			12	300A	3.6	7.6	85	22	12
12 110 15			15	300A	2.4	5.6	78	30	15

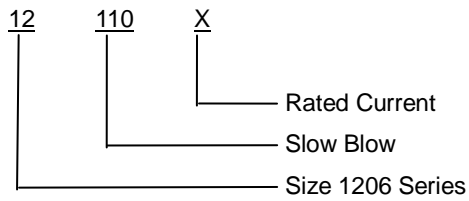
* DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)

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

* Typical Pre-arching 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.

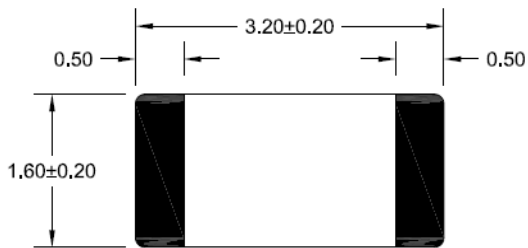
*Part No. Description



Dimension

Drawing not to scale (Unit: mm)

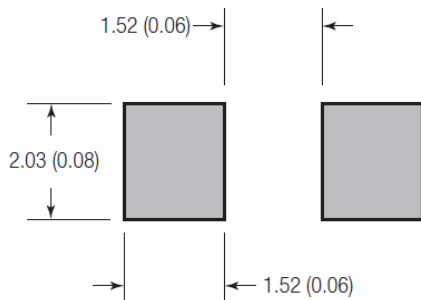
Top view



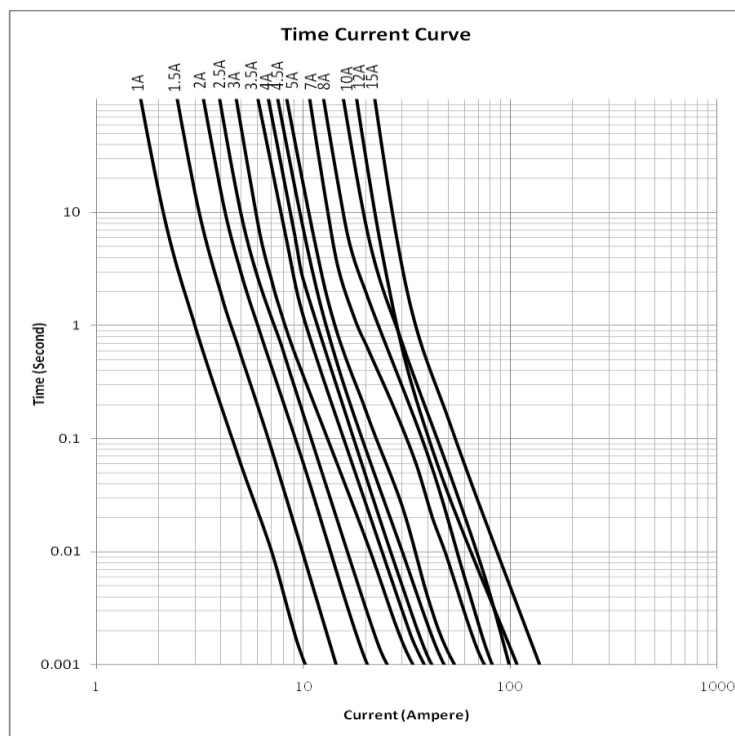
Side view



Recommended land pattern



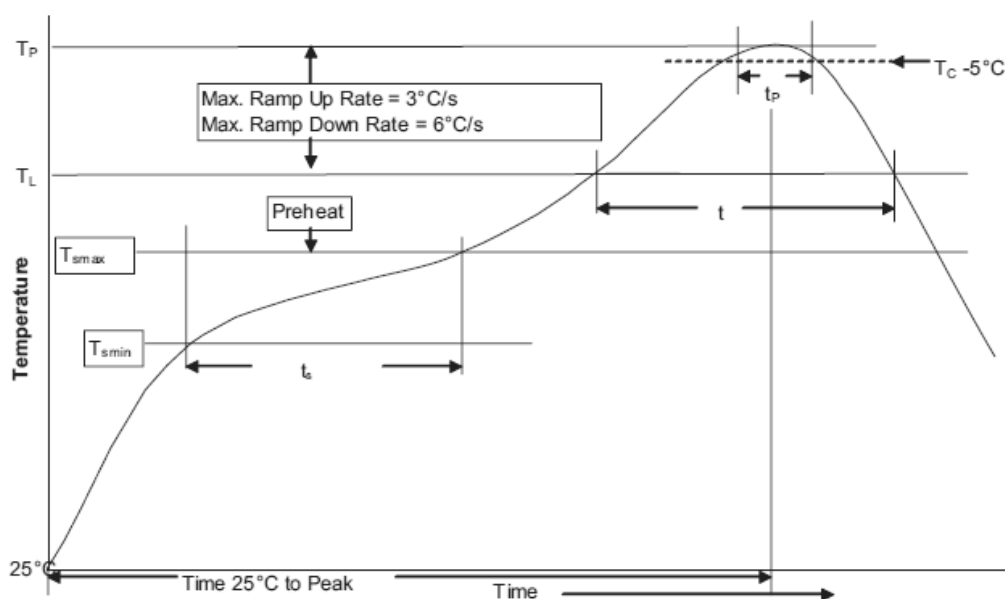
Unit: mm(inch)



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

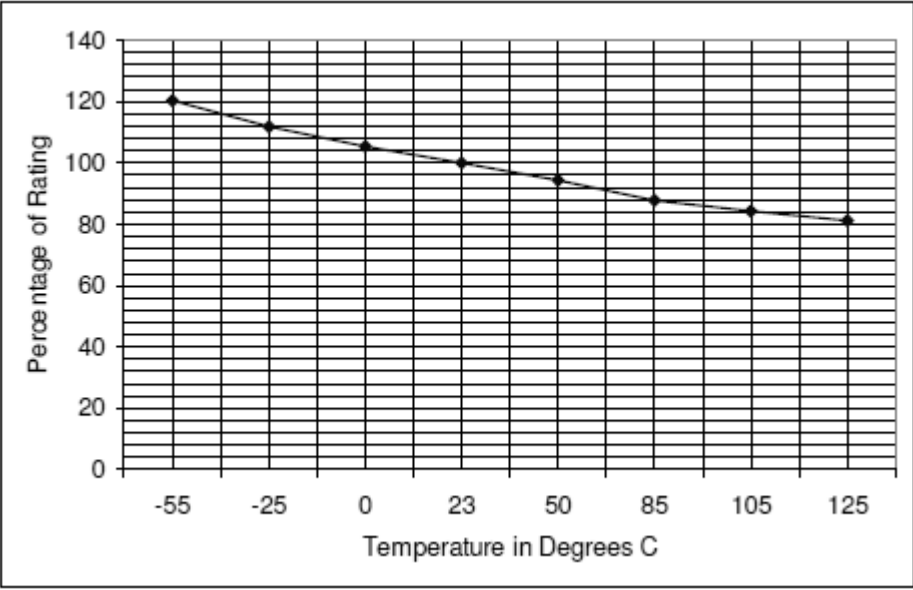


Profile Feature		Lead(Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	150°C
	• Temperature max. (T_{smax})	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60 - 120 Seconds
Average ramp up rate T_{smax} to T_P		3°C / Second Max.
Liquidous temperature (T_L)		217°C
Time at liquidous (t_L)		60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

Temperature Derating Curve

Normal ambient temperature: 23+/-3°C

Operating temperature: -55 ~ 125°C, with proper correction factor applied



Environmental Characteristics

Storage Conditions+40 °C Max. 70% RH Max. Packed in original packaging.

Agency Approvals

- Agency Approvals: UL, CSA
- Regulation/Standard: RoHS, Reach

Package information

Model	Q'ty/Reel
12 110 X	3000 pcs

Note: Reel packaging per EIA-481-1 standard