

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.



SMD-1206

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

- AEC-Q200 Automotive Grade Certified
- Rapid interruption of excessive current
- Compatible with reflow and wave solder
- Ceramic and glass construction
- One time positive disconnect
- Lead Free and Halogen free material

Specifications

Part No.	Rated		Rated	Breaking Capacity (A) ¹	Typical Cold. Resistance (mOhms) ²	Typical Voltage Drop (mV)	Typical Pre- Arcing I ² t (A ² Sec) ³
	Voltage		(A)				
	DC						
12.110.0.63	72V	63V	0.63	50A	1080	950	0.009
12.110.0.75			0.75	50A	850	900	0.01
12 110.1			1	50A	480	510	0.11
12 110.1.25			1.25	50A	330	500	0.15
12 110.1.5			1.5	50A	230	465	0.17
12 110.1.75			1.75	50A	180	450	0.20
12 110.2			2	50A	135	316	0.41
12 110.2.5			2.5	50A	75	240	0.68
12 110.3			3	50A	47	187	1.5
12 110.3.5			3.5	50A	38	180	2
12 110.4			4	50A	34	173	2.5
12 110.4.5	32V	24V	4.5	50A@32Vdc 300A@24Vdc	29	164	2.65

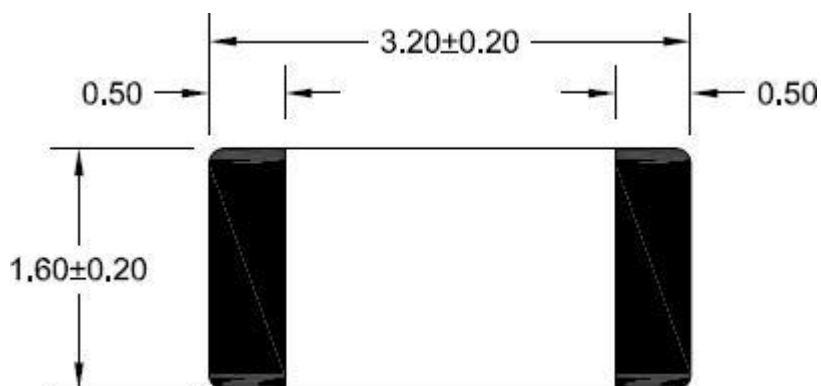
12 110.5			5	50A@32Vdc 300A@24Vdc	24	145	4
12 110.6			6	50A@32Vdc 300A@24Vdc	16	140	12
12 110.7			7	50A@32Vdc 300A@24Vdc	12.3	130	14
12 110.8	32V	24V	8	300A@24Vdc 150A@32Vdc	8.3	123	16
12 110.10			10	300A@24Vdc 150A@32Vdc	6.5	110	22
12 110.12			12	300A@24Vdc 150A@32Vdc	5	85	11.5
12 110.12A ⁴			12	300A@24Vdc 150A@32Vdc	5.3	80	40
12 110.15			15	300A@24Vdc 150A@32Vdc	3.7	78	16.5
12 110.15A ⁴			15	300A@24Vdc 150A@32Vdc	4.5	85	45
12 110.20			20	300A@24Vdc 150A@32Vdc	3.4	80	50
12 110.25			25	300A@24Vdc 150A@32Vdc	1.6	90	60
12 110.30			30	300A@24Vdc 150A@32Vdc	1.3	90	100

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.
4. 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.

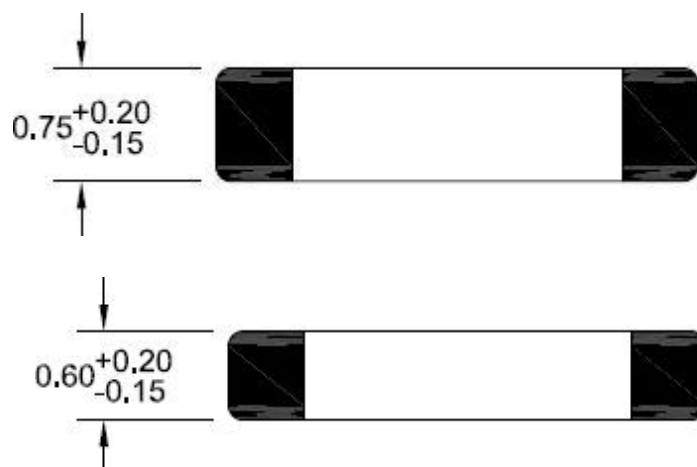
Dimension

Drawing not to scale (Unit: mm) SMD1206

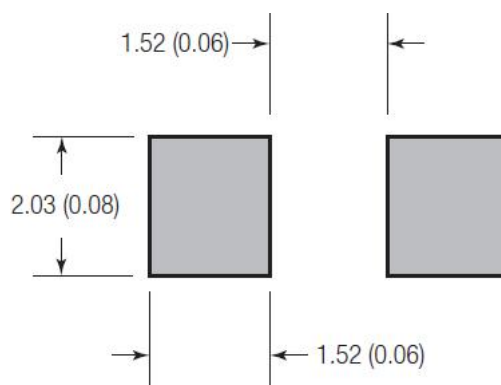
Top view

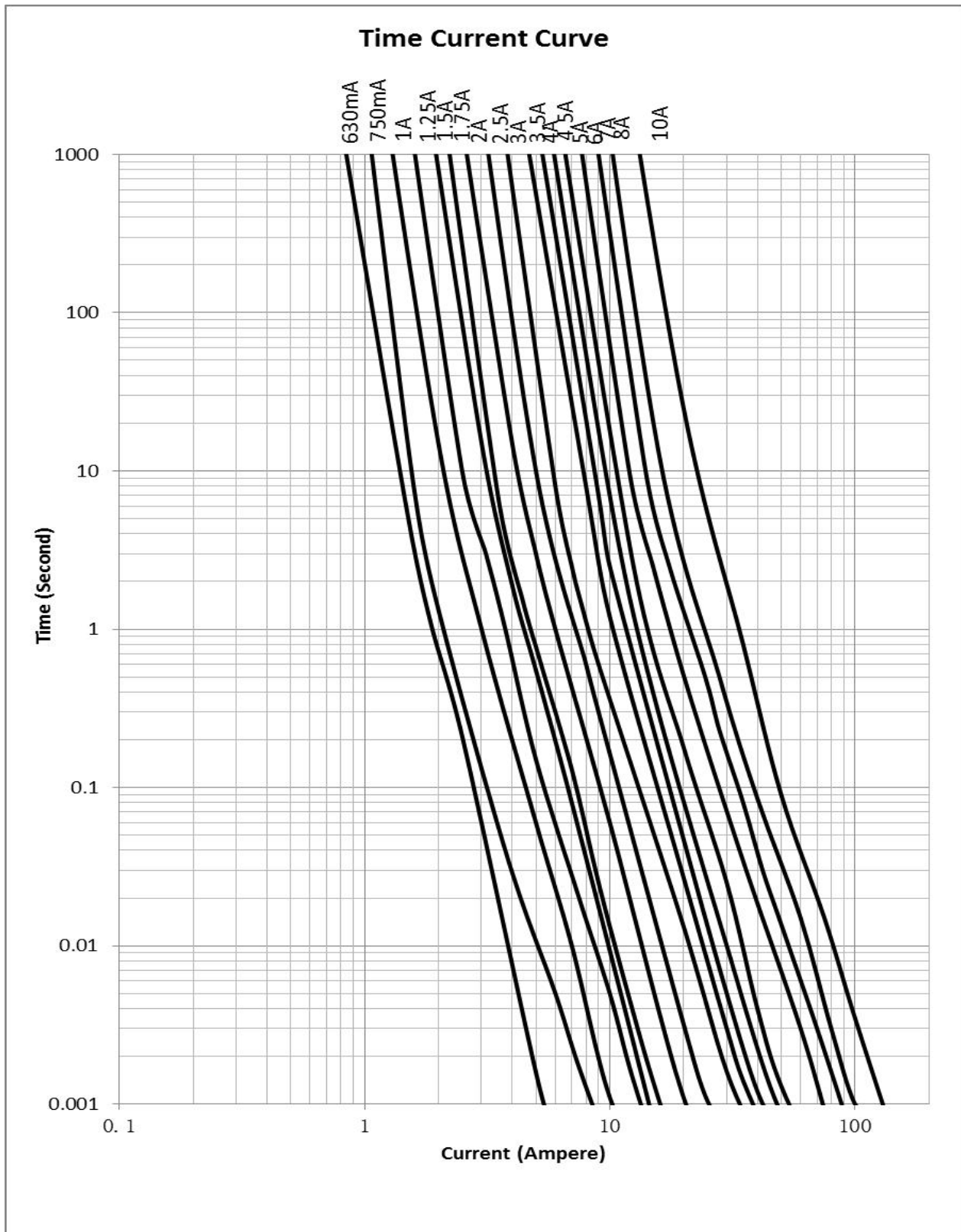


Side view:



Recommended landpattern
Unit: mm(inch)

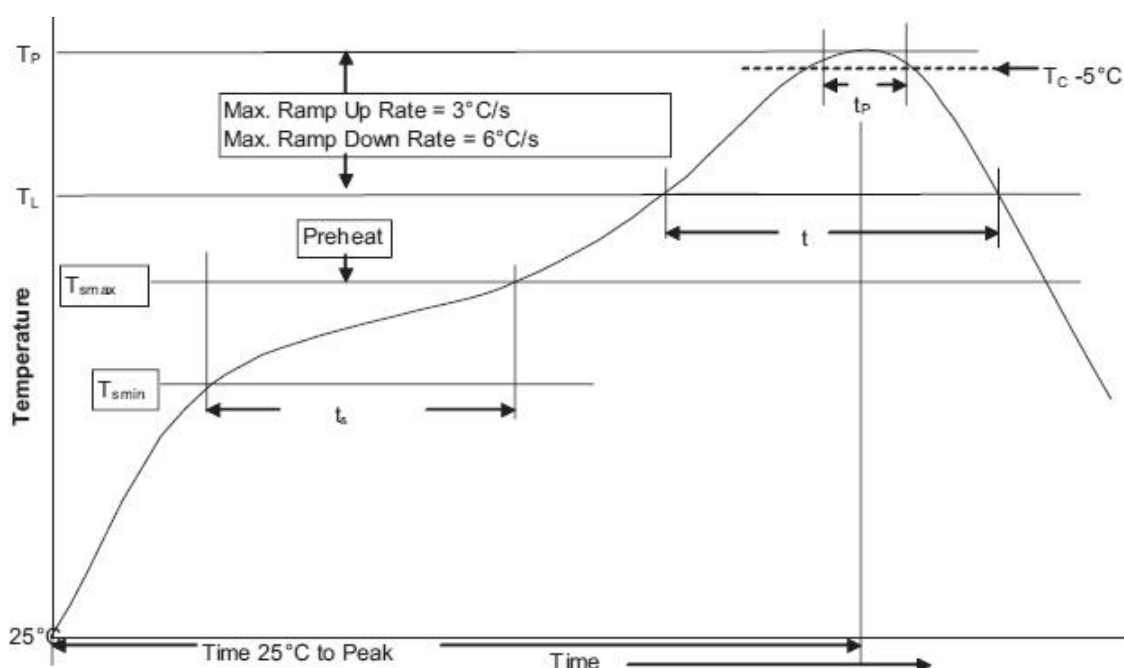




Soldering method

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

Solder reflow profile



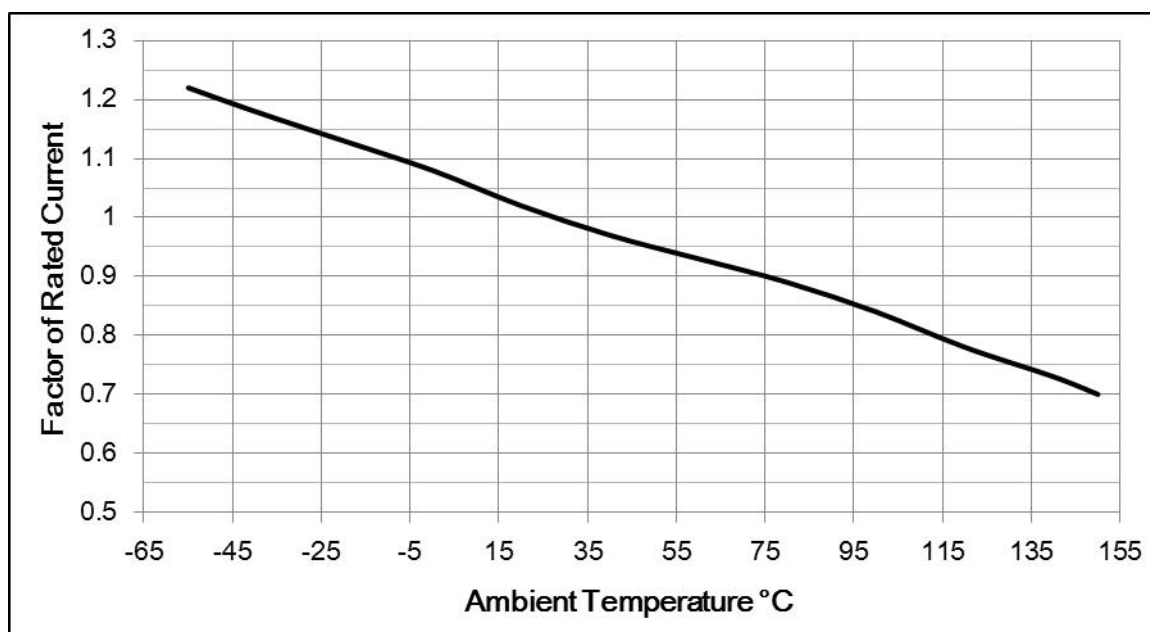
Profile Feature		Lead(Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	150°C
	• Temperature max. (T_{smax})	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60 - 120 Seconds
Average ramp up rate T_{smax} to T_p		3°C / Second Max.

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 ~ 150°C, with proper correction factor applied

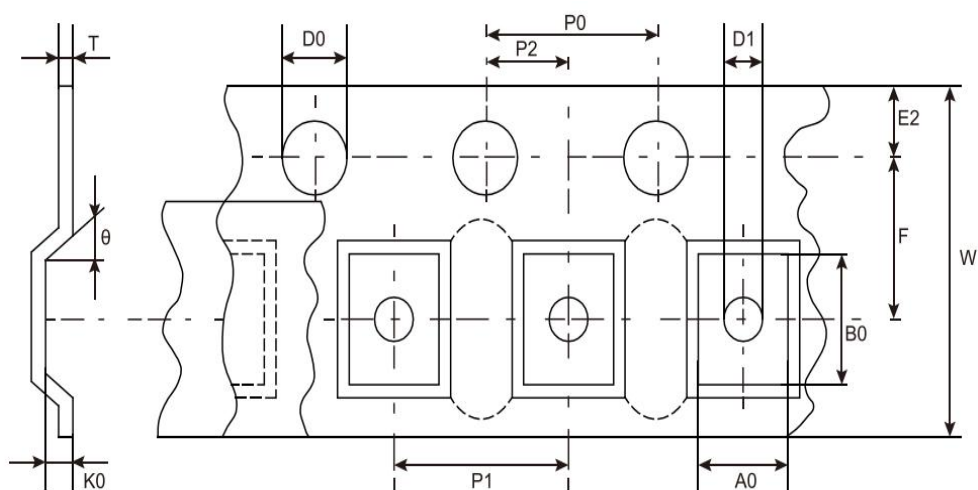


Package

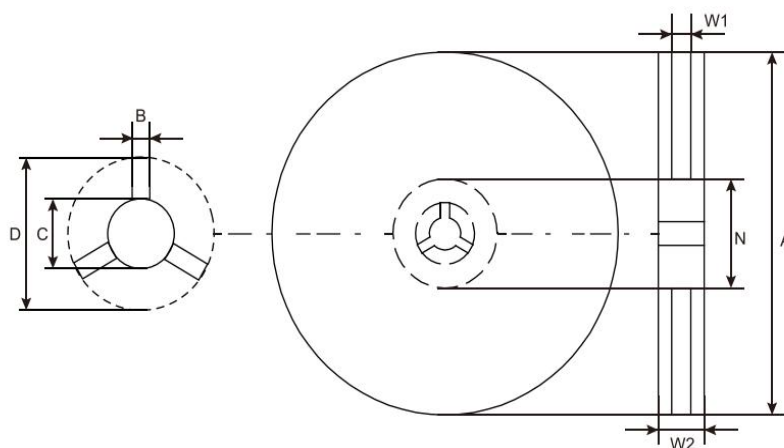
3000 fuses on 8mm tape-and-reel on a 7 inch (178mm) reel per EIA Standard 481.

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Tape and Reel Specification



Item	A0	B0	D0	D1	E2	F	K0
Spec.(mm)	1.92±0.10	3.62±0.10	1.5 ^{+0.1} ₀	1.0 min	1.75 ± 0.10	3.50 ± 0.05	0.87±0.10
Item	P0	P1	P2	T	W	θ	
Spec.(mm)	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.25 ± 0.05	8.00 ± 0.30	6° Max.	



Item	A	B	C	D	N	W1	W2
Spec.(mm)	178±5	1.6 Min.	12.8 Min.	20.8 Min.	58±2	8.4 Min.	12.4 Max.