

Type 12F

1206 Fast-Acting SMD Fuses



Description

12F 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

- 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

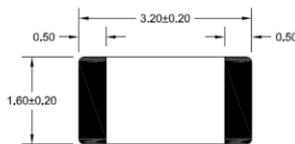
Applications

- Power
- Consumer Electronicsii
- Battery Chargers
- Industrial Controllers

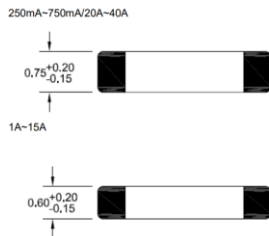
Dimension

Drawing not to scale (Unit: mm)

Top view



Side view:



Electrical Characteristics for Series

Rating Current	100% of Ampere Rating	250% of Ampere Rating	350% of Ampere Rating
250mA~5A	4 Hour, Min	5Sec.Max	-
6A~40A	4 Hour, Min	-	5Sec.,Max

Electrical Characteristic Specifications by Item

Part No	Rated Voltage DC	Rated Current (A)	Breaking Capacity (A) 1	Typical Cold Resistance (mOhms) 2	Typical Voltage Drop (mV)	Typical Pre-Arcing I2t (A2Sec) 3	Alpha Mark
12F0250	72V 63V 48V 36V 32V 24V	0.250	50A@72V 50A@63V 150A@48V 150A@36V 150A@32V 300A@24V	3608	1407	0.0004	.25
12F0375		0.375		1882	718	0.0008	E
12F0500		0.500		1028	650	0.0022	0.5
12F0750		0.750		601	616	0.0057	.75
12F1100		1		490	510	0.10	H
12F1150		1.5		240	367	0.15	K
12F1200		2		132	316	0.41	N
12F1250		2.5		77	240	0.65	O
12F1300		3		48	187	1.39	P
12F1350		3.5		40	180	1.68	R
12F1400		4		35	173	1.73	S
12F1450		4.5		30	164	2.62	X
12F1500		5		25	141	2.89	T
12F1600		6		16.5	142	11	F
12F1700		7		12	140	12.5	7
12F1800		8		8.5	110	14	M
12F2100	48V 36V 32V 24V	10	150A@48V	6.8	100	20	U
12F2120		12	150A@36V	5	85	11.5	12
12F2150		15	150A@32V	3.9	78	16.5	15
12F2200		20	300A@24V	1.8	60	47.17	20
12F2250	36V 32V 24V	25	150A@36V	1.5	57	32	25
12F2300		30	150A@32V	1.25	68	43	30
12F2400		40	300A@24	0.85	95	240	XL

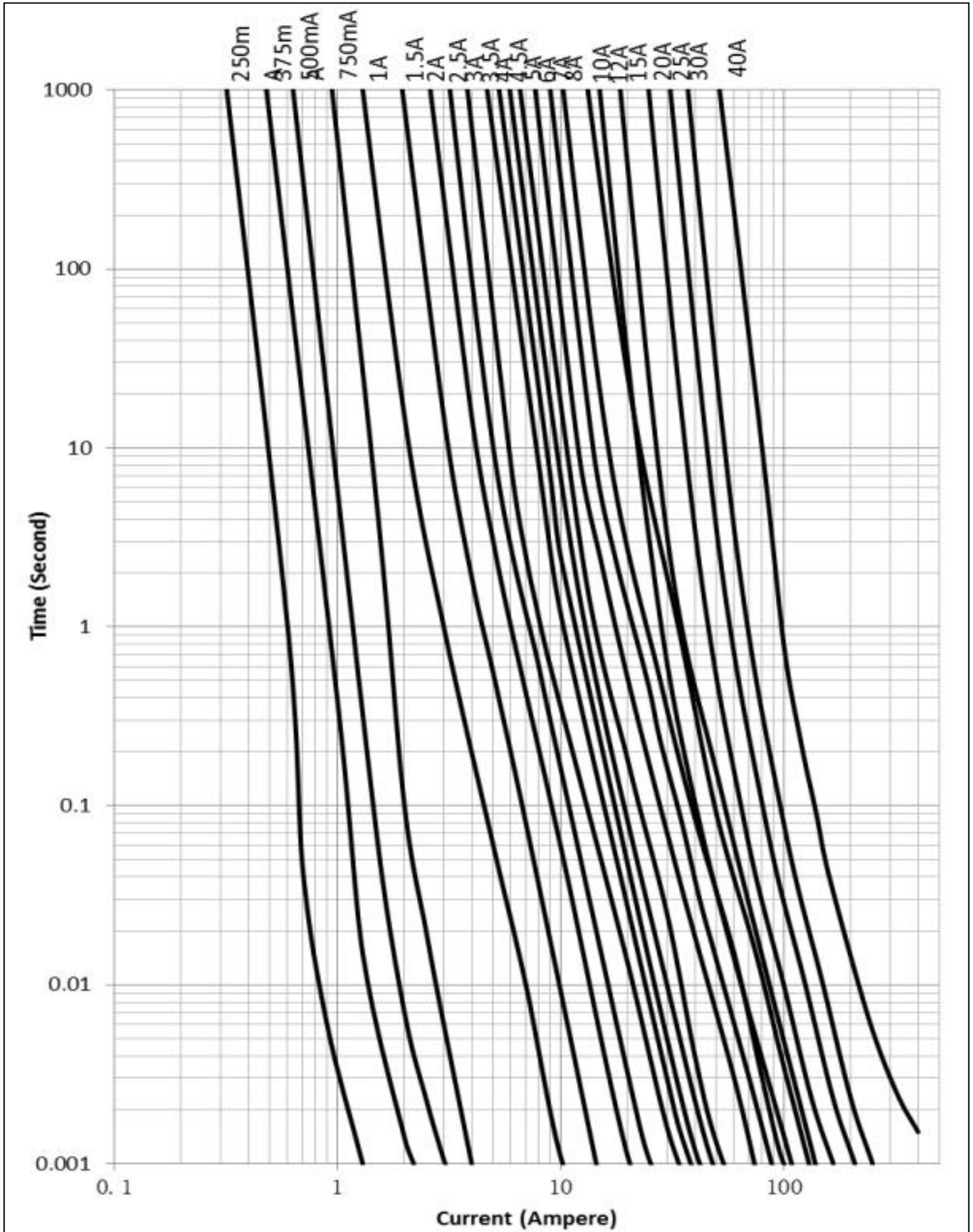
- DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)
 - DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25degrees
 - Typical Pre-arching I2t are measured at 10In Current
- Specifications are subject to change without notice,Application testing is strongly recommended.

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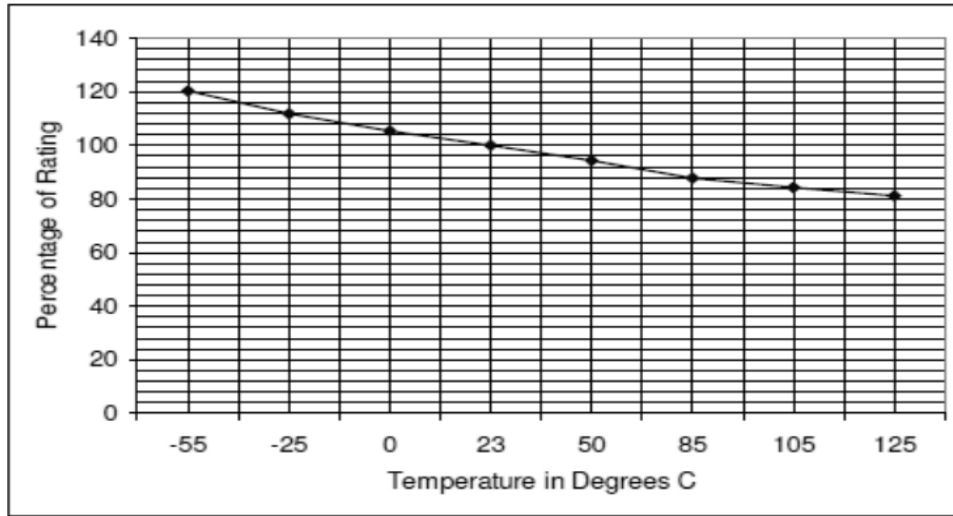
Average Time Current Curve



Temperature Re-rating Curve

* Normal ambient temperature: $23 \pm 3^\circ\text{C}$

* Operating temperature: $-55 \sim +125^\circ\text{C}$, with proper correction factor applied



Soldering Method

■ Wave solder

Reservoir temperature: 260°C

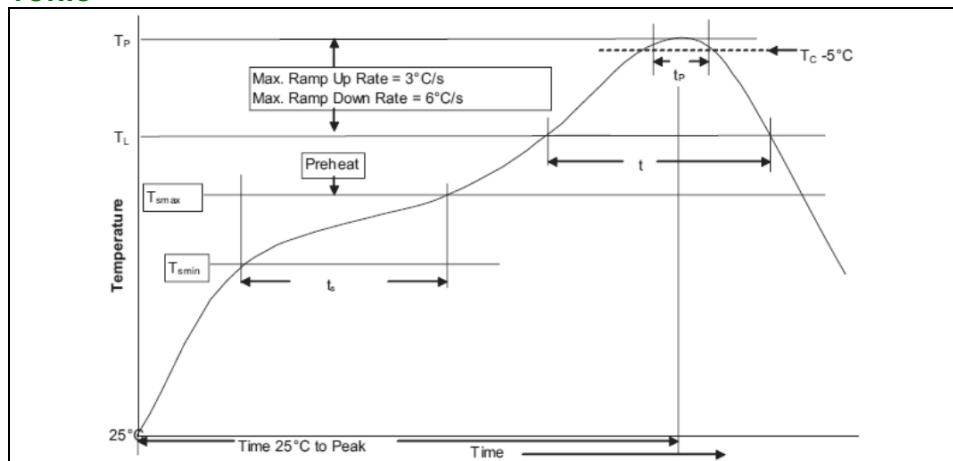
Time in reservoir: 10 seconds maximum

■ Infrared reflow

Temperature: 260°C

Time: 30 seconds maximum

Solder Reflow Profile



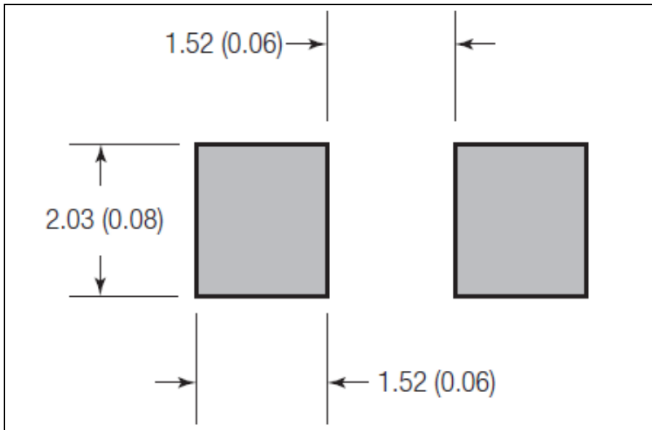
Profile Feature	Lead(Pb)free solder	
Preheat and soak	Temperature min. (T_{smin})	150°C
	Temperature max. (T_{smax})	200°C
	Time (T_{smin} to T_{smax}) (ts)	60 ~ 120 Seconds
Average ramp up rate T_{smax} to T_p	$3^\circ\text{C} / \text{Second Max.}$	
Liquidous temperature (T_L)	217°C	
Time at liquidous (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})	$6^\circ\text{C} / \text{Second Max.}$	
Time (25°C to Peak Temperature)	8 Minutes Max.	

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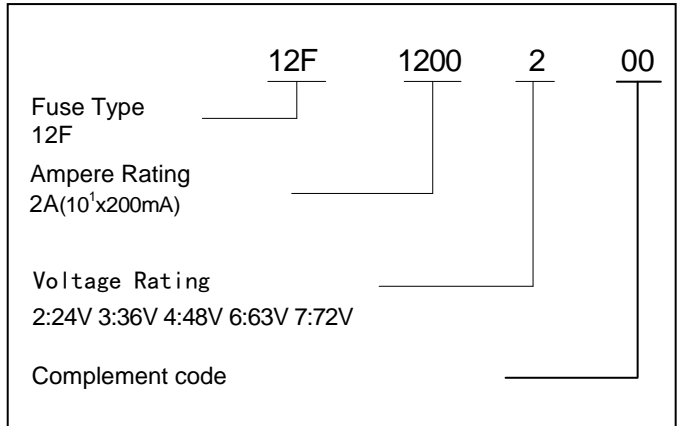
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Recommended land pattern Unit: mm(inch)



Ordering Information



Packaging

Packaging Option	Packaging Specification	Quantity
12F	tape-and-reel	3000

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