

INDIVIDUAL SPECIFICATION SHEET

Product Name: 1206 Fast Acting SMD Fuses**Part Number: F12F40****Revision: A/2****Dongguan TLC Electronic Technology Co., LTD**

No.18,5th GaoLi Road,TangXia Town,DongGuan,GuangDong,P.R China 523710

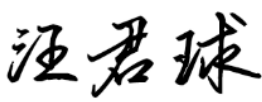
TEL: 86-0769-3892 0511

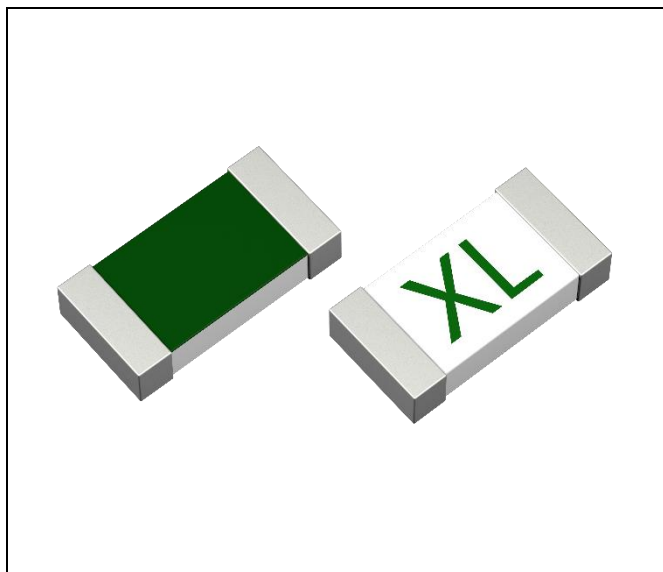
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Rev.	Effective Date	Changed Contents
A/0	2020-9-25	New Release
A/1	2021-3-11	Update Specifications
A/2	2022-9-22	Update Template

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Description

- Thick film manufacturing method, ceramic substrate.
- Fast Acting SMD Fuses for general circuit protection.
- Ultra small physical size, 3.20mm× 1.6mm .
- Excellent heat and shock tolerant.
- -55℃~125℃ operating temperature.

Application

- Power supply and battery pack
- Lamps and LED
- Power tools
- PC related equipment and peripherals (Hard driver, Printer, etc.)
- Digital camera (Digital still camera)
- Game equipment
- LCD monitor and LCD modules
- Wireless base station
- Medical device

Electrical Characteristics

Operating Characteristics			
Model	Rated Current	350%I _n	100 %I _n
F12F40	40A	5s Max	4 hrs Min

I_n : Rating Current

Specifications

Part No.	Rated Voltage	Rated Current(A)	Breaking Capacity ¹	Typical Cold Resistance ² (mΩ)	Typical Voltage Drop (mV)	Typical Pre-Arcing I ² t (A ² Sec) ³	Marking
F12F40	24V DC	40	140A@24Vdc 100A@24Vdc 80A@24Vdc	0.85	49.3	240	XL

Note

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

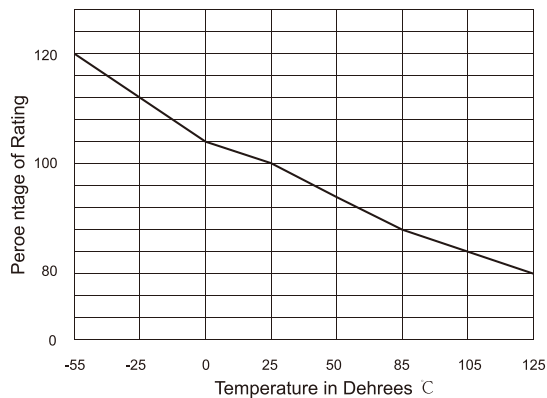
2.DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25℃

3.Typical Pre-arcing I²t are measured at 10I_n Current

Temperature-Current Curve

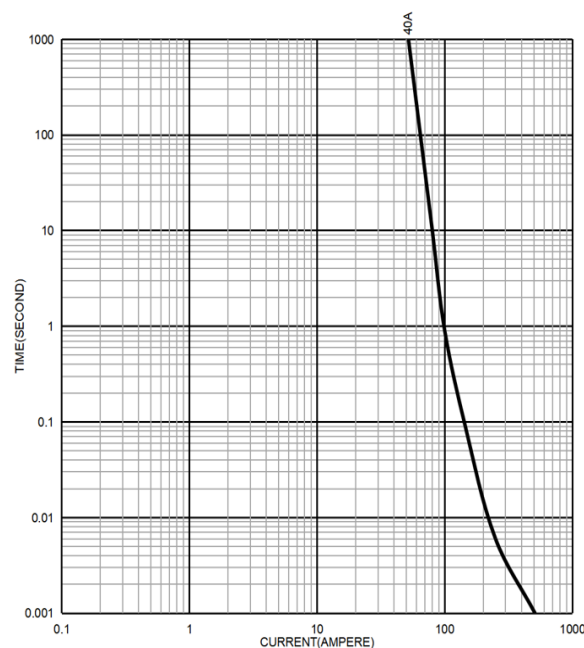
When choosing the fuse's specification, if the operating environmental temperature beyond the scope from 20~26℃, you should consider the environmental temperature's affection to fuses.

please refer Temperature-Current curve:

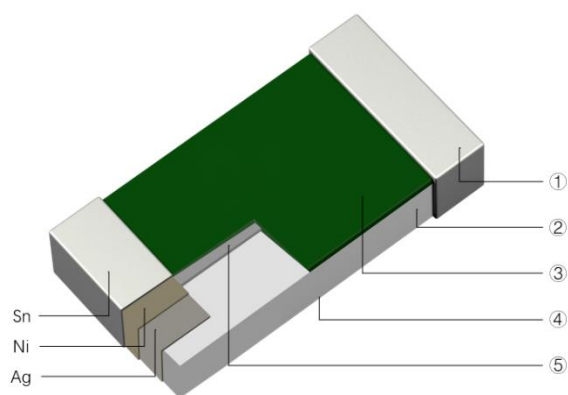


Pre-Arcing Time-Current Characteristics

Time-Current Curve

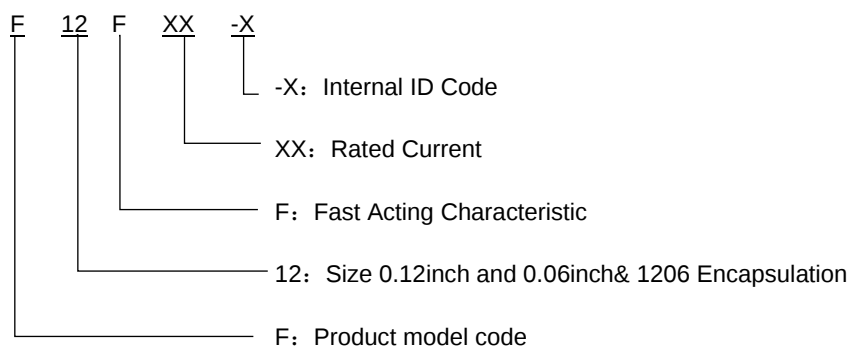


Product structure and materials

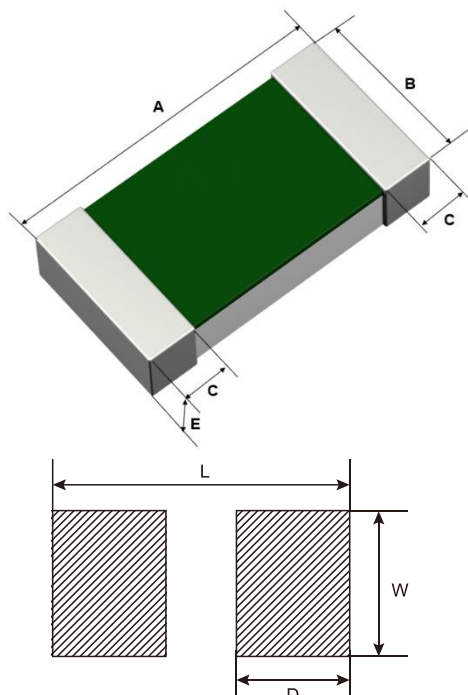


No.	Component	Materials
①	Terminal & pad	Ag / Ni / Sn
②	Substrate	Alumina Ceramic
③	Protective Overglaze	Glass
④	Marking	Glass
⑤	Fuse element	Silver

Product Model and Code



Shape & Dimensions



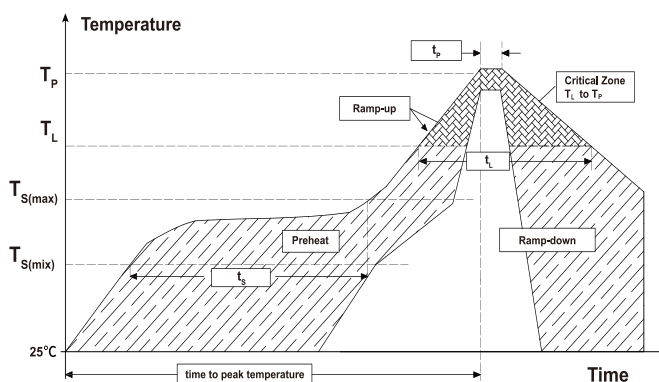
Model	F12F series
A	3.20 ± 0.20 mm
B	1.60 ± 0.20 mm
C	0.50 ± 0.20 mm
E	0.70 ± 0.20 mm

Recommended Size of the Pad			
L	W	D	t
4.56mm	2.03mm	1.52mm	≥35μm

t : Thickness of pad metal

Soldering Parameters

Reflow Methods		
Reflow Condition		Lead (Pb) free solder
Preheat and soak	Temperature min. T_s (min)	150°C
	Temperature max. T_s (max)	200°C
	Time (T_s min to T_s max) (t_s)	60 - 180 Seconds
Average ramp up rate T_s (max) to T_L		5°C / Second Max.
Reflow	Liquidous temperature (T_L)	217°C
	Time at liquidous (t_L)	60 - 150 Seconds
Peak package body temperature (T_p)		260±0.5°C
Time within 5°C of actual peak temperature (t_p)		10-30 Seconds
Average ramp-down rate		6°C / Second Max.
Time (25°C to Peak Temperature)		8 Minutes Max.
Do not exceed		260°C



Soldering iron welding:

Soldering iron temperature: 350°C
 Welding time: 3 seconds maximum

Wave solder

Reservoir temperature: 260°C
 Time in reservoir: 10 seconds maximum

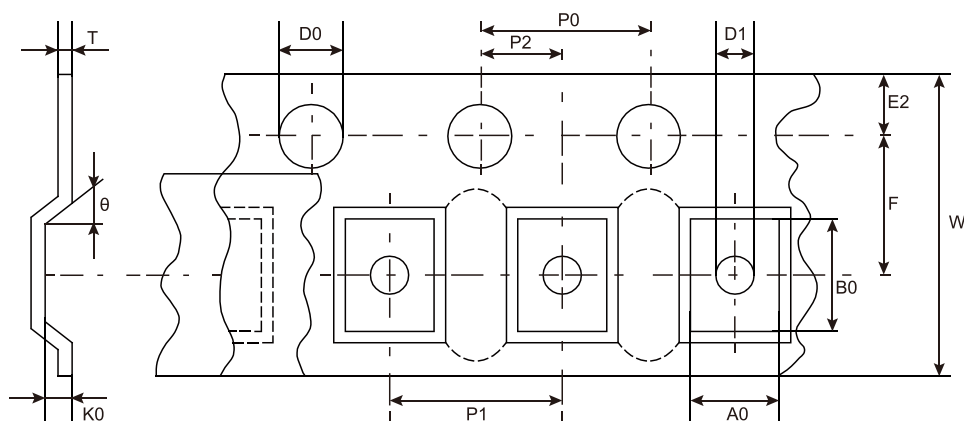
Packing Information & Storage Conditions

Quantity & Weight		
Part No.	Quantity	Weight
F12Fx Series	3000pcs/Reel	97±25 (g)

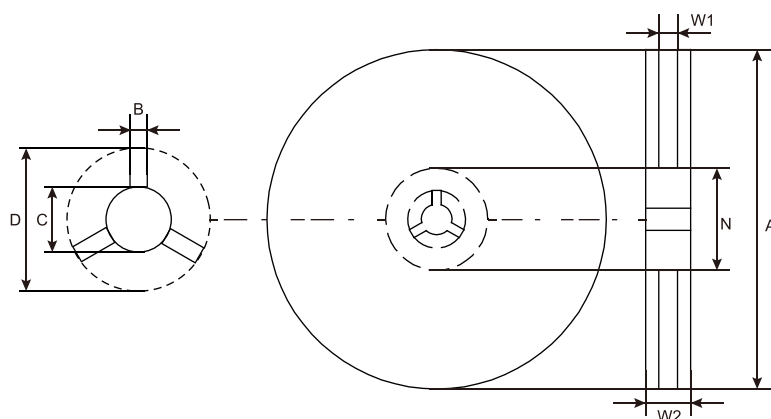
Storage Conditions

Under airtight in temperature 10℃~40℃, relative humidity $\leq 75\%$ can store 2 years.

Without dew in temperature 10℃~40℃, relative humidity be 95% maximum value for 30 days.

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.