

INDIVIDUAL SPECIFICATION SHEET

Product Name: 0603 Fast Acting SMD Fuses**Part Number: F06Fx****Revision: A/2****Dongguan TLC Electronic Technology Co., LTD**

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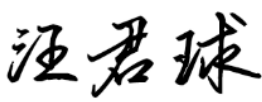
TEL: 86-0769-3892 0511

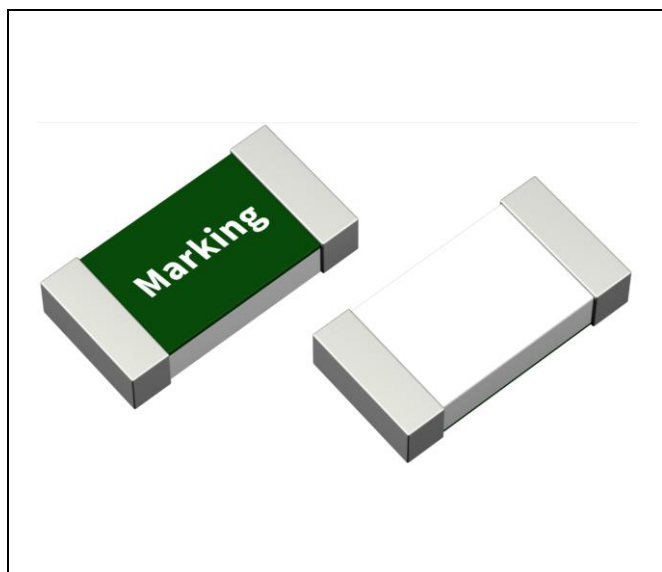
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Rev.	Effective Date	Changed Contents
A/0	2020-9-25	New Release
A/1	2021-3-11	Update Specifications
A/2	2022-9-22	Update Template

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PREPARED BY	APPROVED BY
	



Description

- Thick film manufacturing method, ceramic substrate.
- Fast Acting SMD Fuses for general circuit protection.
- Ultra small physical size, 1.60mm× 0.81mm .
- 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	250%In	350%In	100 %In
F06F 0.25-8	5s Max	—	4 hrs Min

In : 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
F06F0.25	32V DC	0.25	50A@32VDC	3250	893	0.00042	D
F06F0.375	32V DC	0.375		1800	587	0.00093	E
F06F0.5	32V DC	0.5		1070	582	0.001	F
F06F0.75	32V DC	0.75		470	427	0.009	G
F06F1	32V DC	1		250	335	0.011	B
F06F1.5	32V DC	1.5		150	270	0.045	H
F06F2	32V DC	2		78	160	0.115	K
F06F2.5	32V DC	2.5		49	145	0.14	L

Part No.	Rated Voltage	Rated Current	Breaking Capacity ¹	Typical Cold Resistance ² (mΩ)	Typical Voltage Drop (mV)	Typical Pre-Arcing I ² t (A ² Sec) ³	Marking
F06F3	32V DC	3	50A@32VDC	35	130	0.21	O
F06F3.5	32V DC	3.5		28	130	0.5	R
F06F4	32V DC	4		18	120	0.56	S
F06F5	32V DC	5		14	110	1.2	T
F06F6	32V DC	6		11	95	1.7	V
F06F7	32V DC	7		9.5	80	2.3	X
F06F8	32V DC	8		7	75	3.0	Z

Note

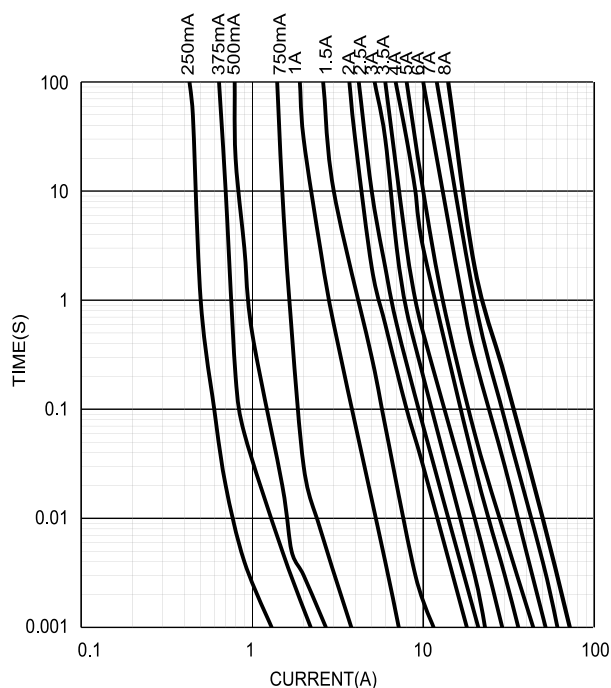
1.DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)

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

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

Pre-Arcing Time-Current Characteristics

please refer Temperature-Current curve:



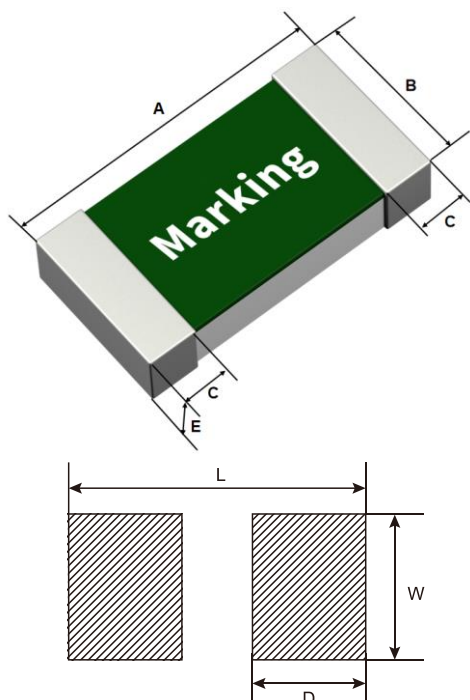
A 3D perspective view of a microchip. The top surface is green and labeled "Marking". The chip is shown with various layers and components labeled with numbers 1 through 5 and chemical symbols Sn, Ni, and Ag. The layers are: 1. Top layer (gray), 2. Marking layer (green), 3. Underlayer (gray), 4. Sn layer (brown), and 5. Ni layer (yellow). The Ag layer is shown as a thin layer on the bottom surface.

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

Diagram illustrating the structure of the product model code (F06FXX-X):

- F**: Product model code
- 06**: Size 0.06inch and 0.03inch & 0603 Encapsulation
- F**: Fast Acting Characteristic
- XX**: Rated Current
- X**: Internal ID Code

Shape & Dimensions



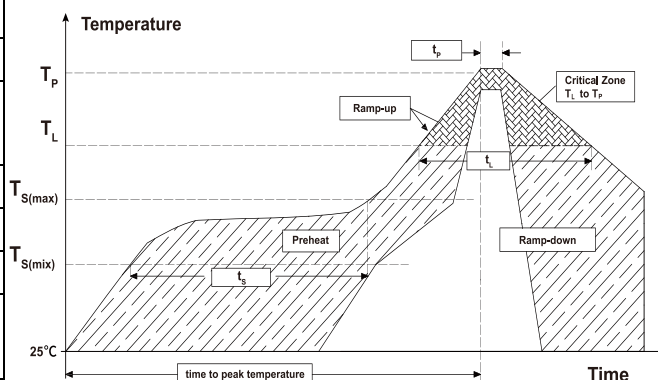
Model	F06F series
A	$1.60 \pm 0.15 \text{ mm}$
B	$0.81 \pm 0.15 \text{ mm}$
C	$0.35 \pm 0.20 \text{ mm}$
E	$0.48 \pm 0.08 \text{ mm}$

Recommended Size of the Pad			
L	W	D	t
2.2mm	1.0mm	0.7mm	$\geq 35\mu\text{m}$

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

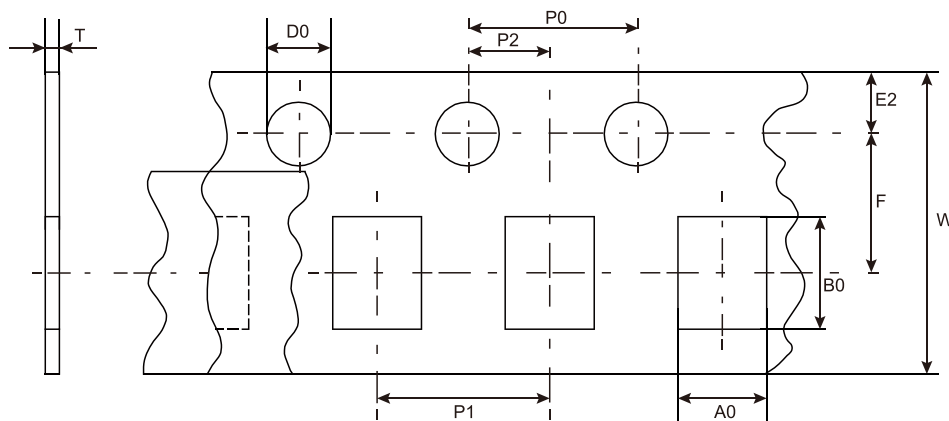
Quantity & Weight		
Part No.	Quantity	Weight
F06Fx Series	5000pcs/Reel	130 ± 20 (g)

Storage Conditions

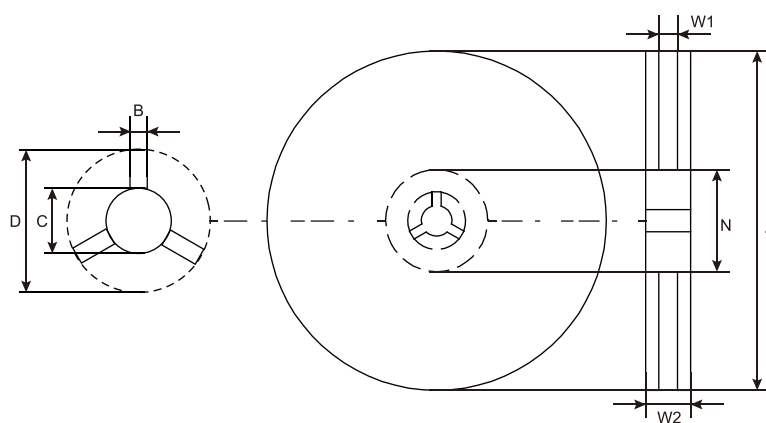
Under airtight in temperature 10℃~40℃, relative humidity $\leq 75\%$ can store 2 years.

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

Tape and Reel Specification



Item	A0	B0	D0	E2	F
Spec.(mm)	1.10±0.05	1.90±0.05	1.55±0.05	1.75±0.10	3.50±0.05
Item	P0	P1	T	W	θ
Spec.(mm)	4.00±0.10	4.00±0.10	0.60±0.05	8.00±0.10	



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.