



深圳市蓝宝安科电子有限公司

Shenzhen LanbaoAnke Electronics Co.,Ltd.

承 认 书

APPROVAL SHEET

编号 NO.	LB-1206FF-01
版次 Ver.	A/3

客户 Customer	
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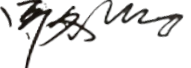
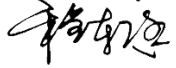
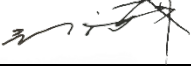
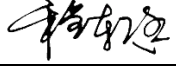
品名 Product	贴片保险丝 SMD FUSE
系列 Series	1206FF系列 1206FF Series

料号Part No.	规格描述Specification	备注Remark
蓝宝 LB FUSE		
客 户 Customer		

供应商-蓝宝 Supplier-LB fuse	零件承认章 Approval Signet	客户 Customer	零件承认章 Approval Signet
制作 Make			
审查 Check			
批准 Approval			

联络Contact			
业务Sales	电话Telephone	手机Cellphone	邮箱E-mail
			lanbaofuse@163.com
零件承认后敬请回签一份给我司留存。			

History of Change变更记录

NO.	日期 Date	描述 Description	版次 Edition	修改 modified by	审核 Checked by
1	2018.6.6	新制订	A/1		
2	2023.5.31	更改为新封面	A/2		
3	2023.12.15	增加9.2 PN编码规则	A/3		
4					
5					
6					
7					
8					
9					
10					
11					

1.适用范围 / SCOPE

本规格书适用于蓝宝公司1206FF系列快熔断型过电流保护贴片保险丝。

This specification is applicable to over-current protection thick film fuse for 1206FF fast acting series produced by LANBAO corporation.

2.产品特点/ Features

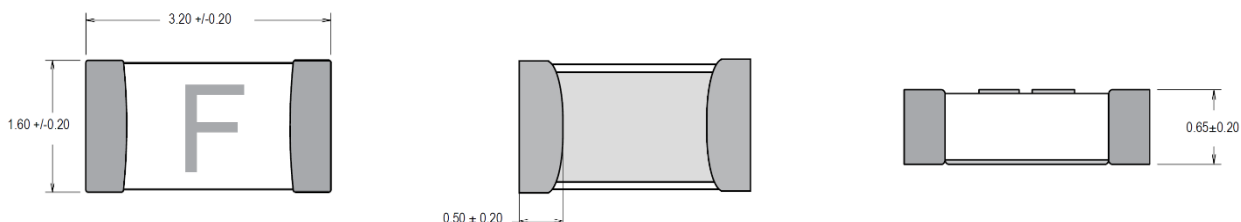
兼容回流焊和波峰焊 / Compatible with reflow and wave solder

陶瓷和玻璃结构 / Ceramic and glass construction

工作温度-55℃ to 125℃ / Operating temperature -55℃ to 125℃

无铅无卤素材料 / Lead Free and Halogen free material

3.产品尺寸/ Dimensions (mm)



说明：元件的陶瓷面印标示，保护玻璃与字符颜色均为蓝色。

Notes: The element is marked with ceramic face print, Protective glass and character color are blue.

4.基本信息/ ORDERING INFORMATION

Part NO. 料 号	Voltage Rating 额定电压	Current Rating 额定电流	Breaking Capacity 分断电流	Typical Cold Resistance (mΩ) 标准冷电阻	Typical Pre-Arcing I ² T (A ² Sec) 熔化热值	Marking 标记
1206FF250mA	24VDC 36VDC 48VDC 63VDC 125VDC 125VAC	250mA	48VDC@200A 125VDC@50A 125VAC@50A	3608	0.00012	.25
1206FF375mA		375mA		1881	0.0003	E
1206FF500mA		500mA		1029	0.0005	0.5
1206FF750mA		750mA		850	0.009	.75
1206FF1A		1A		240	0.0075	H
1206FF1.5A		1.5A		125	0.013	K
1206FF2A		2A		80	0.04	N
1206FF2.5A		2.5A		38	0.045	O
1206FF3A		3A		32	0.065	P
1206FF3.5A		3.5A		25	0.08	R
1206FF4A		4A		20	0.11	S
1206FF5A		5A		13	0.185	T
1206FF6A	24/32/36/48/ 63/125VDC 125V AC	6A	48VDC@200A	15.5	8	F
1206FF7A		7A	72VDC@50A	11.5	10	7
1206FF8A		8A	48VDC@200A	7.6	12	M
1206FF10A		10A	63VDC@50A	5.5	18	U

Part NO. 料 号	Voltage Rating 额定电压	Current Rating 额定电流	Breaking Capacity 分断电流	Typical Cold Resistance (mΩ) 标准冷电阻	Typical Pre-Arcing I ² T (A ² Sec) 熔化热值	Marking 标记
1206FF12A	24/32/36/ 48VDC	12A	48VDC@200A	5	11.5	12
1206FF15A		15A		3.4	16.5	15
1206FF20A		20A		2.2	40	20
1206FF25A	24/32/36/ 48VDC	25A	32VDC@200A	1.5	32	25
1206FF30A		30A32V		1.25	43	30
1206FF40A	24/32/36Vdc	40A24V	24VDC@200A	0.84	160	XL

说明/Notes :

- a. “典型电阻”是在通以小于额定电流的 10%的弱电流条件下量测的阻抗.

Nominal Resistance measured with < 10% rated current ;

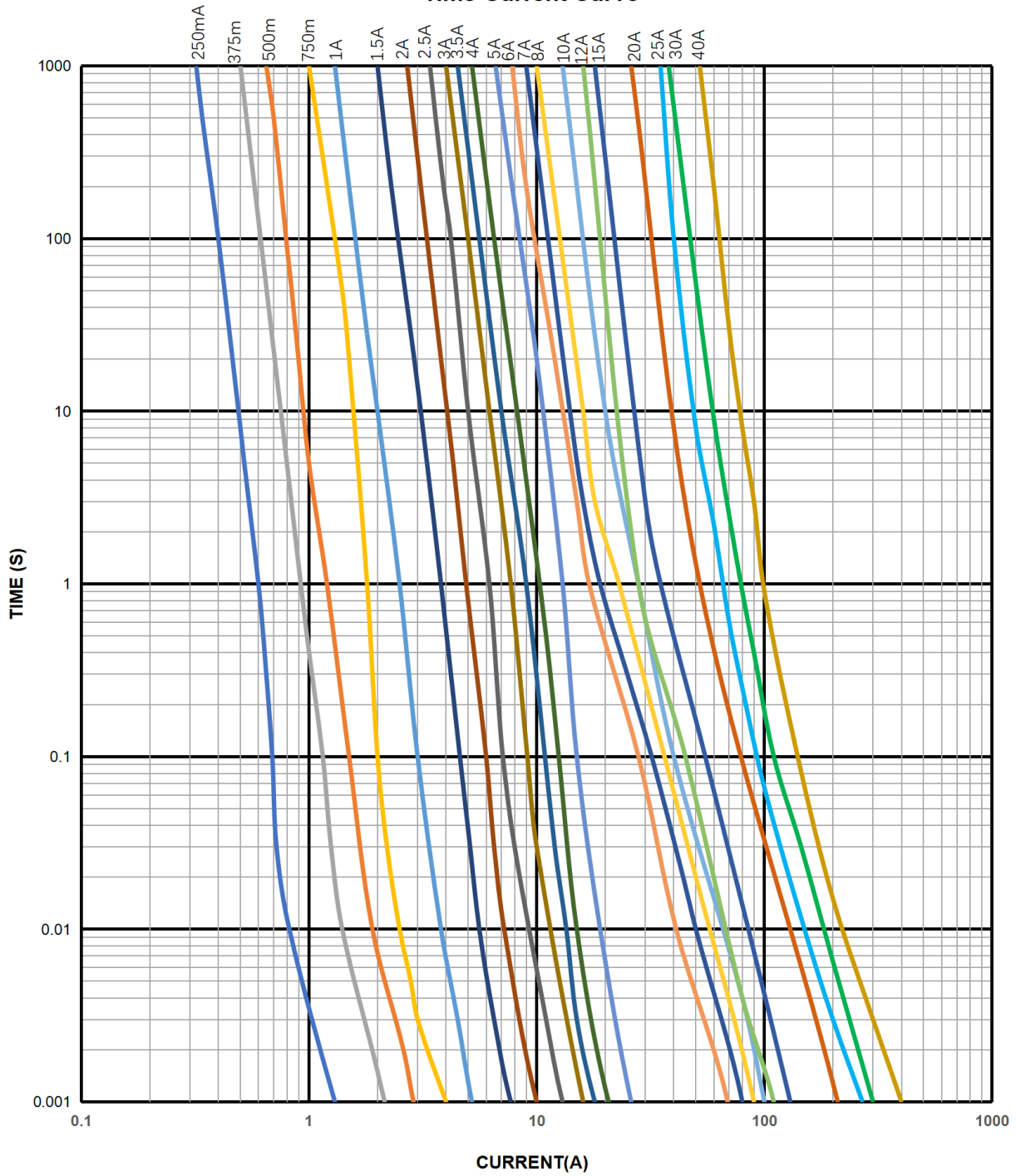
- b. “典型 I²t ”基于通电10倍额定电流时的测量.

Typical Pre-arcing I²t are measured at 10I_n Current

5. 时间-电流特性/ Pre-Arcing Time-Current Characteristics (limits)

Rated Current	% of Current Rating	Clearing Time at 25℃	
		Min	Max
250mA-40A	100%	4hours	/
250mA -750mA	300%	/	5s
1A -5.0A	200%	/	60s
6.0A-40A	300%	/	3s

Time-Current Curve



6. 信赖性测试规范 RELIABILITY TEST STANDARD

#	项目 Item	内容 Contain	判断标准 Criteria
1	分断能力测试 Breaking capacity	参照规格书第4项 Refer to item 4 of the specification	没有持续电弧、燃烧、爆炸现象 No a permanent arcing, ignition, bursting UL248-1/-14
2	可焊性 Solder ability	锡炉温度 $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$, 浸入深度 $2.0\text{mm} \pm 0.5\text{mm}$, 浸锡时间 $5 \pm 0.5\text{s}$, 放在20X放大镜下检查锡覆盖率 $T=245^{\circ}\text{C} \pm 5^{\circ}\text{C}$, $t=5\text{s} \pm 0.5\text{s}$; magnifier: 20X	锡覆盖率 $\geq 95\%$ Cover $\geq 95\%$ MIL-STD-202 Method 208
3	抗焊性测试 Soldering heat resistance	1.将样品焊在对应的PCB板上进行三次回流焊接 /N=3 times 2.测试前后记录样品阻值/Record the resistance	无裂纹/损伤, 标识清晰可辨; 前后阻值偏差 $\leq 15\%$; No crack and damage, Marking is easily legible $\Delta R < 15\%$ MIL-STD-202 Method 210F
4	冷热冲击 Thermal Shock	-65°C停留15min, $\rightarrow 25^{\circ}\text{C}$ 停留5min, $\rightarrow 125^{\circ}\text{C}$ 停留15min; 循环次数为100次 -65°C 15min $\rightarrow 25^{\circ}\text{C}$ 5min $\rightarrow +125^{\circ}\text{C}$ 15min ; 100 cycles	外观无裂纹/损伤, 前后阻值偏差 $< 10\%$ No crack and damage, $\Delta R < 10\%$ MIL-STD-202, Method 213B
5	振动测试 Vibration	频率范围:10~15~10Hz/min 振动振幅:1.5mm Frequency range:10~15~10Hz/min Vibration amplitude:1.5mm	无明显机械损伤 $\Delta R < 10\%$ No mechanical damages MIL-STD-202, Method 201A
6	盐雾试验 Salt spray test	溶液浓度: $5 \pm 0.1\%$; 连续放置48小时 5% salt solution, 48hr	$\Delta R < 10\%$ Legible appearance MIL-STD-202, Method 101
7	弯曲试验 Bending test	以1mm/s的速度将试验板弯曲1mm, 保持时间60s Bending: 1mm, time: 60s	试验前后阻值变化 $\leq 15\%$; 保险丝焊盘无明显的裂缝 $\Delta R < 15\%$, No mechanical damages IEC 60127-4

7. 环境特性 / ENVIRONMENTAL CHARACTERISTIC

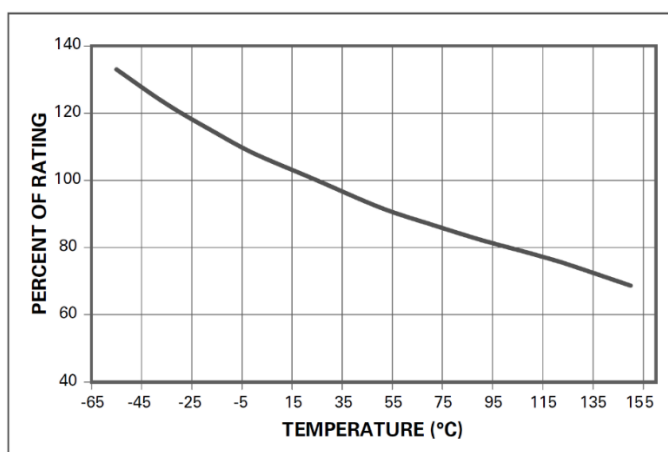
7-1 工作温度范围: $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ / Operating Temperature: $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$.

若贵司工作环境温度超出 $23 \pm 3^{\circ}\text{C}$ 范围, 在选用保险丝规格时, 需考虑操作环境温度对保险丝的影响。

请参照: 温度-电流曲线图。

When choosing the fuse's specification, if the operating environmental temperature beyond the scope from $20 \sim 26^{\circ}\text{C}$, you should consider the environmental temperature's affection to fuses. please refer:

Temperature Re-rating Curve



7-2 存储条件 / Storage Conditions

在温度10°C~40°C、相对湿度≤75%的密闭条件下可存放2年。

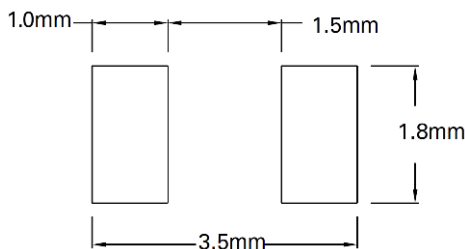
在温度10°C~40°C、相对湿度为95%的非露天下最多可存放30天。

Under airtight in temperature 10°C~40°C、relative humidity ≤75% can store 2 years.

Without dew in temperature 10°C~40°C、relative humidity be 95% maximum value for 30days.

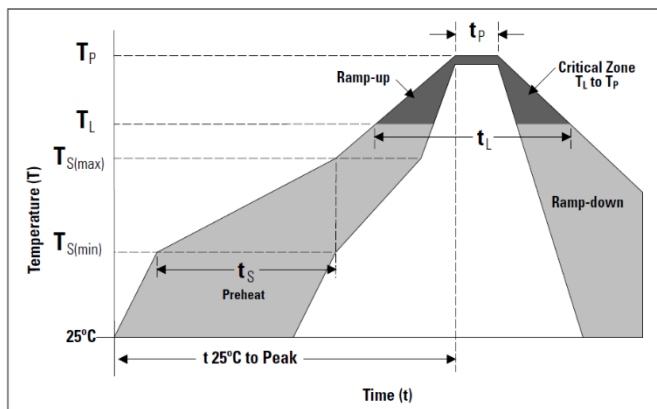
8. 焊盘尺寸及焊接条件 / SOLDER PAD SIZE AND WELDING CONDITIONS

8-1 焊盘尺寸建议 / Recommended Size of the Pad.



8-2 焊接参数/Soldering Parameters

Reflow Condition		Pb – free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (Min to Max) (t_s)	60 – 180 seconds
Average Ramp-up Rate (Liquidus Temp (T_L) to peak)		3°C/second max.
$T_{s(max)}$ to T_L - Ramp-up Rate		5°C/second max.
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		10 – 30 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C
Wave Soldering		260°C, 10 seconds max.



9. 包装规格/PN编码规则/PACKINGSPECIFICATION/PN ENCODING RULES

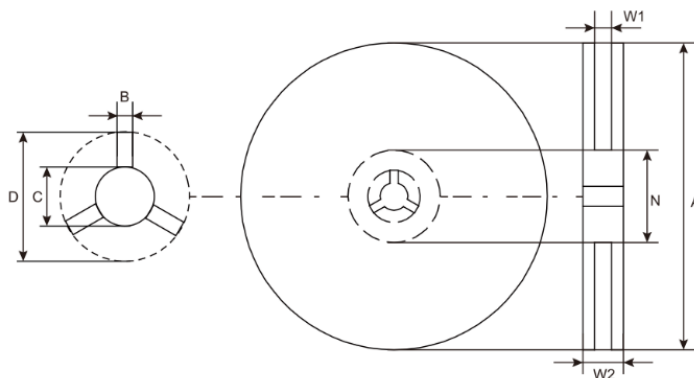
9-1 包装数量、重量 / QUANTITY & WEIGHT

系列 Series	数量Quantity	重量Weight
1206FF	3000pcs/Reel	98±20 (g)

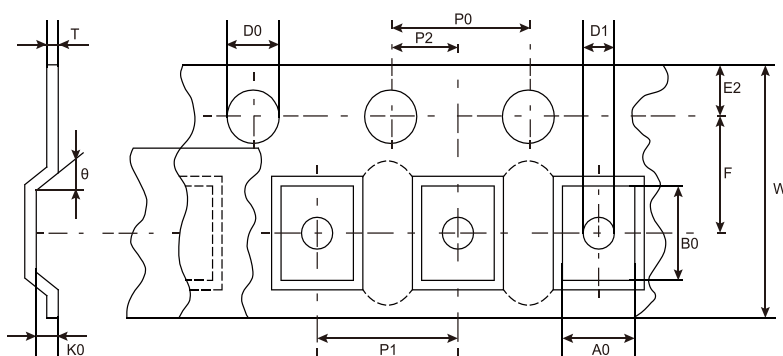
9-2 PN编码规则/PNENCODINGRULES

1 Part Numbering System (编码结构)						
2 FULL DESCRIPTION FORMAT (详细内容描述格式)						
	制造商Manufacturer	Series系列	Rated current额定电流	Rated voltage额定电压	Packaging包装	- 补充码
	xx	xxxxx	xxxx	x	xx	XX
	LB	0603FF	0100=100mA	E=24V	00=Tape & Reel 编带+卷盘	01=XX容制化要求
		0603TD	1100=1A	F=32V		02=低阻产品
		1206FF	2100=10A	G=36V		
		1206TD		H=48V		
				I=63V		
				J=72V		
				B=125V		
3	Example例如:		P/N	LB1206TD1100B00		
	规格描述		LB品牌 1206TD 1A125V 编带包装			

9-2 卷轮规格 / Reel & Tape specifications



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.



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	

10. 其他 / OTHERS

10-1 如果在使用中有超出本规格书的要求，必须经由双方协商确认。

In the event that an impropriety is found beyond this specification, it shall be fixed by mutual agreement between the parties.

10-2 如果本规格书有不适当的情况，必须通过双方协商并由本公司修改。

In the event that an impropriety is found in this specification, LANBAO ELECTRICAL shall amend it by mutual agreement between the parties.

Attachment: UL Certification

2023/6/5 09:48

UL Certification: E213695 - Fuses



UL **iQ** for Fuses



Fuses

E213695

Guide Information

ZHONG SHAN LANBAO ELECTRICAL APPLIANCES CO LTD

West Xing Pu Rd, Huang Pu, Zhongshan Guangdong 528429 CN

1206FF, 1206HI, 1206HV or 1206TD

Supplemental micro fuses: surface mount

<u>Size</u> <u>mm(in)</u>	<u>Amps</u> <u>(A)</u>	<u>Volts</u> <u>(V)</u>	<u>Interrupting</u> <u>Rating (A)</u>
3.2 x 1.6 x 0.5 (0.13 x 0.06 x 0.02)	0.25 - 10	125Vac	50
	0.25 - 10	63Vdc	50
	0.25 - 10	72Vdc	50
	0.25 - 10	125Vdc	50
	0.25 - 30	48Vdc	200
	0.25 - 50	24Vdc	200
	0.25 - 50	32Vdc	200
	0.25 - 50	36Vdc	200

Report Date: 2022-01-07

Last Revised: 2022-01-07

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