

文件名 Document Name: 规格书 Specification	产品型号 Model: L-KLS5-1056 SERIES
文件编号 Document No. LG/C-08.2-5.48 版本 Version: II/1	页码 Page: 1 of 9

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NINGBO KLS ELECTRONIC CO., LTD.

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1. 适用范围/SCOPE

This specification defines the technical requirements of miniature fuse type L-KLS5-1056 (fast acting) series.

产品部件号为: 型号 额定电流

Construction of part no.: type rated current

例如/ Example: L-KLS5-1056 13000

产品部件号/PART NUMBER



产品部件号 PART NUMBER	额定电流 RATED CURRENT	额定电压 RATED VOLTAGE	产品部件号 PART NUMBER	额定电流 RATED CURRENT	额定电压 RATED VOLTAGE
0100	100mA	125V/250V	2500	2.5A	125V/250V
0125	125mA		3000	3A	
0160	160mA		3150	3.15A	
0200	200mA		3500	3.5A	
0250	250mA		4000	4A	
0315	315mA		5000	5A	
0400	400mA		6300	6.3A	
0500	500mA		7000	7A	
0630	630mA		8000	8A	
0800	800mA		10000	10A	
1000	1A		13000	13A	
1250	1.25A		15000	15A	
1500	1.5A		20000	20A	
1600	1.6A		30000	30A	
2000	2A				

2. 相关标准/APPLICABLE STANDARDS

2.1 产品适用的相关标准是UL248-1、UL248-14。

Applicable standards for UL248-1, UL248-14.

2.2 认证情况/APPROVED DETAILS

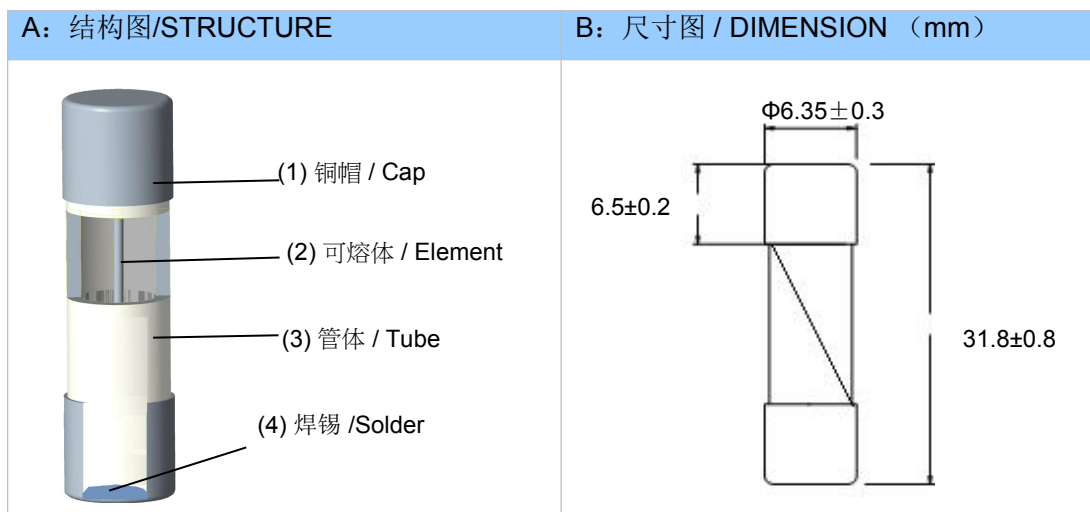
认证	证书编号	认证范围	额定电压
	E324232	100mA-10A	125V/250V
		12A—30A	

3. 公司地址/ADDRESS

NO. 8-1, RONGXIA RD. XIAPU SHANQIAN INDUSTRIAL ZONE BEILUN NINGBO ZHEJIANG CHINA

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4.结构尺寸/ STRUCTURE AND DIMENSION



编号 No.	品名 PART	材料 MATERIAL
1	铜帽 / Cap	黄铜镀镍 / Nickel Plated Brass
2	可熔体 / Element	金属丝 / Metal Wire
3	管体 / Tube	陶瓷管 / Ceramic Tube
4	焊锡 Solder	高铅/90%Pb&10%Sn

4.1陶瓷管/CERAMIC TUBE

陶瓷管无破裂、缺损或污染等现象。

The tube shall have no defects such as crack, injury and contamination.

4.2铜帽/CAP

铜帽应焊接牢固，以保证在未损坏熔断体时，铜帽不能被卸脱。样品在15℃-35℃水中浸24小时取出后，在每个端帽上，均匀地施加拉力至10N，保持1分钟，铜帽不应脱落。

Cap should be firmly attached so that it is not possible to remove them without damaging the fuse itself. The samples are immersed in 3 for 24 hours at a temperature between 15℃ and 35℃. After remove from the water, an axial pull steadily increasing to 5N is applied to each cap for 1 minute.

4.3焊点/SOLDERING JOINT

焊接铜帽端时，铜帽外表面不能有残留的助焊剂、焊锡、可熔体等异物。

Soldering joint in end cap shall not be melted during normal operation and shall not have solder chips on tube, element in view and outer surface of caps.

5. 机械特性/MECHANICAL PERFORMANCES

保险丝应能承受下列三项试验。

Fuse shall withstand following three testing.

5.1扭力试验/Rotational Strength

固定保险丝的一端铜帽，然后在另一端铜帽上顺时针和逆时针方向上顺序施加10N·mm力矩，两端铜帽不应松动，管体也不应破碎。

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When one end cap of the specimen is fixed and then the torque 10N·mm is applied to the other end cap clockwise and counterclockwise, no looseness of end caps at both ends or damage of fuse-tube shall occur.

5.2 拉力试验/Tensile Strength

固定保险丝的一端铜帽，然后在另一端铜帽上，沿水平轴方向施加10N的拉力，两端铜帽不应松动且管体不应破碎。

When one end cap of the specimen is fixed and then the tensile force 5N is applied to the other end cap in a direction to separate the end caps, no looseness of end caps or damage of fuse-tube shall occur.

5.3 管体强度试验/Strength of Fuse-tube

两端铜帽固定好后，在陶瓷管的中心位置施加15N的压力，管体不应破碎。

When middle parts of end caps at both ends of the specimen are supported and then the force 15N is applied to the middle part of the fuse-tube, no damage of the fuse-tube shall occur.

6. 电气特性/ELECTRICAL PERFORMANCES

6.1 测试条件/TEST CONDITION

全部测试条件都应在环境温度24℃±3℃条件下进行，在此期间温度变化不允许达到+5℃和到极限范围。

All electrical tests are conducted at an ambient temperature of 24±3℃. The ambient temperature is not allowed to vary more than 5℃ during the test, and must be within these limits.

6.2 负载能力测试/CURRENT-CARRYING CAPACITY TEST

当保险丝通以100%倍额定电流的条件下进行测试时，在4小时内电路不应断开，保险丝不被电流熔化，管体不破裂。

When a fuse is carrying 100% of rated current for continuing 4 hours and more, no open circuit, melt fusible element, or ruptured tube shall occur in any manner during this test.

6.3 温度上升试验/TEMPERATURE RISE TEST

当保险丝通以100%倍额定电流的条件下进行测试时，在达到热量平衡后，测量保险丝表面的温度，保险丝表面的温度上升必须等于或低于75℃。注：温度上升=保险丝表面的温度-环境温度。

Measure the temperature of the surface of the fuse under the 100% rated current, when the thermal equilibrium reaches. The temperature rise on the surface of each fuse shall be 75℃ or less. Note: Temp. Rise = fuse temp. - room temp..

6.4 分断能力/INTERRUPTING CAPACITY

安规认证 /Safety Certification	分断能力/Breaking capacity
UL	(100mA—10A) 10000 amperes at 125V AC.
	(100mA—1A) 35 amperes at 250V AC.
	(1.25A—3.5A) 100 amperes at 250V AC.
	(4A—10A) 200 amperes at 250V AC.
cURus	(12A—30A) 200 amperes at 125V AC.
	(12A—30A) 200 amperes at 250V AC.

6.5 预飞弧时间-电流特性/PRE-ARCING TIME-CURRENT CHARACTERISTICS

当保险丝通以下表规定的电流时，其熔断时间必须符合下表的要求，且铜帽不能飞脱、管体不应破裂、损坏。

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When the current in the following table is passing the fuse, its opening time must be in accordance with the requirements in the following table, that is, the pre-arcing time. Moreover, neither damage of the fuse-tube nor shattering of the cap shall occur.

熔断电流/ % of Rated Current	熔断时间/ Open Time
100%	4hours 温升不超过75度
135%	1Hour Max.
200%	5 Sec. Max.

6.6 熔化热能值/ NOMINAL MELTING

额定电流 Rated current(A)	额定电压 Rated Voltage(V)	I ² T参考值±20% Reference (A ² Sec) ±20%
100mA	125V/250V	0.002
125mA		0.003
160mA		0.005
200mA		0.008
250mA		0.013
315mA		0.017
400mA		0.034
500mA		0.071
630mA		0.121
800mA		0.292
1A		0.630
1.25A		0.725
1.5A		1.690
1.6A		1.720
2A		5.913
2.5A		9.747
3A		10.22
3.15A		20.56
3.5A		21.23
4A		31.31
5A		52.49
6.3A		117.1
7A		125.5
8A		132.3
10A	253.4	
12A	460.0	
13A	589.3	
15A	802.0	
20A	1825	

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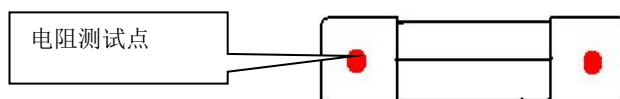
25A	2586
30A	3002

Note: I²T values stated for 8ms--10ms or 10In opening time.

6.7电阻测试/COLD RESISTANCE TEST

环境温度为: 25±2℃, 测试电流不大于保险丝额定电流的10%。

Input 10% of fuse rated current to fuse for cold resistance test at surrounding temperature of 25±2℃.

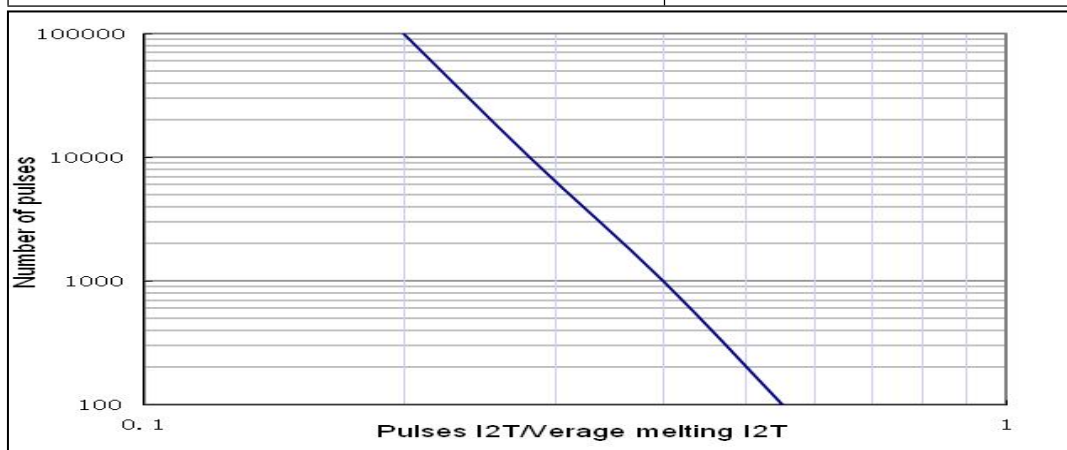


6.8脉冲/PULSE

脉冲产生热循环, 从而产生机械疲劳影响保险丝管寿命。设计时应使脉冲I²T远远小于保险丝管标称熔化热能I²T。保险丝管寿命(可承受的脉冲循环次数)与U(U=脉冲I²T值与保险丝管I²T值之比率)的关系参照下表。

Pulse can produce thermal cycling and mechanic fatigue which could affect the life of fuse. In design the selected fuse should have a I²T value much greater than the I²T value of pulse. Refer to follow table showing the relationship between the life of fuse (the endurable times of pulse shock) and U (ratio between pulse I²T value and fuse I²T value).

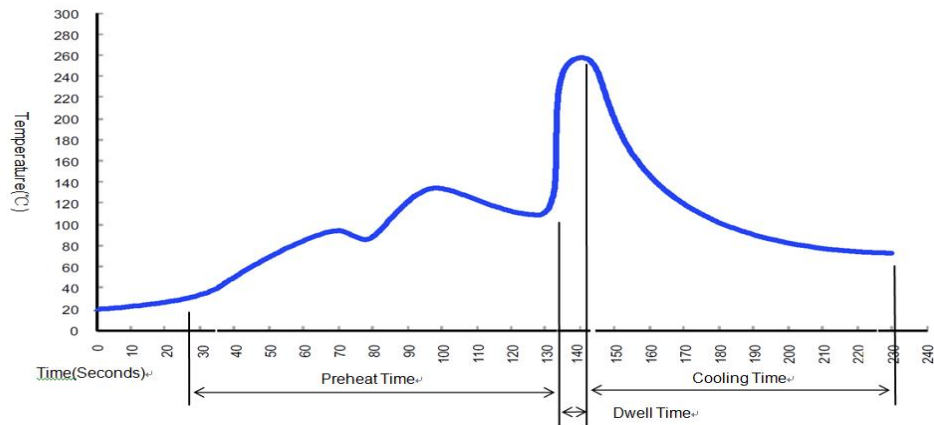
可承受脉冲次数/Endurable times of pulse shock	U (比率) /U(ratio)
100, 000次/100,000times	22%
10, 000次/10,000times	29%
1, 000次/1,000times	38%
100次/100times	48%



6.9焊接参数/ SOLDERING PARAMETERS

- 1) 波峰焊接/ Wave soldering: 260℃, 10sec. Max.
- 2) 手工焊接/ Manual soldering: 300℃, 3sec. Max.

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7. 产品标志/MARKING

7.1 保险丝上的标志应易于看清。

The relevant markings shall be marked on the caps of the fuse and shall be easily visible

8. 包装要求/ PACKING DETAILS

8.1 包装方式/ PACKING MODE A

8.1.1 长引线/ Long lead(24-50mm)

8.1.1.1 内盒参考尺寸Inner Box Size:长×宽×高length × width × height= 150×130×80mm.

8.1.1.2 外箱参考尺寸External Carton Size: 长×宽×高length × width × height=472×278×178mm.

8.1.1.3 包装要求Packing Details: 50个/袋; 5袋/盒; 10盒/箱。

50EA/ Bag; 5 Bags / Box; 10 Boxes / Exported Carton.

8.1.2 短引线/ Short Lead(3.0—5.0mm)

8.1.2.1内盒参考尺寸Inner Box Size: 长×宽×高length × width × height= 150×130×80mm.

8.1.2.2 外箱参考尺寸External Carton Size: 长×宽×高length × width × height=440×283×175mm.

8.1.2.3 包装要求Packing Details: 100个/袋; 5袋/盒; 10 盒/箱。

100EA/ Bag; 5Bags / Box; 10 Boxes / Exported Carton.

8.1.3套管产品短引线/casing Short Lead(3.0—5.0mm)

8.1.3.1内盒参考尺寸Inner Box Size: 长×宽×高length × width × height= 150×130×80mm.

8.1.3.2 外箱参考尺寸External Carton Size: 长×宽×高length × width × height=440×283×175mm.

8.1.3.3 包装要求Packing Details: 200个/袋; 3袋/盒; 10 盒/箱。

200EA/ Bag; 3 Bags / Box; 10 Boxes / Exported Carton.

8.2 所有产品的包装应能达到防潮、抗振的作用，以防在运输或贮存过程中产品受潮或损坏

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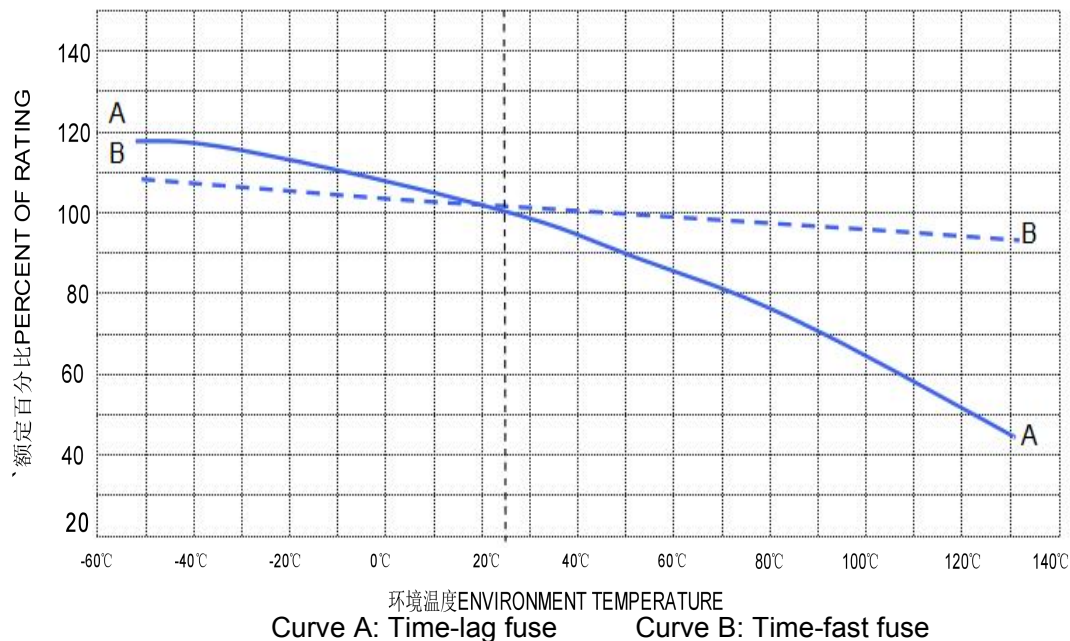
Packing should meet the requirements of anti-moisture and anti-shaking so that the products will not absorb moisture or be damaged during transportation or storage.

9. 环境参数/ENVIRONMENTAL PARAMETERS

9.1 工作温度/Operating Temperature: -55℃~125℃.

保险丝管的电流承载能力测试是在环境温度25℃条件下进行的，而保险丝管的电流承载能力是受环境温度影响的。环境温度越高，保险丝管的寿命越短，承载能力就越低，所以选用保险丝管时应考虑保险丝管周边的环境温度，环境温度对各类保险丝管承载能力的影响如下图所示：

The current carrying capacity tests of a fuse are performed at 25℃ and will be effected by changes with the ambient temperature. The higher the ambient temperature, the shorter fuse life will be, and the lower the current carrying capacity will be. So the ambient temperature shall be considered for proper fuse selection. Refer to the following chart showing the effect on the current carrying capacity of all kinds of fuse..



9.2在温度+10~60℃、相对湿度≤75%的密闭条件下可存放3年。

Under airtight in temperature +10~60℃ `relative humidity ≤75% can store 3 years.

在温度+10~60℃、相对湿度为95%的非露天下最多可存放30天。

Without dew in temperature +10~60℃ `relative humidity be 95% maximum value for 30days.

10. 规格书有效性The specification for validity

10.1 修订协议 Agreement of revision

规格书因需要修订时，须由两公司协议后执行。

Specifications for need revision, must be performed after both companies agreement.

10.2 有效性 Validity

本承认书提出后，于贵司承认期间，可暂时使用，若经过1个月无异议或无签回，则视同有效文件。

The specifications can be used temporarily during the period of approval .If you have no any objection or not return one hard copy to us within one month.this specification will be operated as a valid document .

