



Microfuse RoHS & Pb-free
好利® 保险丝管



产 品 规 格 书

PRODUCT SPECIFICATION

慢断型保险丝

TIME-LAG FUSE

61T RoHS SERIES

编码: A04 HLD-PSI-8077 2022/08/03

制定:

李湖明
2022.08.03

PREPARED BY

审核:

胡兴华
2022.08.03

CHECKED BY

批准:

苏毅镇
2022.08.03

APPROVED BY



好利来(厦门)电路保护科技有限公司
Hollyland (Xiamen) Technology Corporation Limited
福建厦门市翔安区舩山东二路829号361101
T +86 592 577 2288
M sdxm@hollyfuse.com
Wwww.hollyfuse.com



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1 适用范围/ SCOPE

本规格书适用于公司生产并获得 CQC 安全标准认证的 61T RoHS 系列 HOLLY® 商标的小型保险丝管。

This specification defines the technical requirements of miniature fuse type 61T RoHS series with HOLLY® brand, which are approved by CQC.

产品部件号为: 型号

Construction of part no.: type

例如/ Example: 61T

额定电流

rated current

080

额定电压

rated voltage

H

产品部件号/ PART NUMBER

产品部件号 PART NUMBER	型号规格 MODEL DETAIL	产品部件号 PART NUMBER	型号规格 MODEL DETAIL
61T-0100H	61T T100mAL 250V	61T-025H	61T T2.5AL 250V
61T-0125H	61T T125mAL 250V	61T-032H	61T T3.15AL 250V
61T-0160H	61T T160mAL 250V	61T-040H	61T T4AL 250V
61T-0200H	61T T200mAL 250V	61T-050H	61T T5AL 250V
61T-0250H	61T T250mAL 250V	61T-063H	61T T6.3AL 250V
61T-0315H	61T T315mAL 250V	61T-080H	61T 8A 250V
61T-0400H	61T T400mAL 250V	61T-100H	61T 10A 250V
61T-0500H	61T T500mAL 250V	61T-125H	61T 12.5A 250V
61T-0630H	61T T630mAL 250V	61T-130H	61T T13AL 250V
61T-0800H	61T T800mAL 250V	61T-150H	61T T15AL 250V
61T-010H	61T T1AL 250V	61T-160H	61T 16A 250V
61T-013H	61T T1.25AL 250V	61T-200H	61T T20AL 250V
61T-016H	61T T1.6AL 250V	61T-250H	61T T25AL 250V
61T-020H	61T T2AL 250V	61T-300H	61T T30AL 250V

型号规格: 型号

MODEL DETAIL: Type

例如/ Example: 61T

特性符号

Characteristic Symbol

T

额定电流

Rated Current

2A

分断能力符号

Breaking Capacity Symbol

L

额定电压

Rated Voltage

250V

*特性符号/ Characteristic Symbol: T – 慢断型/ Time-Lag

分断能力符号/ Breaking Capacity Symbol: L – 低分断能力/ Low Breaking Capacity.

(8A, 10A, 12.5A, 16A 不必标注 “T” “L” 8A, 10A, 12.5A, 16A don't note “T” “L”)

2 相关标准/ APPLICABLE STANDARDS

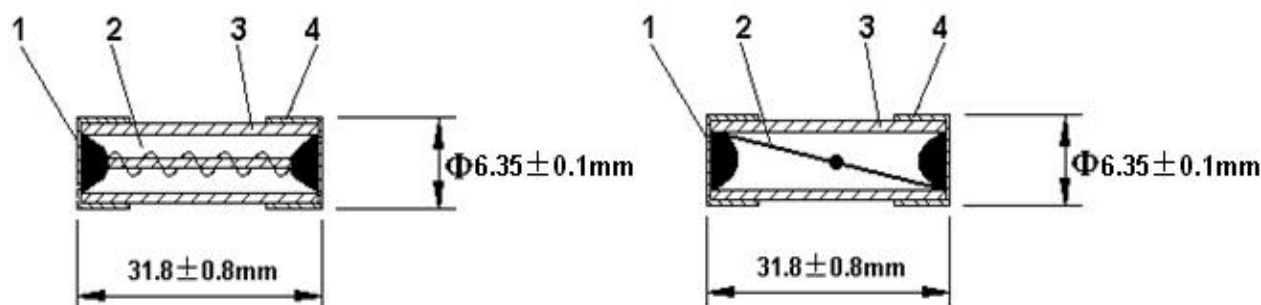
2.1 61T RoHS 系列产品适用的相关标准是 GB 9364 和 IEC 60127。

Applicable standards for 61T RoHS series are GB 9364 and IEC 60127.

2.2 认证情况/ APPROVED DETAILS

额定电压 RATED VOLTAGE	CQC	
	认证范围 APPROVED RANGE	认证号码 CERT. NO.
250V	8A, 10A, 12.5A, 16A	CQC05012014671

3 构造图/ CONSTRUCTION FIG. & DIMENSION



编号 No.	品名 PART	材料名 MATERIAL	备注 NOTE
1	焊锡 Solder	无铅焊锡/ Pb Free	额定电流 $I_n \leq 12A$
		含铅高温焊锡/ Pb Contained High Temperature Solder	额定电流 $I_n > 12A$
2	可熔体 Element	玻璃纤维 + 金属丝/ Glass Fiber + Metal Wire	额定电流 $I_n \leq 500mA$
		一个锡球 + 金属丝/ One Solder Blob + Metal Wire	$15A > \text{额定电流 } I_n > 500mA$
		金属片/ Metal Strip	$20A \geq \text{额定电流 } I_n \geq 15A$
		金属丝/ Metal Wire	额定电流 $I_n > 20A$
3	管体 Tube	玻璃管/ Glass Tube	额定电流 $I_n \leq 20A$
		陶瓷管/ Ceramic Tube	额定电流 $I_n > 20A$
4	铜帽/ Cap	黄铜/ Brass	镀镍/ Nickel Plated

3.1 玻璃管、陶瓷管/ GLASS TUBE & CERAMIC TUBE

玻璃管和陶瓷管无破裂、缺损或污染等现象，且玻璃管须透明易辨其内部的可熔体。

The glass tube shall be transparent as to be easily distinguished fusing element with naked eyes. The glass and ceramic tube have no defects such as crack, injury and contamination.

3.2 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°C - 35°C 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 water for 24 hours at a temperature between 15°C and 35°C . After remove from the water, an axial pull steadily increasing to 10N is applied to each cap for 1 minute.

3.3 焊点/ SOLDERING JOINT

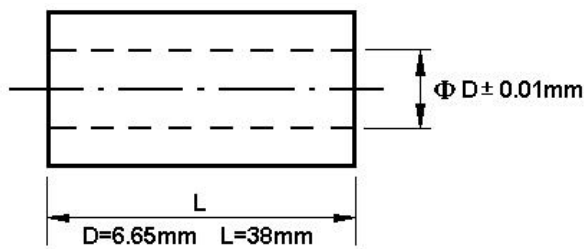
焊接铜帽端时，铜帽外表面不能有残留的助焊剂、焊锡、可熔体等异物。

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.

3.4 准直度/ ALIGNMENT

保险丝应能依自身重量能通过准直度卡规,准直度卡规的图形如下。

The entire length of the fuse shall pass through the gauge by the fuses own weight. The construction of gauge is as follows.



4 机械特性/ MECHANICAL PERFORMANCES

保险丝应能承受下列二项试验。/ Fuse shall be withstood following two testing.

4.1 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 10N 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.

4.2 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 30N 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 30N is applied to the middle part of the fuse-tube, no damage of the fuse-tube shall occur.

5 电气特性/ ELECTRICAL PERFORMANCES

5.1 测试条件/ TEST CONDITION

全部测试条件都应在环境温度 $24^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 条件下进行,在此期间温度变化不允许达到 $+5^{\circ}\text{C}$ 和到极限范围

All electrical tests are conducted at an ambient temperature of $24 \pm 3^{\circ}\text{C}$. The ambient temperature is not allowed to vary more than 5°C during the test, and must be within these limits.

5.2 技术参数/ Technical Parameters

熔断体在额定电流条件下,其两端的电压降不应超过下表规定的最大值。

The voltage drop across the fuse-link at their rated current shall not exceed the maximum values is in follows.

额定电流 Rated Current (A)	冷电阻 Nominal Cold Resistance (Ohms)	平均 I^2T 值/ Average I^2T Value ($\text{A}^2 \cdot \text{sec.}$)	额定电压 Rated Voltage (V)	最大电压降 Maximum Voltage Drop (mV)	最大维持功耗 Maximum Sustained Power Dissipation (W)
500mA	0.5560	2.913	250	1,000	1.6(1.5I _n)
630mA	0.3640	1.931		800	1.6(1.5I _n)
800mA	0.2430	3.499		600	1.6(1.5I _n)
1A	0.1650	5.780		500	1.6(1.5I _n)
1.6A	0.0471	8.953		350	1.6(1.5I _n)
2A	0.0350	16.20		300	1.6(1.5I _n)
2.5A	0.0263	27.06		250	1.6(1.5I _n)
3.15A	0.0200	45.29		220	1.6(1.5I _n)

4A	0.0148	80.17		200	1.6(1.5I _n)
5A	0.0115	138.0		200	1.6(1.5I _n)
6.3A	0.0087	247.7		200	1.6(1.5I _n)
8A	0.0067	570.4		100	4(1.5I _n)
10A	0.0052	874.6		100	6(1.5I _n)
12.5A	0.0038	1428		80	6(1.5I _n)
15A	0.0039	2205		80	6(1.5I _n)
16A	0.0031	2830		80	6(1.5I _n)
20A	0.0022	4168		200	6(1.5I _n)
25A	0.0023	2645		200	8(1.2I _n)
30A	0.0017	4285		200	10(1.2I _n)

5.3 预飞弧时间电流-特性/ PRE-ARCING TIME-CURRENT CHARACTERISTICS

额定电流 Rated Current	2.1I _n	2.75I _n		4I _n		10I _n	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.
≤10A	2min.	600ms	10sec.	150ms	3sec	20ms	300ms
>10A~16A	5min	600ms	15sec	150ms	5sec	20ms	400ms
>16A	30min	600ms	30sec	150ms	5sec	20ms	400ms

5.4 分断能力/ BREAKING CAPACITY

额定分断能力为 35A 或 10I_n(A.C.), 取其中较大者(额定电流 I_n≤16A); 100A(A.C.) (额定电流 I_n>16A)。
Rated breaking capacities are 35A or 10I_n whichever is greater(I_n≤16A) and 100A(I_n>16A), tested with A.C..

5.5 耐久性试验/ ENDURANCE TEST

耐久性试验过程下。/ The process of endurance test is as follows.

A 对熔断体通过 1.2 倍的额定电流 1 小时(I_n≤16A)或 0.8 倍的额定电流 1 小时(I_n>16A), 然后切断电流 15 分钟, 重复此循环 100 次。/ A current 1.2I_n is passed through the fuse-link for a period of 1hour. The current is then switched off for a period of 15 minutes. The cycle is repeated 100 times.

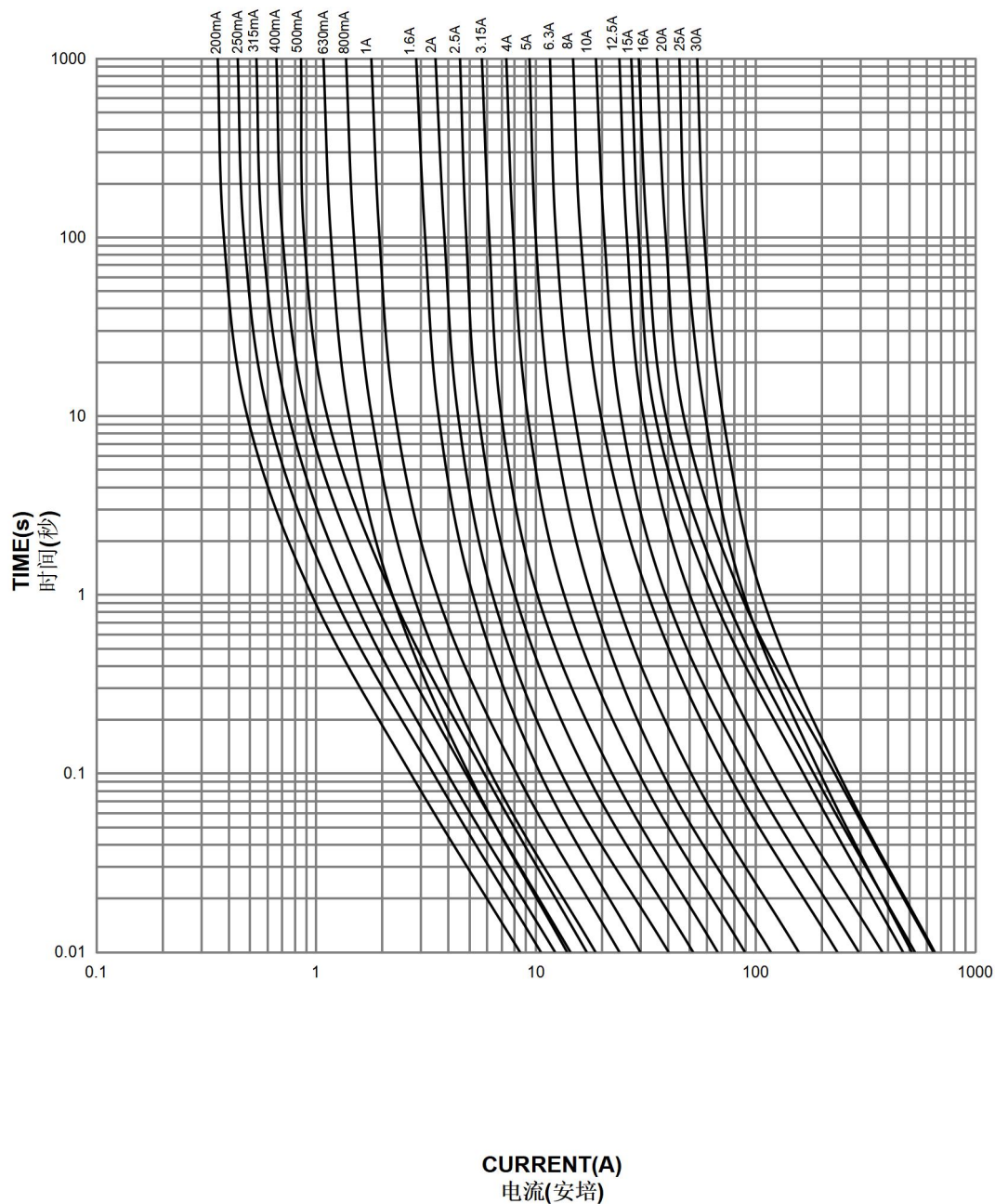
B 然后对熔断体通以 1.5 倍额定电流 1 小时(I_n≤6.3A)、0.5 小时 (16A≥I_n>6.3A)或 1.25 倍额定电流 1 小时 (I_n>16A)。/ A current 1.5I_n is then passed through the fuse-link for 1hour(I_n≤6.3A), 0.5hour(16A≥I_n>6.3A) or a current 1.25I_n is then passed through the fuse-link for 1hour (I_n>16A).

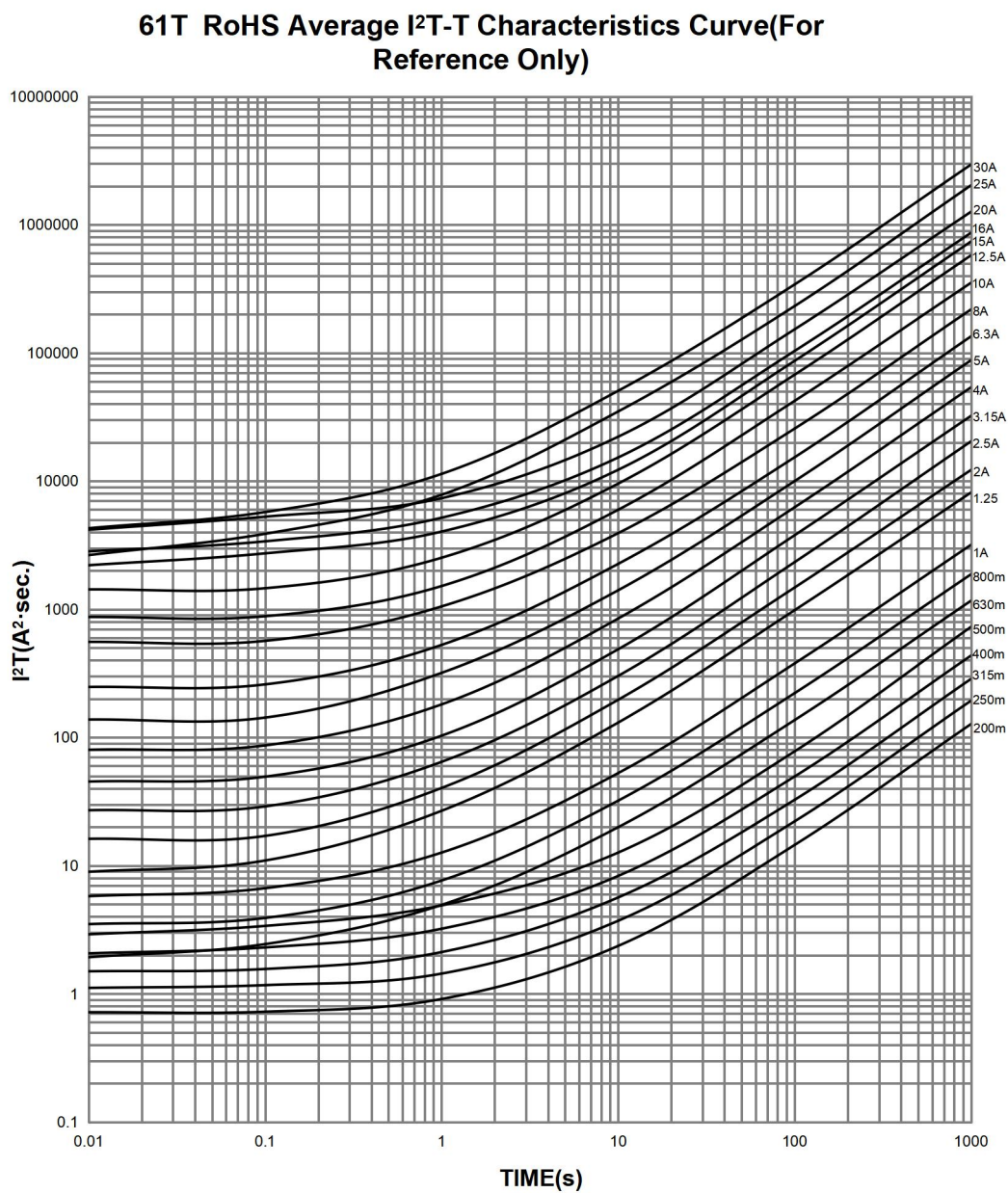
C 测量熔断体两端的电压降。试验后, 熔断体两端的电压降的增大量不大于试验前测得值的 10%。/ Finally, the voltage drop across the fuse-link is measured. The voltage drop across the fuse-link after the test shall not have increased by more than 10% of the Value measured before the test.

D 试验后, 标记仍应清晰可辨, 而且诸如端帽上的焊点不应出现任何明显的劣变。/ After the test, the marking shall still be legible and soldered joints on end caps, for example, shall not show and appreciable deterioration.

5.6 平均 I-T 特性曲线图(供参考)/ THE AVERAGE I-T CHARACTERISTICS CURVE(FOR REFERENCE ONLY)

61T RoHS Average I-T Characteristics Curve(For Reference Only)
61T RoHS 平均I-T曲线图(供参考)



5.7 平均 I^2T -T 特性曲线图(供参考)/ THE AVERAGE I^2T -T CHARACTERISTICS CURVE(FOR REFERENCE ONLY)

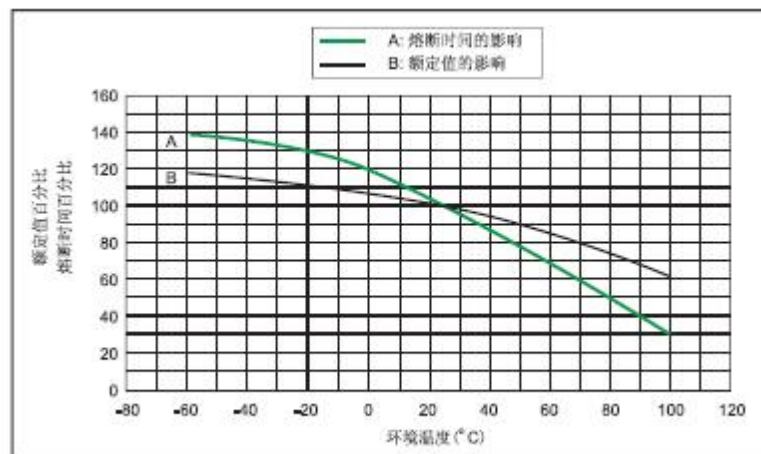
5.8 焊接参数/ SOLDERING PARAMETERS

- 1) 波峰焊---260℃，最大 10 秒。 / Wave soldering---260℃, 10 seconds Maximum.
- 2) 手工焊接/ Manual soldering: 350℃, 3sec. Max..
- 3) 耐热焊接/ Resistance to soldering heat: 260℃, 10sec. Max..

5.9 环境温度/Ambient Temperature

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 is, 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 charts showing its effect on the current carrying capacity of all kinds of fuse.



5.9 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 产品标志/ MARKING

6.1 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.

6.2 每个保险丝应标有下列标记。

The markings for every fuse shall be prescribed as below according to the types.

- 1) 安全认证标志/ Safety approval logo: (CCC)
- 2) 型号名称/ Type: 61T
- 3) 商标/ Trademark: (H)
- 4) 额定电压、电流// Rated Voltage & Current
- 5) 特性标志/ Characteristic Symbol: T(8A, 10A, 12.5A, 16A 除外 Except for 8A, 10A, 12.5A, 16A)
- 6) 分断能力符号/ Breaking Capacity Symbol: L(8A, 10A, 12.5A, 16A 除外 Except for 8A, 10A, 12.5A, 16A)

注：1)、2) 和 3) 应标注在保险丝管一端铜帽的侧面。

Note: 1), 2) and 3) should be marked on the one side cap of the fuse.

4)、5) 和 6) 应标注在保险丝管另一端铜帽的侧面。

4), 5) and 6) should be marked on the other side cap of the fuse.

7 包装要求/ PACKING DETAILS

7.1 外箱包装方式/ EXPORTED CARTON PACKING

7.1.1 包装方式 A/ PACKING MODE A

7.1.1.1 参考尺寸：长×宽×高=320×240×165mm。

Reference Dimension: length×width×height=320×240×165mm.

7.1.1.2 包装细节：100 个/小塑料袋；25 小塑料袋/大塑料袋；2 大塑料袋/每箱。

Packaging Details: 100EA/ little plastic-bag; 25 little plastic-bags/ big plastic-bag; 2 big plastic-bags/ Exported Carton.

7.1.2 包装方式 B/ PACKING MODE B

7.1.2.1 参考尺寸：长×宽×高=355×295×260mm。

Reference Dimension: length×width×height=355×295×260mm.

7.1.2.2 包装细节：100 个/小塑料袋；4 小塑料袋/盒；20 盒/每箱。

Packaging Details: 100EA/ little plastic-bag; 4 little plastic-bags/ box; 20 boxes/ Exported Carton.

7.1.3 包装方式 C / PACKING MODE C

7.1.3.1 参考尺寸：长×宽×高=375×245×165mm。

Reference Dimension: length×width×height=375×245×165mm.

7.1.3.3 包装细节：100 个/小塑料袋；4 小塑料袋/盒；10 盒/每箱。

Packaging Details: 100EA/ little plastic-bag; 4 little plastic-bags/ box; 10 boxes/ Exported Carton.

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。

Packing shall be so carried out that the products will not absorb moisture or be damaged during transportation or storage.

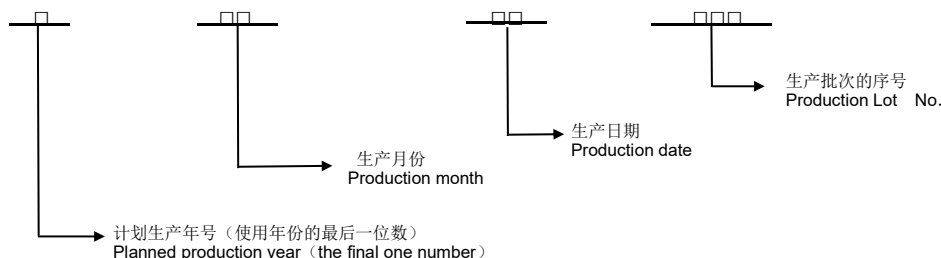
7.2 标签/ LABEL

标签应包括型号、额定电流、额定电压、额定分断电流、商标、安全标志、批量号码、公司名称、RoHS 标志、绿色“G”、绿色“e”（仅无铅产品）和“QA”标志。

The label in the smallest package in which the fuses are put shall contain the Type, Rated current, Rated voltage, Breaking current, Trademark, Safety approval logo, Lot. No., Company name, “RoHS” mark, green “G”, green “e” (only Pb free products) and “QA” mark.

例批量号：

Example Lot No.:



8 环境参数/ ENVIRONMENT PARAMETERS

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

8.2 储存温度/ Storage Temperature: -55℃~85℃.

9 信赖性试验/ RELIABILITY TEST

项目/ Item	试验要求/ Test Requirement	试验条件/ Test Condition
高温试验 High Temperature Test	试验后保险丝管的电阻符合范围；电气特性符合：210% ≤2 分钟($I_n \leq 10A$) 或 210% ≤5 分钟($10A < I_n \leq 16A$)或 210% ≤30 分钟($16A < I_n$)，150% ≥1 小时 ($I_n \leq 6.3A$) 或 150% ≥0.5 小时 ($I_n > 6.3A$)。 After high temperature test, the resistance value of the fuses shall be in range. Electrical Characteristics: 210% ≤2 minutes($I_n \leq 10A$) or 210% ≤5 minutes($10A < I_n \leq 16A$) or 210% ≤5 minutes ($16A < I_n$), 150% ≥1 hour ($I_n \leq 6.3A$) or 150% ≥0.5 hour ($I_n > 6.3A$)	测试温度: 105±2℃, 测试时间: 1000 小时。 Test Temperature: 105 ± 2℃, Test Time: 1000hours.

低温试验 Low Temperature Test	试验后保险丝管的电阻符合范围；电气特性符合：210% ≤ 2 分钟($I_n \leq 10A$) 或 210% ≤ 5 分钟($10A < I_n \leq 16A$)或 210% ≤ 30 分钟($16A < I_n$)，150% ≥ 1 小时 ($I_n \leq 6.3A$) 或 150% ≥ 0.5 小时 ($I_n > 6.3A$)。 After low temperature test, the resistance value of the fuses shall be in range. Electrical Characteristics: 210% ≤ 2 minutes($I_n \leq 10A$) or 210% ≤ 5 minutes($10A < I_n \leq 16A$) or 210% ≤ 5 minutes ($16A < I_n$), 150% ≥ 1 hour ($I_n \leq 6.3A$) or 150% ≥ 0.5 hour ($I_n > 6.3A$)	测试温度: -20 ± 2℃, 测试时间: 1000 小时。 Test Temperature: -20 ± 2℃, Test Time: 1000hours.
高湿试验 High Humidity Test	试验后保险丝管的电阻符合范围；电气特性符合：210% ≤ 2 分钟($I_n \leq 10A$) 或 210% ≤ 5 分钟($10A < I_n \leq 16A$)或 210% ≤ 30 分钟($16A < I_n$)，150% ≥ 1 小时 ($I_n \leq 6.3A$) 或 150% ≥ 0.5 小时 ($I_n > 6.3A$)。 After high humidity test, the resistance value of the fuses shall be in range. Electrical Characteristics: 210% ≤ 2 minutes($I_n \leq 10A$) or 210% ≤ 5 minutes($10A < I_n \leq 16A$) or 210% ≤ 5 minutes ($16A < I_n$), 150% ≥ 1 hour ($I_n \leq 6.3A$) or 150% ≥ 0.5 hour ($I_n > 6.3A$)	测试温度: 40 ± 2℃, 测试湿度: 90%~95%, 测试时间: 96 小时。 Test Temperature: 40 ± 2℃, Test Humidity: 90%~95%, Test Time: 96hours.
热冲击试验 Thermal Shock Test	试验后保险丝管的电阻符合范围；电气特性符合：210% ≤ 2 分钟($I_n \leq 10A$) 或 210% ≤ 5 分钟($10A < I_n \leq 16A$)或 210% ≤ 30 分钟($16A < I_n$)，150% ≥ 1 小时 ($I_n \leq 6.3A$) 或 150% ≥ 0.5 小时 ($I_n > 6.3A$)。 After thermal shock test, the resistance value of the fuses shall be in range. Electrical Characteristics: 210% ≤ 2 minutes($I_n \leq 10A$) or 210% ≤ 5 minutes($10A < I_n \leq 16A$) or 210% ≤ 5 minutes ($16A < I_n$), 150% ≥ 1 hour ($I_n \leq 6.3A$) or 150% ≥ 0.5 hour ($I_n > 6.3A$)	每个循环: -40℃放置 30 分钟后室温 25℃放置 5 分钟再 85℃放置 30 分钟最后室温 25℃放置 5 分钟, 测试 10 循环。 -40℃/ 30minutes → 25℃/ 5minutes → 85℃/ 30minutes → 25℃/ 5minutes, 10 cycles.
落下、冲击试验 Falling Shock Test	铜帽应固定牢固,以保证在未损坏熔断体时,铜帽不能被卸下。铜帽表面镀层应牢固不易脱落, 每个端帽应能经受专用的设备外加的轴向拉力 10N, 保持 1 分钟。玻璃管或陶瓷管必须无缺陷破裂和缺损。试验后保险丝管的电阻符合范围；电气特性符合：210% ≤ 2 分钟($I_n \leq 10A$) 或 210% ≤ 5 分钟($10A < I_n \leq 16A$)或 210% ≤ 30 分钟($16A < I_n$)，150% ≥ 1 小时 ($I_n \leq 6.3A$) 或 150% ≥ 0.5 小时 ($I_n > 6.3A$)。 Cap should be firmly attached so that it is not possible to remove them without damaging the fuse itself. The means of attachment shall be sufficient to withstand an axial pull of 10N applied to each cap for 1 minute. The cap shall be nickel plated firmly. The glass or ceramic tube shall have no defects such as crack and injury. After falling shock test, the resistance value of the fuses shall be in range. Electrical Characteristics: 210% ≤ 2 minutes($I_n \leq 10A$) or 210% ≤ 5 minutes($10A < I_n \leq 16A$) or 210% ≤ 5 minutes ($16A < I_n$), 150% ≥ 1 hour ($I_n \leq 6.3A$) or 150% ≥ 0.5 hour ($I_n > 6.3A$)	一箱 5,000 个或 8,000 个保险丝管从一米高自由落下, 跌落 20 次。 5,000EA or 8,000EA fuses/ one external carton, Falling Height: 1 meter, Falling Times: 20.