 Hollyland (China) Electronics Technology Corporation Ltd. Hollyland (XiaMen) Technology Corporation Ltd.	<b>PRODUCT SPECIFICATION</b>	ISSUED DATE:	2018/01/30
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制定 PREPARED BY	研发部 2018-01-30 李湖明	审核 CHECKED BY	研发部 2018-01-30 陶家山	批准 APPROVED BY	副总经理 2018-01-30 赖文辉
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### 1 适用范围/ SCOPE

本规格书适用于公司参照 IEC 60127 标准生产的 5HT RoHS 系列 HOLLY® 商标的小型保险丝管。

This specification defines the technical requirements of miniature fuse type 5HT RoHS series with HOLLY® brand, which are referring to IEC 60127.

产品部件号为:                               型号     额定电流     额定电压  
 Construction of part no.:                   type     rated current     rated voltage  
 例如/ Example:                               5HT     020     H

\* 额定电压/ Rated Voltage: H - 500V

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
5HT-020H	5HT T2A 500V	5HT-080H	5HT T8A 500V
5HT-025H	5HT T2.5A 500V	5HT-100H	5HT T10A 500V
5HT-032H	5HT T3.15A 500V	5HT-120H	5HT T12A 500V
5HT-040H	5HT T4A 500V	5HT-125H	5HT T12.5A 500V
5HT-050H	5HT T5A 500V	5HT-150H	5HT T15A 500V
5HT-063H	5HT T6.3A 500V	5HT-160H	5HT T16A 500V

型号规格:                               型号     特性符号     额定电流     额定电压  
 MODEL DETAIL:            Type     Characteristic Symbol     Rated Current     Rated Voltage  
 例如/ Example:                               5HT     I     2A     500V

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

### 2 相关标准/ APPLICABLE STANDARDS

2.1 5HT RoHS 系列产品适用的相关标准是 IEC 60127-1 和 IEC 60127-7。

Applicable standards for 5HT RoHS series are IEC 60127-1 and IEC 60127-7.

2.2 认证情况/ APPROVED DETAILS

额定电压 RATED VOLTAGE	认证范围 APPROVED RANGE	认证号码 CERT. NO.	
		cURus	TUV
400Vdc	2A~16A	E156471	R 50292187
500Vac			
600Vac			

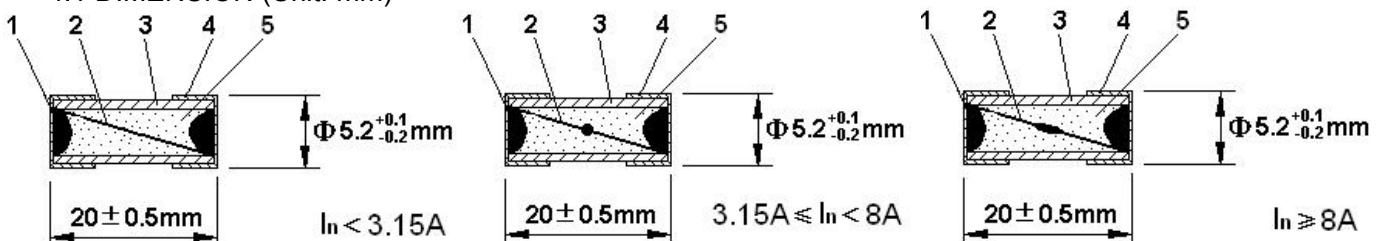
### 3 公司地址/ ADDRESS


中国福建省厦门市翔安区舩山东二路 829 号

829 Fangshan East 2nd Road, Xiang'an, Xiamen, China.

### 4 构造图/ CONSTRUCTION FIG. & DIMENSION

#### 4.1 DIMENSION (Unit: mm)



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编号 No.	品名 PART	材料名 MATERIAL MODEL	备注 NOTE
1	焊锡/ Solder	无铅焊锡/ Pb Free	/
2	可熔体/ Element	金属丝/ Metal Wire	额定电流 $I_n < 3.15A$
		一个锡球+金属丝/ One Solder Blob + Metal Wire	$3.15A \leq$ 额定电流 $I_n < 8A$
		金属片+锡/ Metal Strip + Solder	额定电流 $I_n \geq 8A$
3	管体/ Tube	陶瓷管/ Ceramic Tube	灌砂/ Filled Sand
4	铜帽/ Cap	黄铜/ Brass	镀镍/ Nickel Plated
5	填充物/ Filler	石英砂/ Quartz Sand	/

#### 4.2 陶瓷管/ CERAMIC TUBE

陶瓷管无破裂、缺损或污染等现象。

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

#### 4.3 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，在每个端帽上均匀施加拉力至 15N，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℃ and 35℃. After remove from the water, an axial pull steadily increasing to 15N is applied to each cap for 1 minute.

#### 4.4 焊点/ SOLDERING JOINT

焊接铜帽端时,管内和铜帽外表面不能有残留的助焊剂、焊锡等异物。

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

#### 5.1 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.

#### 5.2 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 30N·mm 力矩，两端铜帽不应松动，管体也不应破碎。


When one end cap of the specimen is fixed and then the torque 30N·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.

#### 5.3 管体强度试验/ Strength of Fuse-tube

两端铜帽固定好后，在玻璃管的中心位置施加 25N 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 25N 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

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

额定电流 Rated Current	2.1I <sub>n</sub>		2.75I <sub>n</sub>		4I <sub>n</sub>		10I <sub>n</sub>	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
2A-3.15A	30min.	750ms	80sec.	95ms	5sec.	10ms	150ms	
>3.15A-10A	30min.	750ms	80sec.	150ms	5sec.	10ms	150ms	
>10A	30min.	1sec.	80sec.	150ms	8sec.	10ms	150ms	

### 6.2 分断能力/ BREAKING CAPACITY

这些型号的保险丝的分断能力应能达到下表规定的相应的各种安全认证的分断能力要求。保险丝分断电路后，保险丝管不应破裂、铜帽飞脱、且铜帽两端的绝缘电阻不小于 0.1MΩ。

The breaking capacity should reach the breaking rated current given in the following table. And after this test, there should be no damage of the fuse-tube or shattering of the caps. After this test, the insulation resistance between the end caps shall be not less than 0.1MΩ.

额定电压 RATED VOLTAGE	分断电流 BREAKING CURRENT		
400Vdc	1500A(2A~3.15A) Time Constant≤1ms	500A(4A~10A) Time Constant≤1ms	400A(12A~16A) Time Constant≤1ms
500Vac	200A		
600Vac	100A		

### 6.3 耐久性试验/ ENDURANCE TEST

耐久性试验过程。/ 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，然后切断电流 15 分钟，重复此循环 100 次。/ A current 1.2I<sub>n</sub> 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<sub>n</sub>≤6.3A)或 0.5 小时(I<sub>n</sub>>6.3A)。/ A current 1.5I<sub>n</sub> is then passed through the fuse-link for 1hour(I<sub>n</sub>≤6.3A) or 0.5hour(I<sub>n</sub>>6.3A).

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.

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



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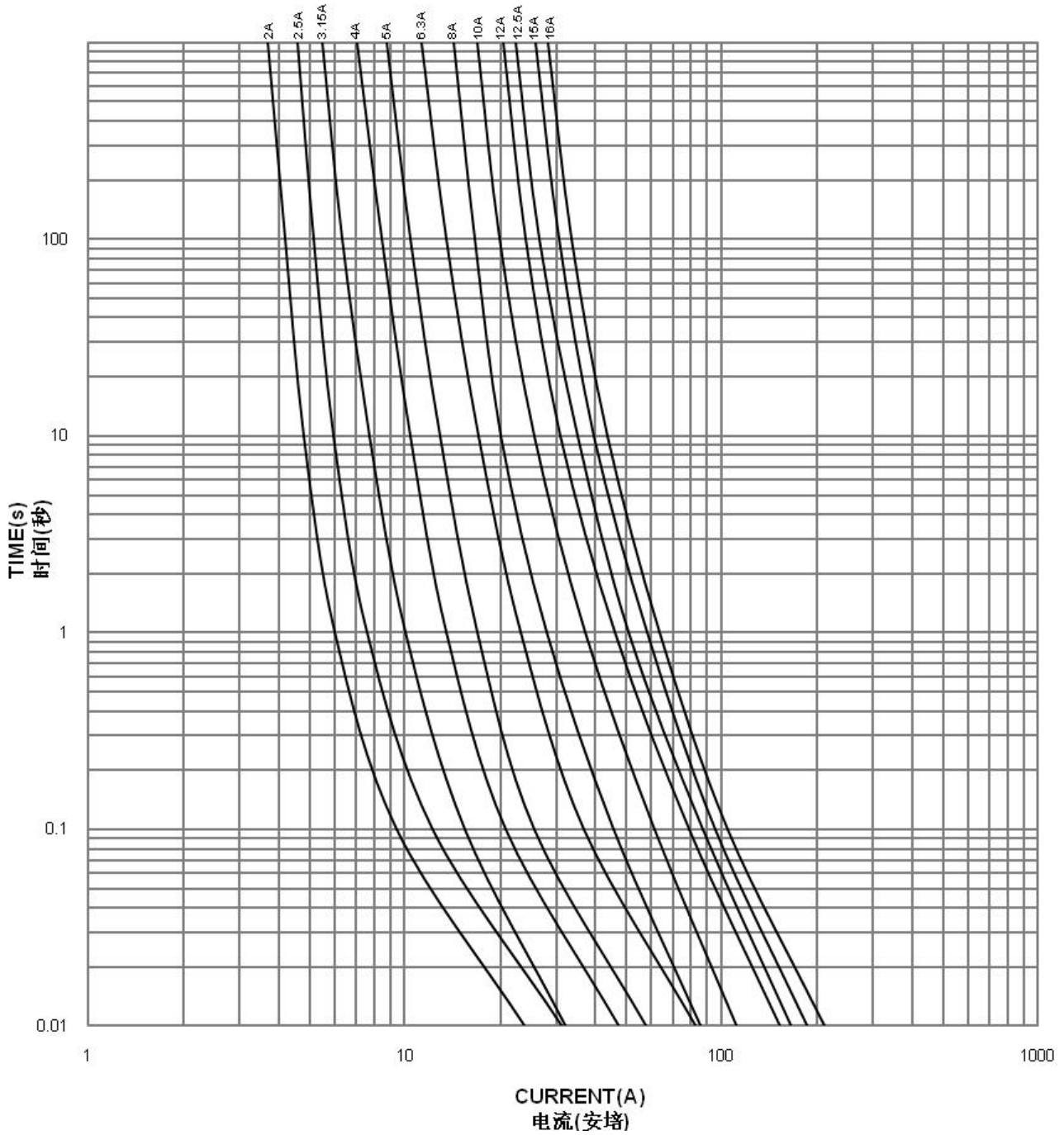
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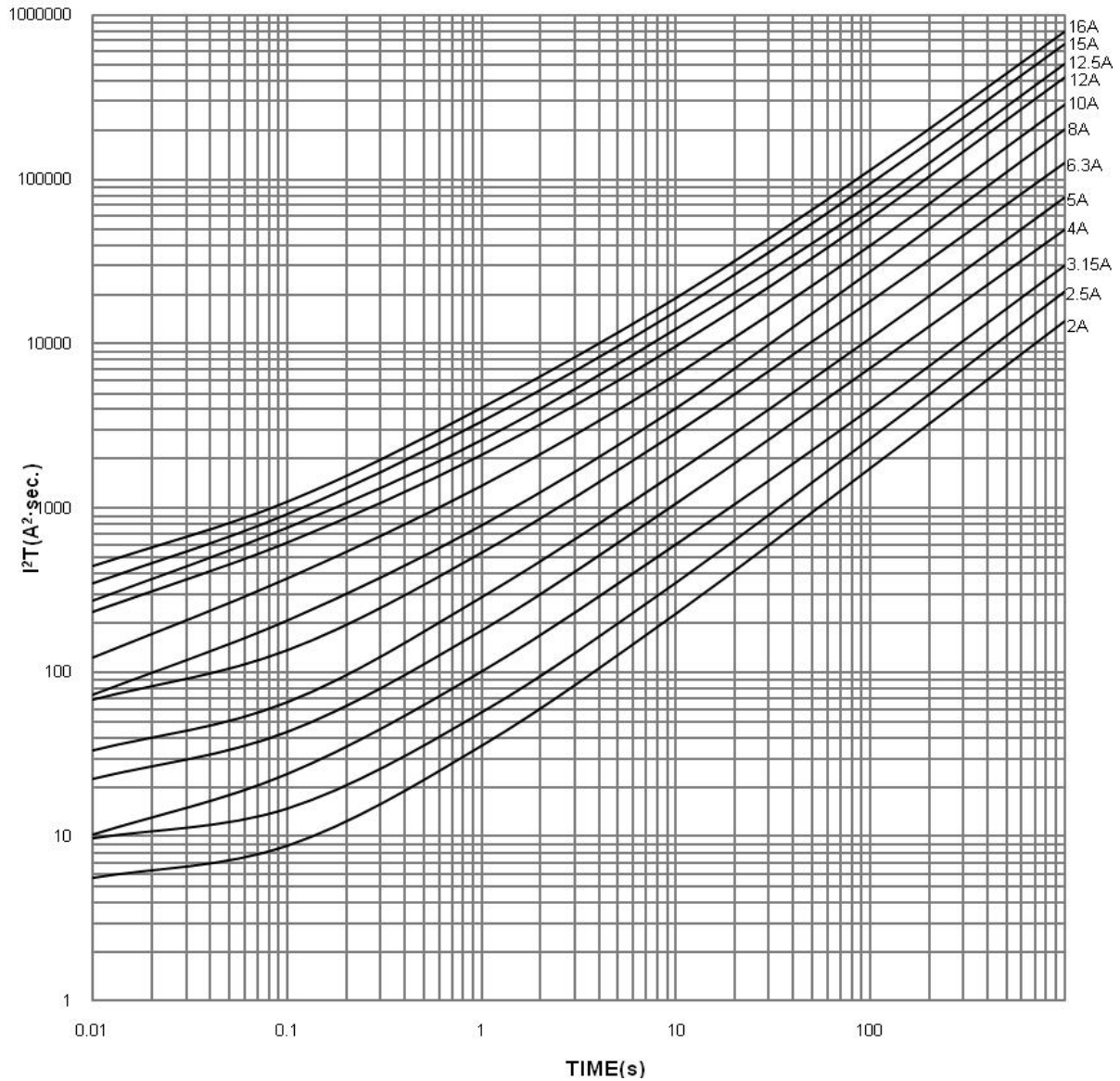
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**5HT RoHS Average I-T Characteristics Curve(For Reference Only)**  
**5HT RoHS 平均电流-时间曲线图(供参考)**



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**5HT RoHS Average I<sup>2</sup>T-T Characteristics Curve(For Reference Only)**



**6.6 电压降、平均 I<sup>2</sup>T 值(供参考)、最大持续功耗/ VOLTAGE DROP, AVERAGE I<sup>2</sup>T VALUE(FOR REFERENCE ONLY) And MAXIMUM SUSTAINED DISSIPATION**

额定电流 Rated Current	1.0I <sub>n</sub> 最大电压降 1.0I <sub>n</sub> VOLTAGE DROP Max.(mV)	平均 I <sup>2</sup> T 值/ Average I <sup>2</sup> T Value(A <sup>2</sup> .sec.)	1.5I <sub>n</sub> 最大持续功耗 1.5I <sub>n</sub> Maximum Sustained Dissipation (W)	额定电流 Rated Current	1.0I <sub>n</sub> 最大电压降 1.0I <sub>n</sub> VOLTAGE DROP Max.(mV)	平均 I <sup>2</sup> T 值/ Average I <sup>2</sup> T Value(A <sup>2</sup> .sec.)	1.5I <sub>n</sub> 最大持续功耗 1.5I <sub>n</sub> Maximum Sustained Dissipation (W)
2A	190	5.650	2.5	8A	100	73.46	4
2.5A	180	9.746		10A	100	123.2	
3.15A	140	10.24	4	12A	80	234.1	
4A	100	22.48		12.5A	80	272.2	
5A	100	33.52	6	15A	80	349.7	
6.3A	100	68.18		16A	80	445.2	

**6.7 电阻测试/ COLD RESISTANCE TEST**

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环境温度为  $25 \pm 2^{\circ}\text{C}$ ，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  $25 \pm 2^{\circ}\text{C}$ .



## 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.

7.2 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: 
- 2) 型号名称/ Type: 5HT
- 3) 商标/ Trademark: 
- 4) 特性符号/ Characteristic Symbol: T
- 5) 额定电流/ Rated Current
- 6) 额定电压/ Rated Voltage

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.

## 8 包装要求/ PACKING DETAILS

### 8.1 外箱包装方式/ EXTERNAL CARTON PACKING

#### 8.1.1 包装方式 A/ PACKING MODE A

8.1.1.1 参考尺寸：长×宽×高=320×240×165mm。

Reference Dimension: Length×Width×Height=320×240×165mm.

8.1.1.2 包装细节：200EA/小塑料袋；25 小塑料袋/大塑料袋；2 大塑料袋/每箱。

Packing Details: 200EA/ little plastic-bag; 25 little plastic-bags/ big plastic-bag; 2 big plastic-bags/ External Carton.

#### 8.1.2 包装方式 B/ PACKING MODE B

8.1.2.1 参考尺寸：长×宽×高=375×245×165mm。

Reference Dimension: Length×Width×Height=375×245×165mm.

8.1.2.2 包装细节：200EA/小塑料袋；5 小塑料袋/盒；10 盒/每箱。

Packaging Details: 200EA/ little plastic-bag; 5 little plastic-bags/ box; 10 boxes/ External 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。

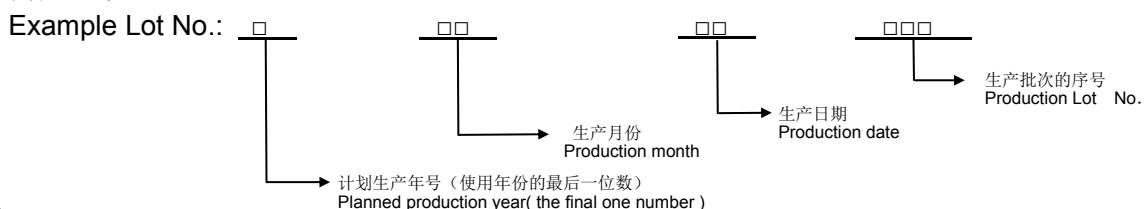
Packing shall be so carried out that the products will not absorb moisture or be damaged during transportation or storage.

### 8.2 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：



## 9 环境参数/ ENVIRONMENT PARAMETERS


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

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

## 10 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% ≤ 30 分、150% ≥ 1 小时 ( $I_n \leq 6.3A$ ) 或 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% ≤ 30minutes, 150% ≥ 1hour ( $I_n \leq 6.3A$ ) or 0.5hour ( $I_n > 6.3A$ ).	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% ≤ 30 分、150% ≥ 1 小时 ( $I_n \leq 6.3A$ ) 或 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% ≤ 30minutes, 150% ≥ 1hour ( $I_n \leq 6.3A$ ) or 0.5hour ( $I_n > 6.3A$ ).	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% ≤ 30 分、150% ≥ 1 小时 ( $I_n \leq 6.3A$ ) 或 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% ≤ 30minutes, 150% ≥ 1hour ( $I_n \leq 6.3A$ ) or 0.5hour ( $I_n > 6.3A$ ).	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% ≤ 30 分、150% ≥ 1 小时 ( $I_n \leq 6.3A$ ) 或 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% ≤ 30minutes, 150% ≥ 1hour ( $I_n \leq 6.3A$ ) or 0.5hour ( $I_n > 6.3A$ ).	每个循环: -40℃放置 30 分钟后 85℃放置 30 分钟, 测试 10 循环。 -40℃/ 30minutes → 85℃/ 30minutes, 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。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% ≤ 30 分、150% ≥ 1 小时 ( $I_n \leq 6.3A$ ) 或 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 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% ≤ 30minutes, 150% ≥ 1hour ( $I_n \leq 6.3A$ ) or 0.5hour ( $I_n > 6.3A$ ).	一箱 10,000 个保险丝管从一米高自由落下, 跌落 20 次。 10,000EA fuses/ one external carton, Falling height: 1 meter, Falling times: 20.

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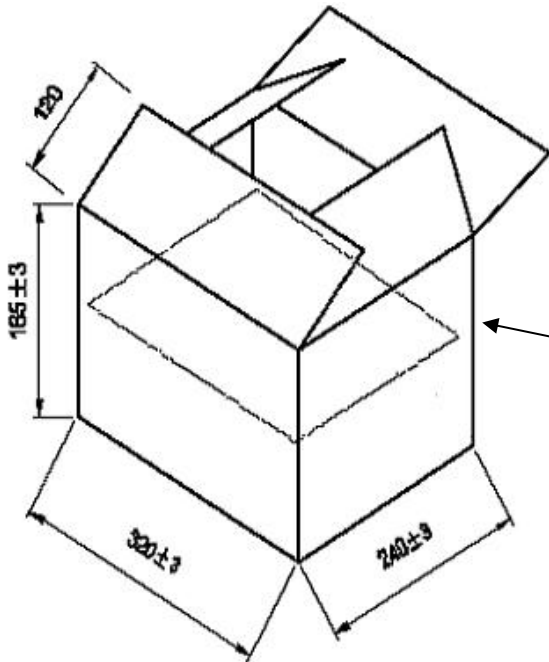
## 包装方式 A Package A

### 大塑料袋 Big-Plastic-Bag



200 个/小塑料袋; 25 小塑料袋/大塑料袋  
200EA/ little plastic-bag; 25 little plastic-bags/ big plastic-bag  
5,000 个/大塑料袋  
5,000EA/ big plastic-bag

### 外箱 External Carton



2 个大塑料袋/箱  
2EA big plastic-bags in one carton

#### 1 重量 Weight

一个外箱(装满 10,000 个保险丝管)毛重 13 公斤/净重 12.5 公斤。

One external carton( filled with 10,000EA fuses ): G.W. 13Kgs/ N.W. 12.5Kgs.

#### 2 原材料 Material

内盒 Inner box: 纸板 Cardboard.


外箱 External carton: 双层瓦楞纸 Double layer corrugated paper, 厚度 Thickness>6mm.

#### 3 印刷标志 Printing and Marking

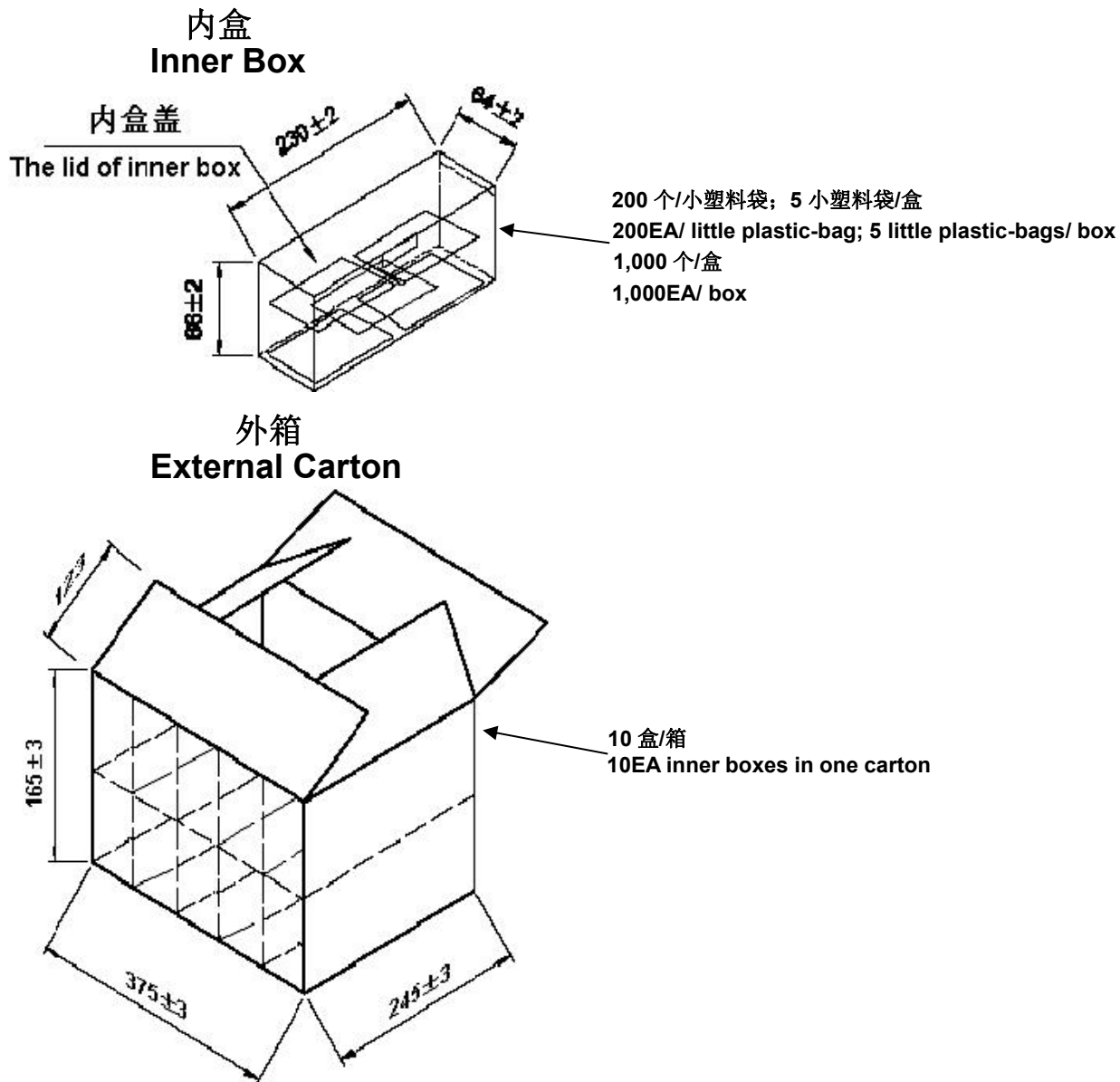
外箱需有公司名称、电话、传真、电子邮箱、网址、商标、安全标志、RoHS、BSI ISO9001 和 CQC ISO14001:2004 等标志。

External carton With Company name, Tel, Fax, E-mail, Web site, Trade make, Safety approval logo, RoHS, BSI ISO9001 and CQC ISO14001:2004 registered firm etc..



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## 包装方式 B Package B



### 1 重量 Weight

一个外箱(装满 10,000 个保险丝管)毛重 13.5 公斤/净重 12.5 公斤。

One external carton( filled with 10,000EA fuses ): G.W. 13.5Kgs/ N.W. 12.5Kgs.

### 2 原材料 Material

内盒 Inner box: 纸板 Cardboard.

外箱 External carton: 双层瓦楞纸 Double layer corrugated paper, 厚度 Thickness>6mm.

### 3 印刷标志 Printing and Marking

外箱需有公司名称、电话、传真、电子邮箱、网址、商标、安全标志、RoHS、BSI ISO9001 和 CQC ISO14001:2004 等标志。

External carton With Company name, Tel, Fax, E-mail, Web site, Trade make, Safety approval logo, RoHS, BSI ISO9001 and CQC ISO14001:2004 registered firm etc..

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