



Microfuse RoHS & Pb-free
好利® 保险丝管



产品规格书

PRODUCT SPECIFICATION

玻璃管保险丝（速断型）

GLASS TUBE FUSE (QUICK-ACTING)

50F RoHS SERIES

编码: A09 HLD-PSI-8068 2022/10/08

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1 适用范围/ SCOPE

本规格书适用于公司按照 IEC 60127 标准生产的 50F RoHS 系列 HOLLY® 商标的小型保险丝管。

This specification defines the technical requirements of miniature fuse type 50F RoHS series with HOLLY® brand, which are according 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: 50F 020 H

* 额定电压/ Rated voltage: H - 250V

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
50F-0125H	50F F125mAL 250V	50F025H	50F F2.5AL 250V
50F-0160H	50F F160mAL 250V	50F-032H	50F F3.15AL 250V
50F-0200H	50F F200mAL 250V	50F-040H	50F F4AL 250V
50F-0250H	50F F250mAL 250V	50F-050H	50F F5AL 250V
50F-0315H	50F F315mAL 250V	50F-063H	50F F6.3AL 250V
50F-0400H	50F F400mAL 250V	50F-080H	50F 8A 250V
50F-0500H	50F F500mAL 250V	50F-100H	50F 10A 250V
50F-0630H	50F F630mAL 250V	50F-125H	50F 12.5A 250V
50F0800H	50F F800mAL250V	50F-160H	50F 16A 250V
50F-010H	50F F1AL 250V	50F-200H	50F F20AL 250V
50F-013H	50F F1.25AL 250V		
50F-016H	50F F1.6AL 250V		
50F-020H	50F F2AL 250V		

型号规格: 型号 特性符号 额定电流 分断能力符号 额定电压
 MODEL DETAIL: Type Characteristic Symbol Rated Current Breaking Capacity Symbol Rated Voltage
 例如/ Example: 50F F 2A L 250V

*特性符号/ Characteristic Symbol: F - 速断型/ Quick-Acting,

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

(8A、10A、12.5A、16A 仅含 CQC 标识时不必标注 “F” “L” 8A、10A、12.5A、16A need not be marked “F” “L” for CQC alone)

2 相关标准/ APPLICABLE STANDARDS

2.1 50F RoHS 系列产品适用的相关标准是 IEC 60127 和 GB 9364。

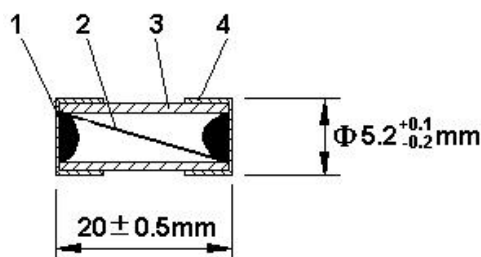
Applicable standards for 50F RoHS series are IEC 60127 and GB 9364.

2.2 认证情况/ APPROVED DETAILS

安全认证 SAFETY APPROVALS	额定电压 RATED VOLTAGE	认证范围 APPROVED RANGE	认证号码 CERT. NO.
SEMKO	250V	200mA~6.3A	SE-S-2001178
		8A、10A	SE-S-2100770
		12.5A、16A	SE-S-2100932
VDE	250V	200mA~10A	40014477
		12.5A, 16A	40031763
BSI	250V	200mA~6.3A	KM 52652
IMQ	250V	125mA~6.3A	E1474
UR/cUR	250V	200mA~16A	E156471
CSA	250V	200mA~6.3	LR101178
KC	250V	160mA~1A	SU05008-3010D
		1.25A~6.3A	SU05008-4005D
		8A,10A	SU05008-11001B
CCC	250V	200mA~6.3A	2020970207000174
CQC	250V	8A, 10A, 12.5A, 16A	CQC10012046370
PSE	250V	1A~5A	JET 2489-31003-2004
		5.1A~15A	JET 2489-31003-2005

3 构造图/ CONSTRUCTION FIG.&DIMENSION

3.1 DIMENSION (Unit: mm)



编号 No.	品名 PART	材料名 MATERIAL MODEL	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	金属丝/ Metal Wire	/
3	管体/ Tube	玻璃管/ Glass Tube	
4	铜帽/Cap	黄铜/ Brass	镀镍/ Nickel Plated

3.2 玻璃管/ GLASS TUBE

玻璃管无破裂、缺损或污染等现象，且须透明易辨其内部的可熔体。

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

3.3 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℃ and 35℃. After remove from the water, an axial pull steadily increasing to 10N is applied to each cap for 1 minute.

3.4 焊点/ SOLDERING JOINT

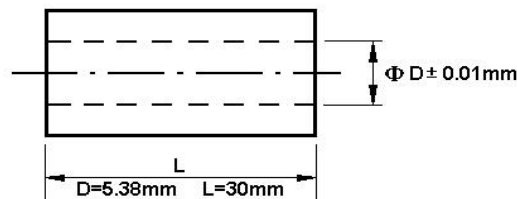
焊接铜帽端时，铜帽外表面不能有残留的助焊剂、焊锡、可熔体等异物。

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.

3.5 准直度/ ALIGNMENT

保险丝管的全长必须能以保险丝自身的重量全部通过准直度卡规。其具体图形如下。

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两项试验。/ 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.

5 电气特性/ ELECTRICAL PERFORMANCE

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

具体技术参数如下表

The specific technical parameters are shown in the table below..

额定电流 Rated Current (A)	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 Dissipations (W)	电阻 electric resistance(Ω)	I ² T
125mA	250	2,000	1.6	4.0000	0.0127
160mA	250	2,000	1.6	4.0800	0.0261
200mA	250	1,700	1.6	1.2800	0.0619
250mA	250	1,400	1.6	1.8000	0.0448
315mA	250	1,300	1.6	1.3400	0.0824
400mA	250	1,200	1.6	0.9170	0.1361
500mA	250	1,000	1.6	0.6280	0.2249
630mA	250	650	1.6	0.4190	0.4149
800mA	250	240	1.6	0.1340	0.6344
1A	250	200	1.6	0.1010	1.056
1.25A	250	200	1.6	0.0800	1.811
1.6A	250	190	1.6	0.0545	3.071
2A	250	170	1.6	0.0390	6.576
2.5A	250	170	1.6	0.0290	10.91
3.15A	250	150	2.5	0.0228	18.62
4A	250	130	2.5	0.0183	28.70
5A	250	130	2.5	0.0137	45.70
6.3A	250	130	2.5	0.0104	73.11
8A	250	130	4	0.0079	139.3
10A	250	130	4	0.0065	257.0
12.5A	250	100	6	0.0050	424.6
16A	250	100	6	0.0031	701.4
20A	250	100	6	0.0025	1081

5.3 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。

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.

额定电流 Rated Current	2.1I _n	2.75I _n		4I _n		10I _n
	Max.	Min.	Max.	Min.	Max.	Max.
32mA-100mA	30min.	10ms	500ms	3ms	100ms	20ms
>100mA-6.3A	30min.	50ms	2sec.	10ms	300ms	20ms
>6.3A-10A	30min.	50ms	2sec.	10ms	400ms	40ms
>10A~16A	30min.	50ms	3sec.	10ms	400ms	50ms
>16A	30min.	100ms	6sec.	20ms	600ms	60ms

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。

Rated breaking capacity is 35A or 10I_n whichever is greater, tested with A.C..

5.5 耐久性试验/ ENDURANCE TEST

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

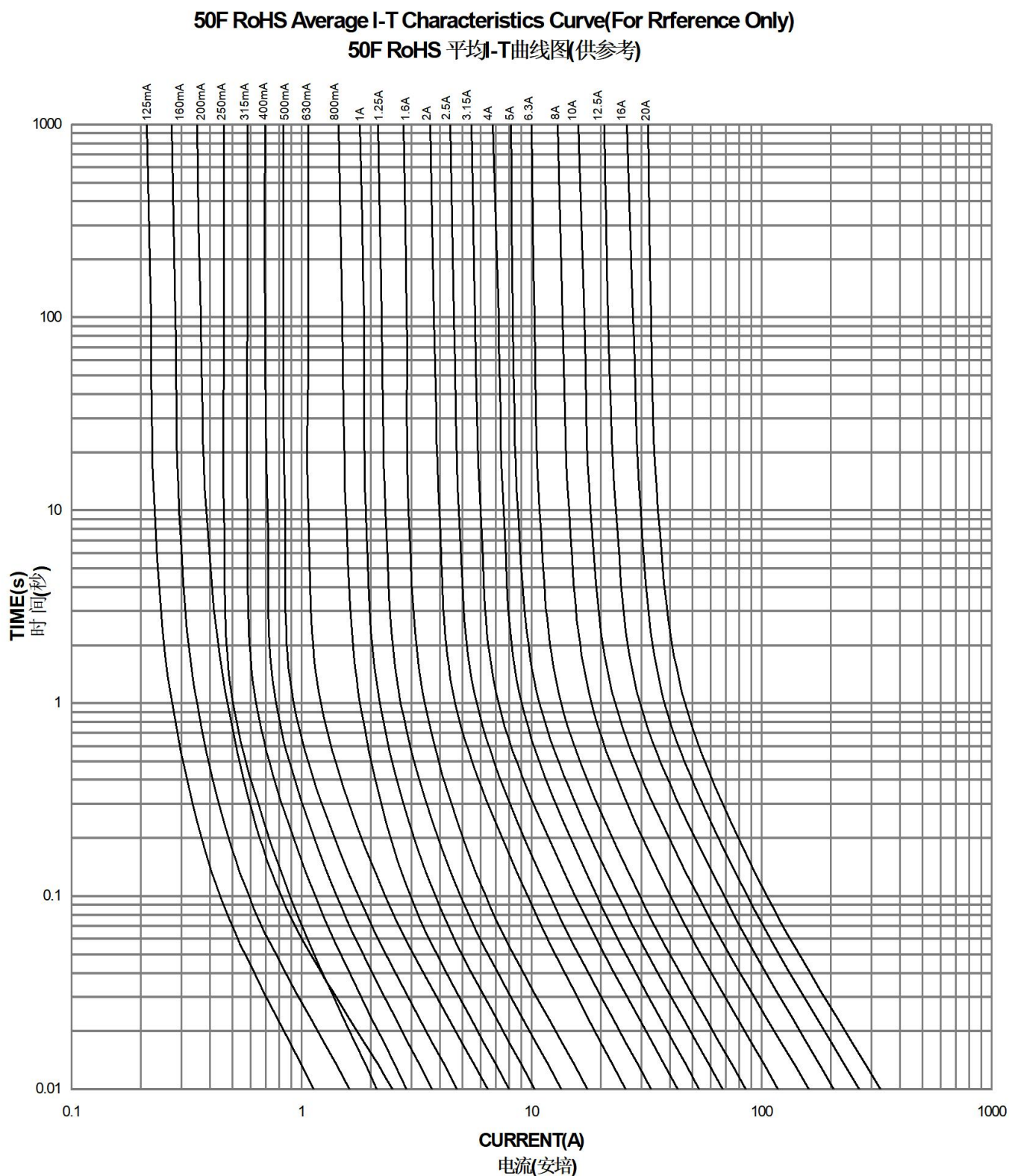
A 对熔断体通过 1.2 倍的额定电流 1 小时, 然后切断电流 15 分钟, 重复此循环 100 次。/ A current 1.2I_n is passed through the fuse-link for a period of 1hour. The current is then switched off for a period of 15 minutes. The cycle is repeated 100 times.

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

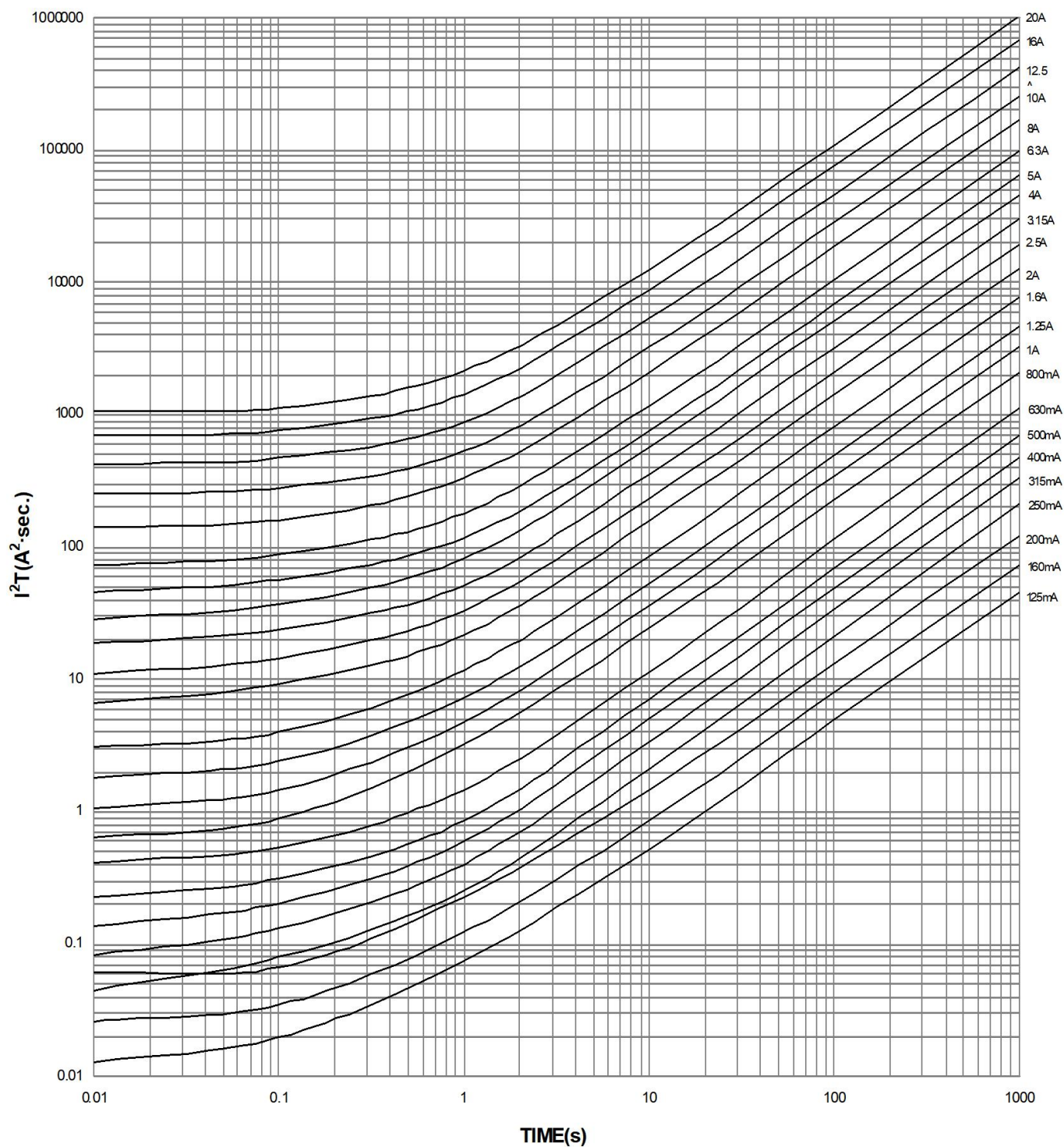
D 试验后, 标记应仍清晰可辨, 而且诸如端帽上的焊点不应出现任何明显的劣变。/ After the test, the marking shall still be legible and soldered joints on end caps, for example, shall not show and appreciable deterioration.

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



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

50F RoHS Average I^2T -T Characteristics Curve(For Reference Only)



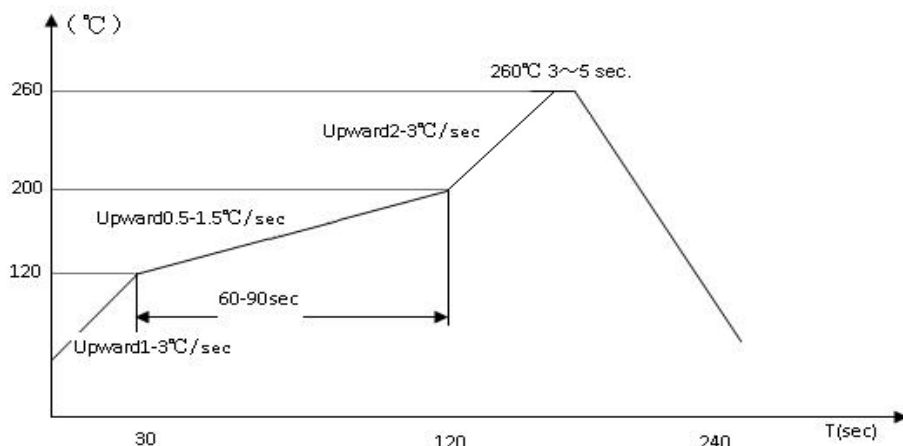
5.8 焊接参数/ Soldering Parameters

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

建议波峰焊接图形/ Suggest wave soldering graphics

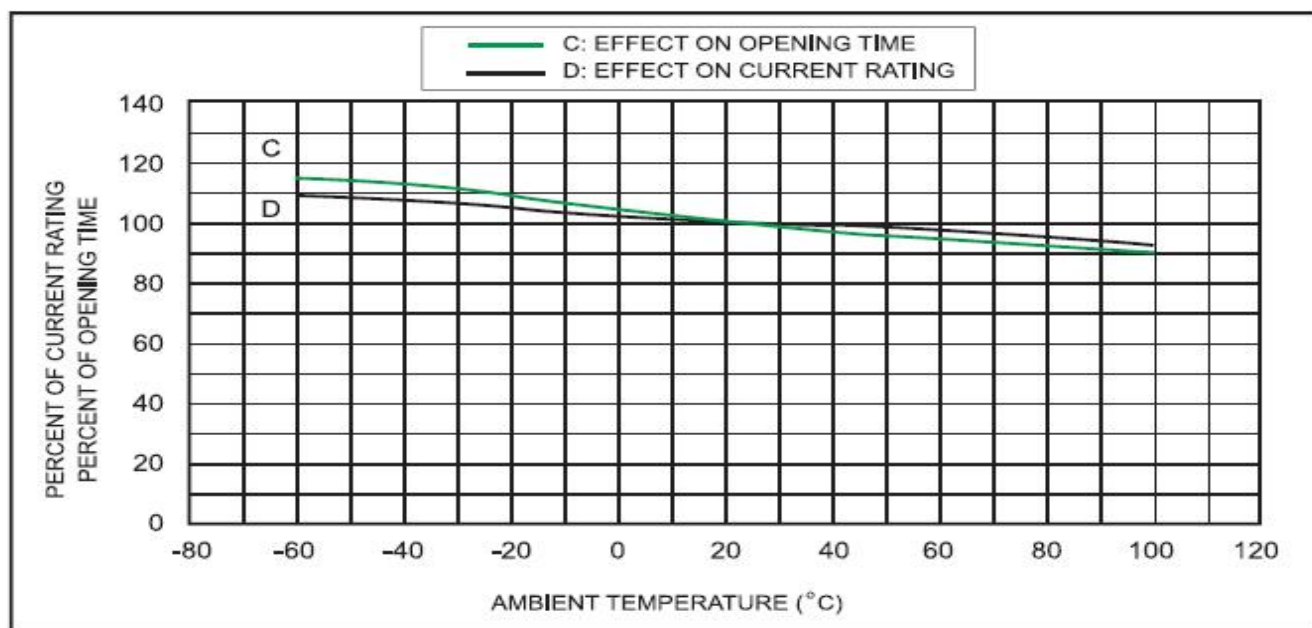


5.9 电阻测试/ COLD RESISTANCE TEST

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 $25 \pm 2^\circ\text{C}$.

5.10 温度降额曲线/ Temperature rating curve



(II) Effect on rating and opening time in 5In of fast-blow and slow-blow fuse

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: 
 - 2) 型号名称/Type: 50F(只有 CCC 认证时不需打 50F 标记/ 50F is not marked on the cap for the fuse which only have CCC approval.)
 - 3) 商标/ Trademark: 
 - 4) 特性符号/ Characteristic Symbol: F(8A、10A、12.5A、16A 仅含 CQC 标识时不必标注 “F” 8A、10A、12.5A、16A need not be marked “F” for CQC alone)
 - 5) 额定电流/ Rated Current
 - 6) 分断能力符号/ Breaking Capacity Symbol: L(8A、10A、12.5A、16A 仅含 CQC 标识时不必标注 “L” 8A、10A、12.5A、16A need not be marked “L” for CQC alone)
 - 7) 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)、6) 和 7) 应标注在保险丝管另一端铜帽的侧面。
- 4), 5), 6) and 7) should be marked on the other side cap of the fuse.

7 包装要求/ PACKING DETAILS

7.1. 包装方式 A/ PACKING MODE A

7.1.1. 参考尺寸: 长×宽×高=320×240×165mm。

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

7.1.2 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.

7.2 包装方式 B/ PACKING MODE B

7.2.1 参考尺寸: 长×宽×高=375×245×165mm。

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

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

Packing Details: 200EA/ little plastic-bag; 5 little plastic-bags/ box; 10 boxes/ External Carton.

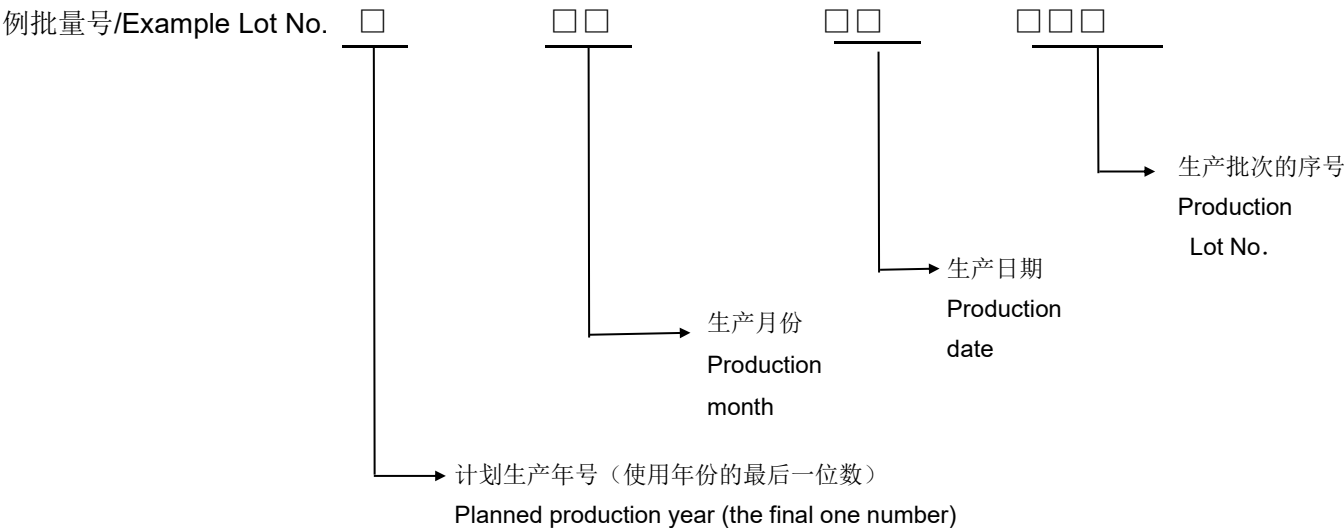
产品的包装应能达到防潮、抗振的作用，以防在运输或贮存过程中产品受潮或损坏。

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

7.3 标签/ LABEL

标签应包括型号、额定电流、额定电压、分断电流、商标、安全标志、批量号码、公司名称、RoHS 标志、绿色“G”和“QA”标志。

The label in the smallest package in which the fuses are put shall contain the Type, Rated current, Rated voltage, Interrupting current, Trademark, Safety approval logo, Lot. No., Company name, “RoHS” mark, green “G” and “QA” mark.



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%≤30 分、150%≥1 小时(I _n ≤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 ≤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 low 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 °C , 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 humidity 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 °C , 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 thermal 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($I_n > 6.3A$).	每个循环：-40℃放置 30 分钟后 85℃放置 30 分钟，测试 10 循环。 -40 °C / 30minutes → 85 °C / 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.