

## 规格承认书

## SPECIFICATION FOR APPROVAL

客户名称:

CUSTOMER: \_\_\_\_\_

产品名称:

贴片保险丝 SMD FUSE

PRODUCT NAME: \_\_\_\_\_

型号:

1032T (RoHS) 3.2\*10.2 (1032) mm

MODEL NO.: \_\_\_\_\_

客户规格:

CUST.SPECIFICATION: \_\_\_\_\_

客户料号:

CUST.PART NO.: \_\_\_\_\_

供应商:

SUPPLIER: \_\_\_\_\_

DONGGUAN AMPFORT ELECTRONICS CO., LTD.

地址:

东莞市石龙镇西湖李屋园工业园

ADDRESS: \_\_\_\_\_

Liwu Industrial Park,Liwuyuan Village,Xihu District, Shilong Town,Dongguan

电话: 0769-86293298

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供方签章:

SUPPLIER: \_\_\_\_\_

需方签章:

CUSTOMER: \_\_\_\_\_

日期:

DATE: \_\_\_\_\_

日期:

DATE: \_\_\_\_\_

# 规格承认书

## Specification for approval



表面贴装保险丝 300V350V400V500V600V

产品名称: 1032T 系列 1032/1025 慢断型

Product Type: 1032T Series 1032/1025 *Time-Lag*

*Surface Mount Fuse 300V350V400V500V600V*



## 1. 产品特性及应用范围 / Description, Features and Applications

本产品适用于各类电子设备电路初、次级电路板的过流保护, 广泛应用于固态照明、电池充电、消费电子、电子镇流器、LED AC/DC 电源供应、网络通信、医疗仪器及工业控制器等领域。

### Descriptions:

Ampfort R1032 series slow-blow square Surface Mount fuses are ceramic tube/end cap constructions, RoHS compliant, Halogen Free and lead(Pb) exempts of the requirements of RoHS Directive(2002/95/EC), with U.S. (UL/CSA) safety agency approvals. Provide board level primary and secondary circuit protection in a wide variety of applications. With excellent inrush current withstanding capability, excellent reliability for thermal and mechanic shock, also have a high reliability and stable solder ability, end caps are available in gold/silver/nickel plated.

### Features:

- Time-Lag (Slow-Blow)
- Wide range of current rating available
- Low temperature de-rating
- Tape and Reel for automatic placement
- Small size(10.2mm\*3.2mm)
- Wide operating temperature range
- RoHS compliant
- Conflict free metals

### Applications:

- LED lighting
- LCD backlight inverter
- PC server
- Wireless base station
- Digital camera
- Notebook PC
- Portable Devices
- Cooling fan system
- White goods
- Industrial equipment
- Battery devices
- Power supply
- Storage system
- Game console
- Medical equipment
- LCD/PDP devices
- Networking devices
- Telecom system
- Office equipment
- Automotive devices

## 2. 安规认证标准及编号 / Standards and Agency Approvals

2.1 执行标准: 遵循 UL 248-14。

Standards: In accordance with UL 248-14.

2.2 认证范围 Certification:

安规标准 Agency	认证范围 Ampere Range	证书编号 Agency File Number
UL	200mA ~ 5A	E340427(JDYX2)
cUL	200mA ~ 5A	E340427(JDYX8)

2.3 目录编号 Catalogue No., ● 已认证 Approved / ○ 认证中 Pending

目录编号 Catalog No.	额定电流 Ampere Rating	额定电压 Voltage Rating		分断能力 Breaking Capacity	冷阻值 Nominal Cold Resistance (Ohms)	熔化热能 I <sup>2</sup> T Melting Integral(A <sup>2</sup> .S)	安规认证 Agency Approvals	
1032T.0200	200mA	300V/350V/400V/500VAC/DC	600VAC/DC	100A@300V350V 400V500V 600VAC/DC 150A@300V350V 400V500V AC/DC	2.550	0.080	●	●
1032T.0250	250mA				1.630	0.218	●	●
1032T.0300	300mA				1.102	0.387	●	●
1032T.0315	315mA				1.040	0.367	●	●
1032T.0375	375mA				0.620	0.731	●	●
1032T.0500	500mA				0.540	1.025	●	●
1032T.0630	630mA				0.351	2.021	●	●
1032T.0800	800mA				0.180	3.091	●	●
1032T.1100	1A				0.177	4.011	●	●
1032T.1125	1.25A				0.122	7.340	●	●
1032T.1150	1.5A				0.072	11.92	●	●
1032T.1160	1.6A				0.071	12.63	●	●
1032T.1200	2A				0.055	14.40	●	●
1032T.1250	2.5A				0.041	28.12	●	●
1032T.1300	3A				0.032	44.90	●	●
1032T.1315	3.15A	0.031	45.60	●	●			
1032T.1350	3.5A	0.025	62.30	●	●			
1032T.1400	4A	0.023	63.90	●	●			
1032T.1500	5A	0.015	112.5	●	●			

- \*: These catalog no. cold resistance and I<sup>2</sup>t value are pending due to fuse elements shall be customized;
- DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C;
- Typical Pre-arching I<sup>2</sup>t are calculated at 10\*In Current or 8ms;
- Min Interrupting Rating: 1.35\*In.

3. 产品标示 / Product Marking

保险丝上需有下列标示 / The fuses shall have the following markings

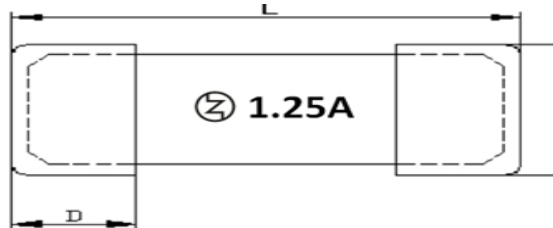
示例 Example:

	1.25A	①	制造厂商标识/Trade Mark:
①	②	②	额定电流/Rated Current (A): ___A 或 or ___mA

注: 对于标示的大小和位置没有规定 / Note: Size and position of the markings shall not be provided.

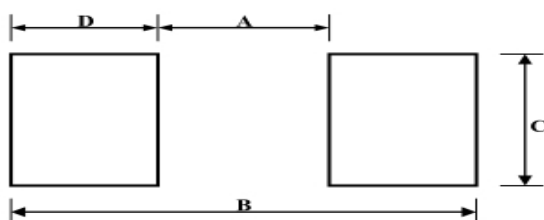
#### 4. 结构及尺寸 / Dimensions and Structure

单位: 毫米 / Unit: mm



L (mm)	W (mm)	T (mm)	D (mm)
10.25±0.20	3.20±0.15	3.20±0.15	1.90±0.10

Recommended pad layout



Dimensions	A(mm)	B (mm)	C(mm)	D(mm)
Spec	5.72±0.3	12.6±0.3	3.43±0.3	3.25±0.3

#### 5. 材料明细 / Material Details

编号 NO.	零件名称 Part Name	材质 Material
①	端帽 End caps	黄铜镀金 Au Plated Brass Cap
②	主体 Body	陶瓷管 Non-Transparent Square Ceramic Tube
③	熔丝 Fuse element	合金 Cu-Ag Alloy wire

#### 6. 产品特性 / Product Characteristics

编号 NO.	项目 Item	内容 Content	参考标准 Reference standards
1	产品标识 Product Marking	Brand, Ampere Rating	Marking standards
2	工作温度 Operating Temperature	-55°C to 125°C	-55°C to 125°C with proper derating
3	可焊性 Solderability	T=240°C±5°C, t=3sec±0.5sec, Coverage≥95%	MIL-STD-202, Method 208
4	耐焊接热 Resistance to Soldering Heat	10 sec at 260°C	MIL-STD-202, Method 210, Test condition B
5	绝缘阻抗	10,000 ohms minimum	MIL-STD-202, Method 302, Test

	Insulation Resistance (after Opening)		Condition A
6	热冲击 Thermal Shock	5 cycles, -65°C / +125°C, 15 minutes at each extreme	MIL-STD-202, Method 107, Test Condition B
7	机械冲击 Mechanical Shock	100G's peak for 6 milliseconds, 3cycles	MIL-STD-202, Method 213, Test I
8	振动试验 Vibration	0.03"amplitude, 10-55 Hz in 1 min. 2hrs each XYZ=6hrs	MIL-STD-202, Method 201
9	耐湿性 Moisture Resistance	10 cycles	MIL-STD-202, Method 106
10	盐雾试验 Salt Spray	5% salt solution, 48hrs	MIL-STD-202, Method 101, Test Condition B

## 7. 电气特性 / Electrical Characteristics

### 7.1 实验条件: Test Condition

所有测试环境温度均为 25±5℃。

All electrical test is to be conducted with the ambient air at a temperature of 25±5℃.

### 7.2 分断能力 Interrupting Rating:

保险丝承受分断能力: 100A@300V 350V 400V 500V 600Vac/dc,

150A@300V350V400V500Vac/dc.

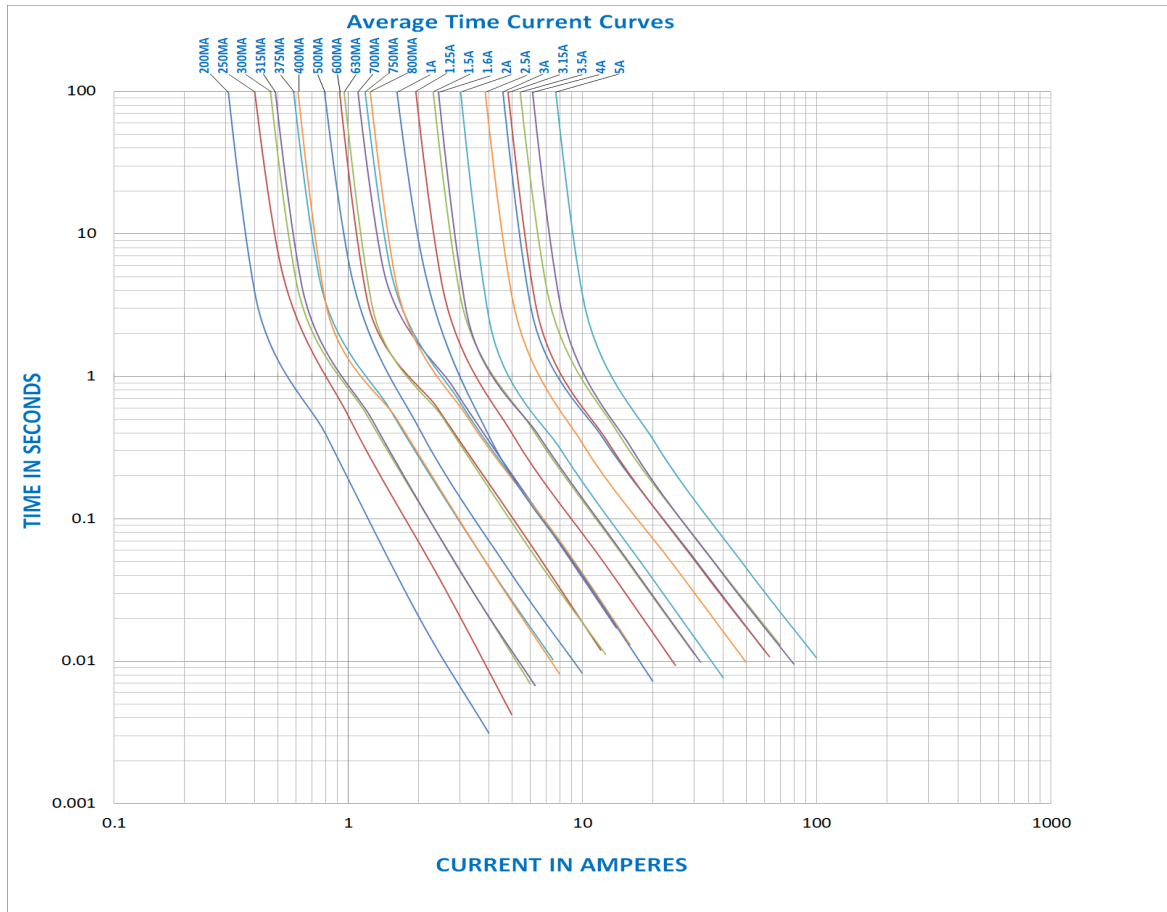
Breaking Capacity: 100A@300V350V400V500V600Vac/dc,

150A@300V350V400V500Vac/dc

### 7.3 熔断时限 / Operating Characteristics

额定电流的% % of Ampere Rating(In)	熔断时间 Blowing Time
100% * In	大于 4 小时(4 hours Min)
200% * In	小于 120 秒 (120 sec Max)

7.4 平均时间电流曲线图 / Average Time Current Curves

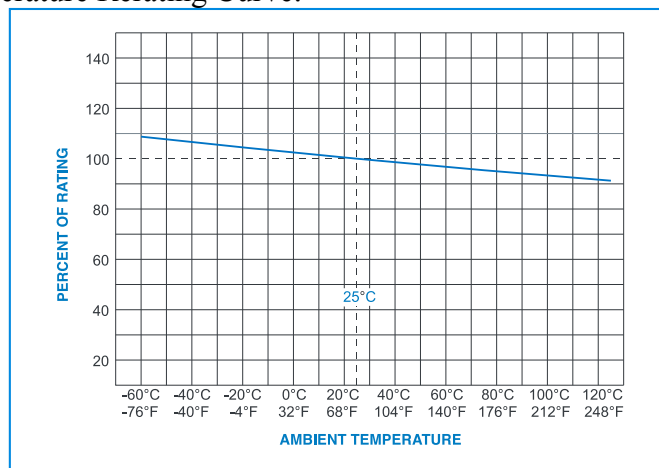


8. 环境特性 / Environmental Characteristic

若操作环境温度超出  $25 \pm 5^\circ\text{C}$  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，请参照如下：温度-电流曲线图。

When choosing the fuse's specification, if the operating environmental temperature beyond the scope from  $20\sim 30^\circ\text{C}$ , engineer should consider the environmental temperature's affection to fuses.

Please refer: Temperature Rerating Curve:



**9. 建议焊接参数 / Recommended Soldering Parameters**

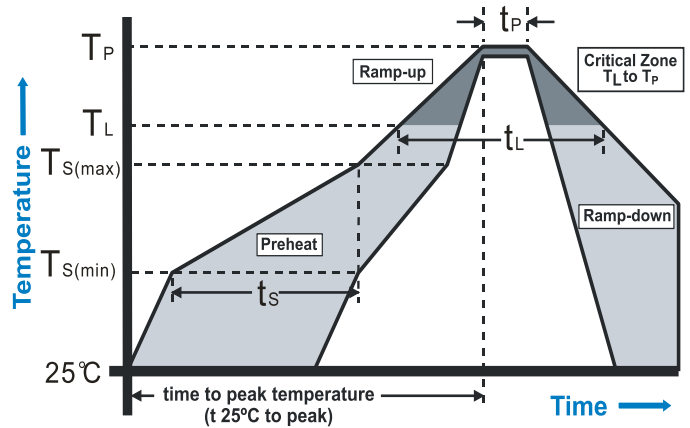
**A. 波峰/回流焊参数 / Wave /Reflow Soldering Parameters:**

锡膏工艺 / Solder paste process.

锡炉温度 / Solder Pot Temperature: 260°C Max

焊接时间 / Solder Dwell Time: 5 seconds max

Reflow Condition		Pb-Free assembly
Average ramp-up rate (Ts(max)to Tp)		5°C /second max.
Preheat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (Min to Max) (ts)	60-120 seconds
Reflow	Temperature (TL)	220°C
	Time Max (tL)	60 seconds
Peak Temperature(Tp)		260°C max
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (Tp)		8 minutes max



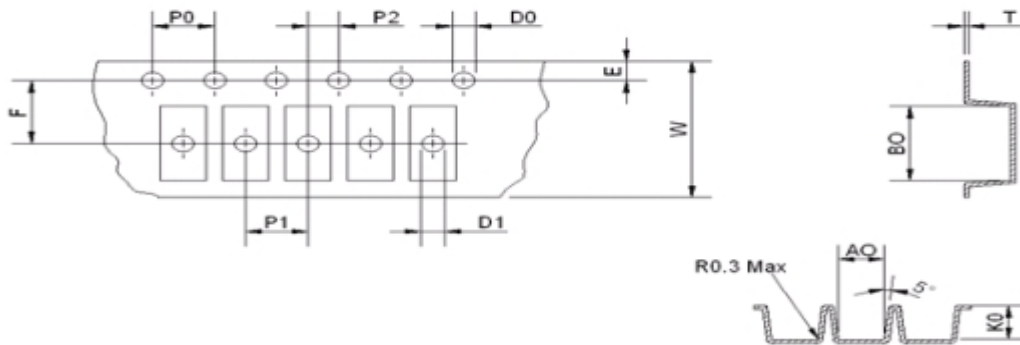
**B. 手工焊参数 / Hand-Solder Parameters:**

烙铁温度 / Solder Iron Temperature: 300±5°C

焊接时间 / Heating Time: 1~2 s Max

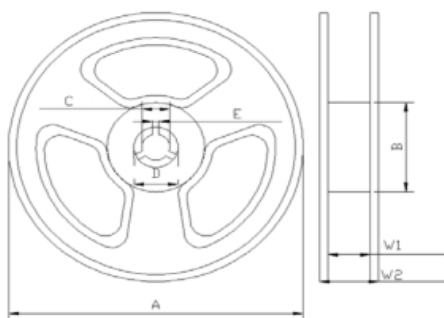
**10. 包装 / Packaging**

**2000 pieces of fuses on 24mm tape-and-reel on 13 inch (330mm) reel**



Symbol	A0(mm)	B0(mm)	E(mm)	F(mm)	W(mm)	K0(mm)
Spec.	3.50±0.10	10.60±0.15	1.75±0.10	11.50±0.10	24.00±0.30	3.50±0.10
Symbol	P0(mm)	P1(mm)	P2(mm)	D0(mm)	D1(mm)	T(mm)
Spec.	4.00±0.10	8.00±0.10	2.00±0.10	1.50+0.10/-0	1.50+0.10/-0	0.35±0.05





Type	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	W1(mm)	W2(mm)
Spec	330.0±2.0	100.0±1.5	13.0±0.5	21.0±0.5	2.2±0.2	24.5±1.5	28.5±2.0

## 11. 其他 / Others

11.1 如果在使用中有超出本规格书的要求，须经双方协商确认。

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

## 附件 I: 安规证书 / Appendix I: Safety approval certificates