

INDIVIDUAL SPECIFICATION SHEET

Product Name: 表面贴装保险丝

Part Number: TA2VF Series

Revision: B



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| Rev. | Effective Date | Changed Contents |
|------|----------------|------------------|
| A | 2020-11-25 | New Release |
| B | 2021-11-12 | 变更包装数量 |
| | | |

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PREPARED BY



APPROVED BY



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，广泛应用于绿色照明、消费电子、电源供应、网络通信、医疗仪器及工业控制器等领域。

Descriptions:

TLC TA2VF series fast-acting 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:

| | |
|--|----------------------------------|
| Fast-Acting | Small size(6.1mm*2.5mm) |
| Wide range of current rating available | Wide operating temperature range |
| Low temperature de-rating | RoHS compliant |
| Tape and Reel for automatic placement | Conflict free metals |



Applications:

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

| 安规标准 Agency | 认证范围 Ampere Range | 证书编号 Agency File Number |
|---|----------------------|----------------------------|
|  | 50mA ~ 15A | E467707(JDYX2) |
|  | 50mA ~ 15A | E467707(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 | 熔化热能 I ² TMelting Integral(A ² .S) | 安规认证 Agency Approvals | |
|------------------------|--------------------------|---------------------------|------------------------------|--------------------------------------|--|--------------------------|----|
| | | | | | | UL | UL |
| TA2VF0500 | 500mA | 250VAC | 50A@250VAC | 0.320 | 0.265 | ● | ● |
| TA2VF1 | 1A | | | 0.125 | 2.350 | ● | ● |
| TA2VF1.5 | 1.5A | | | 0.085 | 5.805 | ● | ● |
| TA2VF2 | 2A | | | 0.067 | 8.260 | ● | ● |
| TA2VF3 | 3A | | | 0.033 | 19.350 | ● | ● |
| TA2VF5 | 5A | | | 0.019 | 37.550 | ● | ● |
| TA2VF7 | 7A | | | 0.015 | 115.350 | ● | ● |

- > DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C;
- > Typical Pre-arcing I2t are calculated at 10*In Current or 8ms;

3. 产品标示 / Product Marking

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

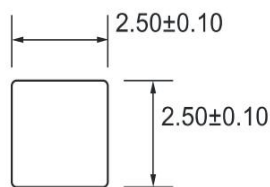
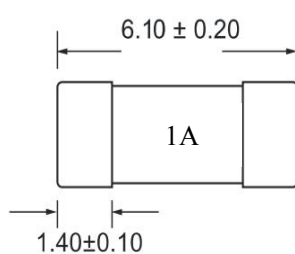
示例 Example:

| | |
|---|---|
| ① | 额定电流/Rated Current (A): ____A 或or ____ mA |
|---|---|

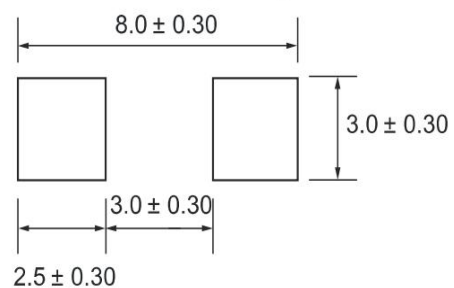
注:对于标示的大小和位置没有规定 / Note: Size and position of the markings shall not be provided.

4. 结构及尺寸 / Dimensions and Structure

单位: 毫米 / Unit: mm



Recommended pad layout



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 | TLC marking standards |
| 2 | 工作温度 Operating Temperature | -55°C to 125°C | IEC60068-2-1/2 |
| 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 Insulation Resistance (after Opening) | 10,000 ohms minimum | MIL-STD-202, Method 302, Test 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

所有测试环境温度为 $25\pm 5^{\circ}\text{C}$ 。

All electrical test is to be conducted with the ambient air at a temperature of $25\pm 5^{\circ}\text{C}$.

7.2 分断能力 Interrupting Rating:

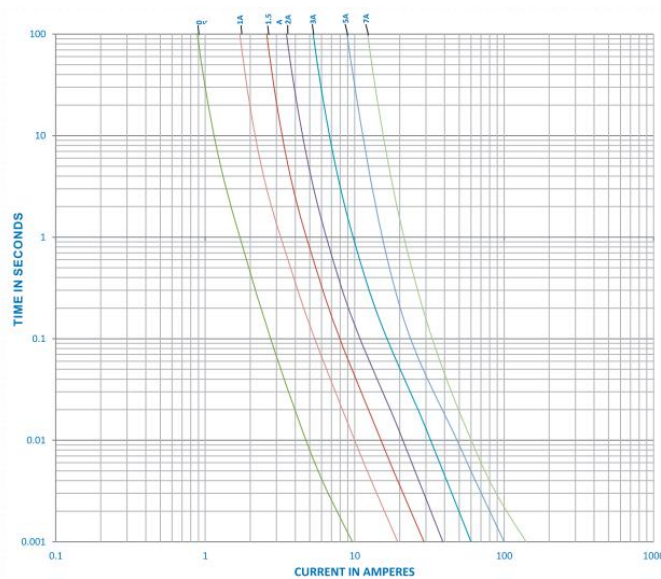
保险丝承受分断能力: 50A@250Vac.

Breaking Capacity: 50A@250Vac.

7.3 熔断时限 / Operating Characteristics

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

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

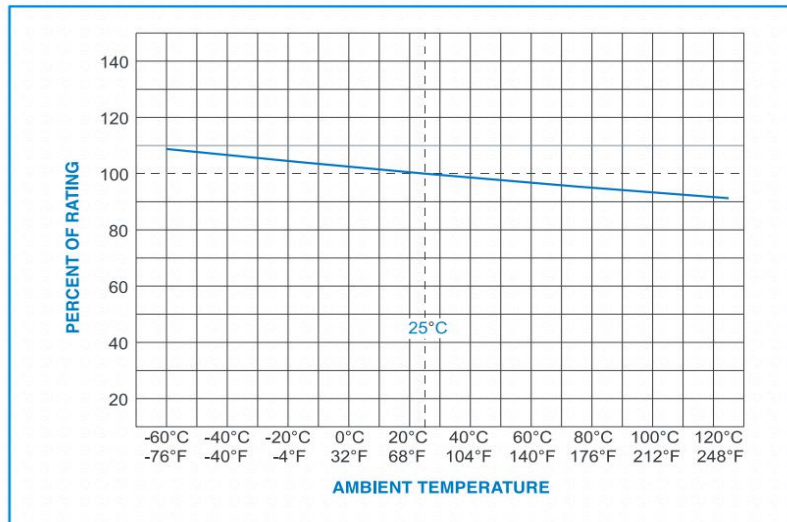


8.环境特性 / Environmental Characteristic

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:



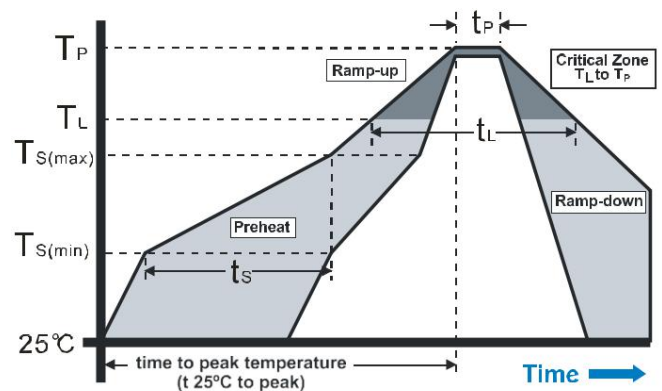
9. 建议焊接参数 / Recommended Soldering Parameters

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

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 | 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 |



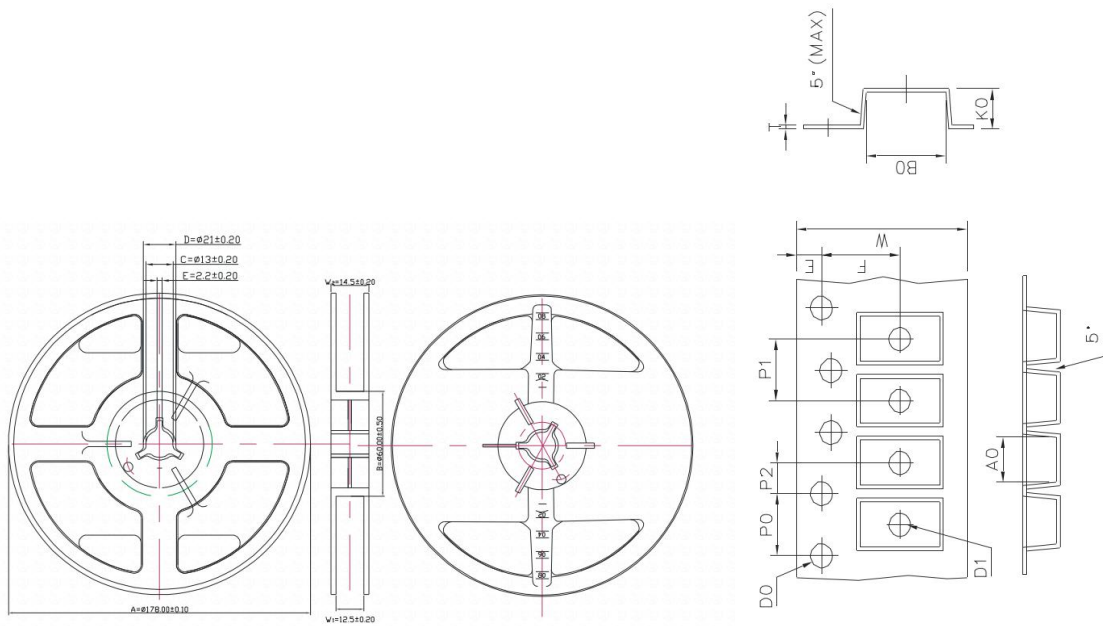
B. 手工焊参数 / Hand-Solder Parameters:

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

焊接时间 / Heating Time: 1~2 s Max

10. 包装 / Packaging

1500 个每卷 / 1,500 pcs in 7 inches dia. reel, 12mm wide tape, EIA Standard 481



| Item | A | B | C | D | E | W1 | W2 |
|-----------|----------|---------|---------|---------|----------|-----------|-----------|
| Spec.(mm) | 178±0.10 | 60±0.50 | 13±0.20 | 21±0.20 | 2.2±0.20 | 12.5±0.20 | 14.5±0.20 |

| Item | A0 | B0 | D0 | D1 | E | F |
|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| Spec.(mm) | 2.70±0.10 | 6.40±0.10 | 1.50±0.10 | 1.50±0.25 | 1.75±0.10 | 5.50±0.10 |
| Item | K0 | P0 | P1 | P2 | W | t |
| Spec.(mm) | 2.70±0.10 | 4.00±0.10 | 4.00±0.10 | 2.00±0.10 | 12.00±0.15 | 0.25±0.05 |

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.

11.2 如果本规格书有不适当的情况，须通过双方协商并由本公司修改。

In the event that an impropriety is found in this specification, TLC. shall amend it by mutual agreement between the parties.

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[R06.100.0.75](#) [R06.100.0.375](#) [R06.100.0.5](#) [R06.000.7](#) [R06.100.7](#) [S0603-S-2.0A](#) [F06F3.5](#) [F12F20](#) [TA3VT2](#) [F12F1](#) [F06F7](#) [F06T3.5](#)
[F06F0.375](#) [F06T8](#) [F12F30](#) [4T2A250V](#) [R12.100.7](#) [R12.100.30](#) [R06.000.0.25](#) [R12.100.6](#) [R12.000.0.25](#) [R12.000.6](#) [R12.000.10](#)