REOMAX ELECTRONICS TECHNOLOGY Co.,LTD

# 承　认　书

# SPECIFICATION FOR APPROVAL

客户名称
Customer name

客户料号
Customer material No.

产品名称
Product name　　贴片保险丝（6125.2410.1808）

产品型号
Product model

送样日期
Deliver date　　年　　月　　日

| 本司确认（TRX APPROVAL） | | | |
|---|---|---|---|
| 检验<br>Inspection | 校对<br>Proofreading | 批准<br>Approval | 签章<br>Signature |
| 唐军 | 唐盛华 | 罗雄 | |
| 客户确认（CUSTOMER APPROVAL） | | | |
| 检验<br>Inspection | 校对<br>Proofreading | 批准<br>Approval | 签章<br>Signature |
| | | | |

确认结果Verify the results：

☐合格Qualified　☐不合格Unqualified　☐其他Other

# 规格承认书

# Specification for approval




## 表面贴装保险丝 250V

**产品名称：SEF 系列 2410/6125/1808 快断型**

**Product Type: SEF Series 2410/6125/1808** ***Fast-Acting***

***Surface Mount Fuse 250V***

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## 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：

REOMAX 6125 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/n*ickel plated.*

### *Features：*

- *Fast-Acting ( 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 Certification：

| 安规标准<br>Agency | 认证范围<br>Ampere Range | 证书编号<br>Agency File Number |
|---|---|---|
| UL | 50mA ~ 7A | E340427(JDYX2) |
| cUL | 50mA ~ 7A | E340427(JDYX8) |

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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 $I^2T$Melting Integral($A^2.S$) | 安规认证 Agency Approvals | |
|---|---|---|---|---|---|---|---|
| | | | | | | ®  | c ® |
| SEF0050 | 50mA | 250VAC/DC | 50A@300VAC<br>50A@250VAC<br>200A@125VAC | 6.9 | 0.00025 | ● | ● |
| SEF0063 | 63mA | | | 5.0 | 0.00035 | ● | ● |
| SEF0080 | 80mA | | | 4.5 | 0.00040 | ● | ● |
| SFE0100 | 100mA | | | 4.2 | 0.00043 | ● | ● |
| SEF0125 | 125mA | | | 3.9 | 0.00045 | ● | ● |
| SEF0160 | 160mA | | | 2.308 | 0.056 | ● | ● |
| SEF0200 | 200mA | | | 1.655 | 0.060 | ● | ● |
| SEF0250 | 250mA | | | 1.456 | 0.063 | ● | ● |
| SEF0300 | 300mA | | | 0.855 | 0.190 | ● | ● |
| SEF0315 | 315mA | | | 0.656 | 0.200 | ● | ● |
| SEF0375 | 375mA | | | 0.605 | 0.328 | ● | ● |
| SEF0400 | 400mA | | | 0.580 | 0.335 | ● | ● |
| SEF0500 | 500mA | | | 0.302 | 0.471 | ● | ● |
| SEF0600 | 600mA | | | 0.268 | 0.771 | ● | ● |
| SEF0630 | 630mA | | | 0.259 | 0.982 | ● | ● |
| SEF0700 | 700mA | | | 0.233 | 2.102 | ● | ● |
| SEF0750 | 750mA | | | 0.227 | 2.230 | ● | ● |
| SEF0800 | 800mA | | | 0.205 | 2.375 | ● | ● |
| SEF1100 | 1A | | | 0.129 | 3.685 | ● | ● |
| SEF1125 | 1.25A | | | 0.095 | 3.755 | ● | ● |
| SEF1150 | 1.5A | | | 0.089 | 6.751 | ● | ● |
| SEF1160 | 1.6A | | | 0.078 | 6.800 | ● | ● |
| SEF1200 | 2A | | | 0.039 | 12.140 | ● | ● |
| SEF1250 | 2.5A | | | 0.036 | 16.005 | ● | ● |
| SEF1300 | 3A | | | 0.028 | 21.550 | ● | ● |
| SEF1315 | 3.15A | | | 0.027 | 25.740 | ● | ● |
| SEF1350 | 3.5A | | | 0.026 | 30.041 | ● | ● |
| SEF1400 | 4A | | | 0.020 | 43.201 | ● | ● |
| SEF1500 | 5A | | | 0.015 | 55.240 | ● | ● |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SEF1600 | 6A | | | 0.013 | 75.205 | ● | ● |
| SEF1630 | 6.3A | | | 0.011 | 93.540 | ● | ● |
| SEF1700 | 7A | | | 0.010 | 97.100 | ● | ● |

- *: These catalog no. cold resistance and I2t 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℃;
- Typical Pre-arching I2t 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:

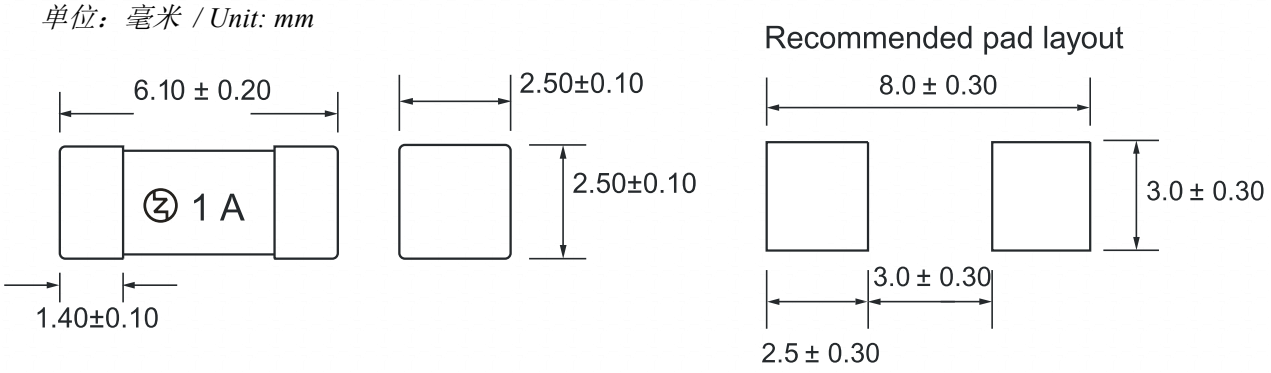
| | |
|---|---|
| | 1A |
| ① | ② |

| | |
|---|---|
| ① | 制造厂商标识/REOMAX Trade Mark: |
| 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*




## 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 Gold 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 |

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## 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 | REOMAX 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±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：50A@250Vac，200A@125Vac.

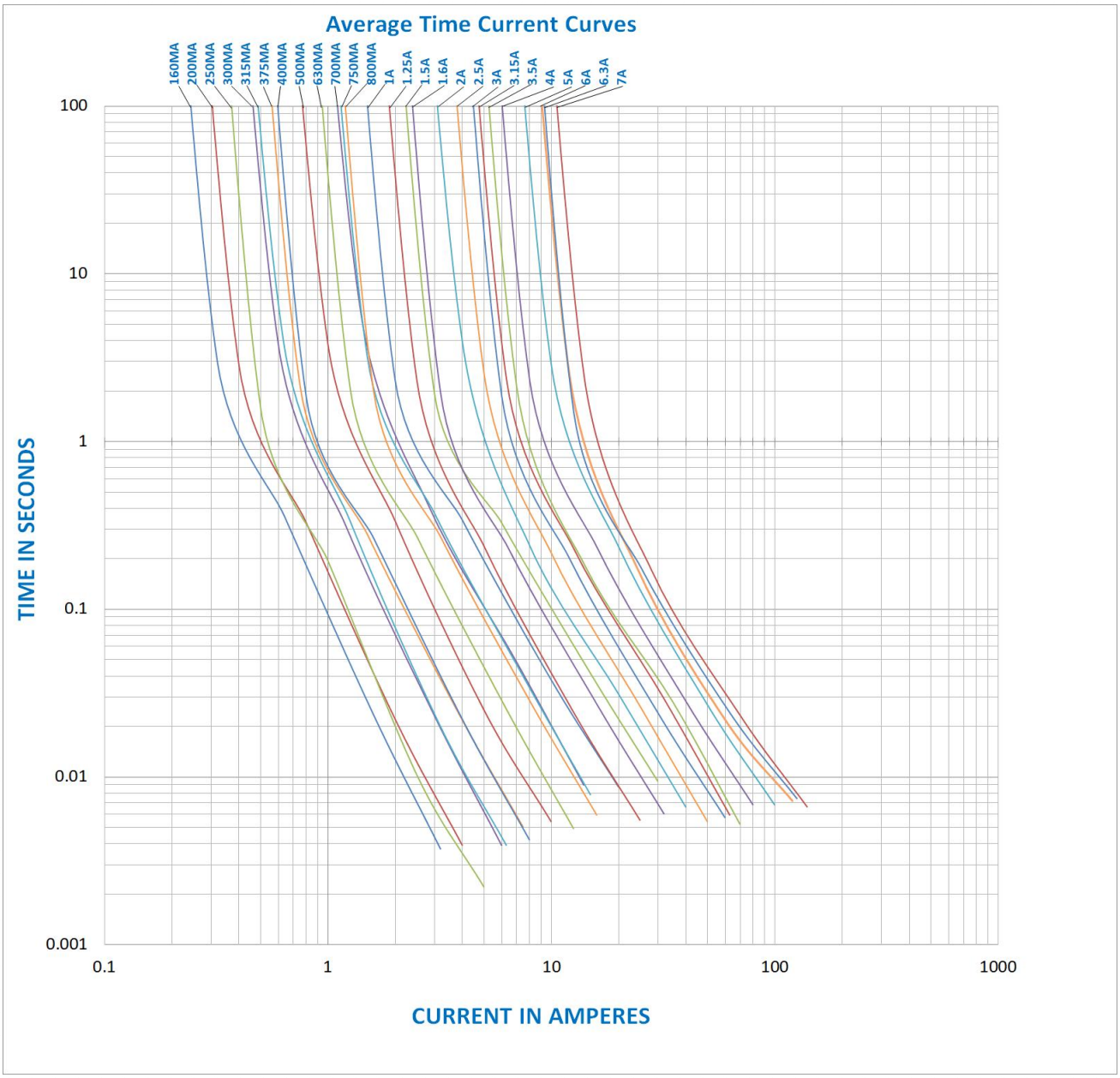
Breaking Capacity: 50A@250Vac，200A@125Vac.

7.3 熔断时限 / Operating Characteristics

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| 额定电流的%<br>% of Ampere Rating(In) | 熔断时间<br>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



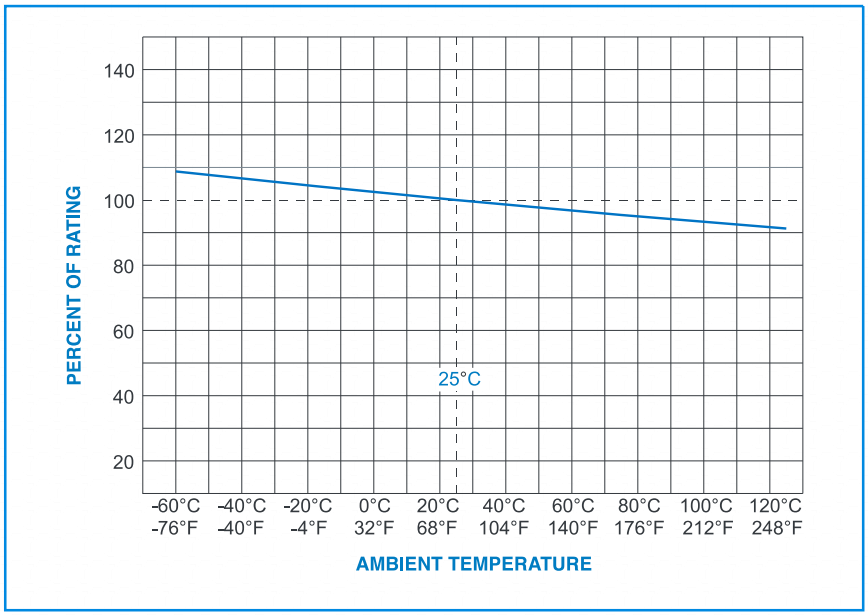

## 8. 环境特性 / Environmental Characteristic

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若操作环境温度超出 25±5℃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 20~30℃, 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

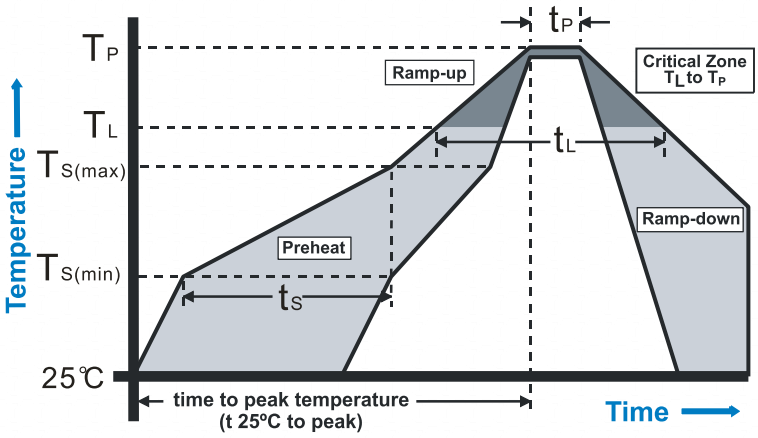
A. 波峰/回流焊参数 / Wave /Reflow Soldering Parameters:

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 ($T_L$) | 220°C |
| | Time Max ($t_L$) | 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 |




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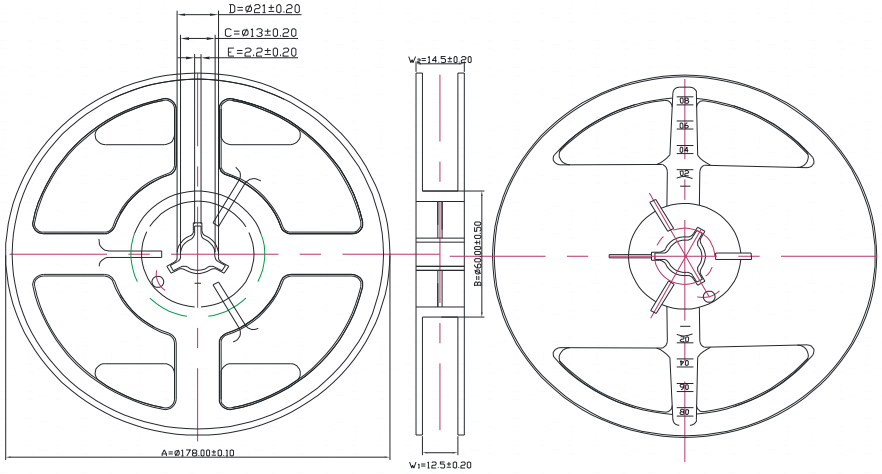
B．手工焊参数 / Hand-Solder Parameters:

烙铁温度 / Solder Iron Temperature: 300±5℃

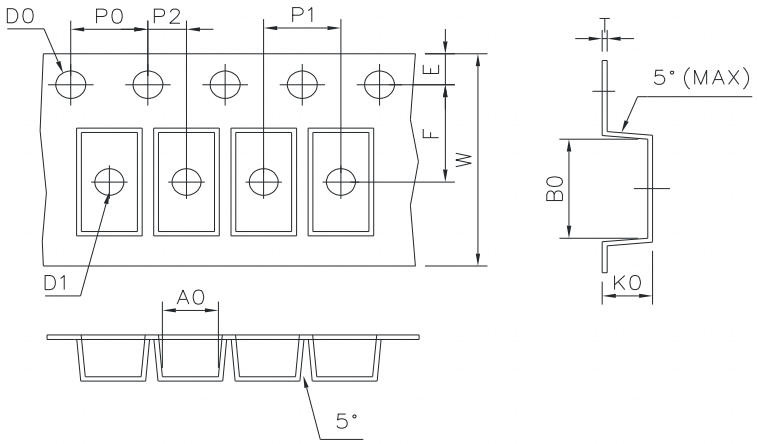
焊接时间 / Heating Time: 1~2 s Max

## 10. 包装 / Packaging

1000 个每卷/ 1,000 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 | $A_0$ | $B_0$ | $D_0$ | $D_1$ | 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 | $K_0$ | $P_0$ | $P_1$ | $P_2$ | 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

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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

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