导电高分子固态电容器

Conductive Polymer Aluminum Solid Capacitors

编号No.： SY261010

SG 系列 Series

# 承 认 书

# SPECIFICATION FOR APPROVAL

客户名称： 立创 日期： 2026/10/8

Customer Date

| 产品规格 Product | 客户物料编码 Customer Part No. | 对应升阳料号 Shengyang Part No. | 加工方式 Lead processing |
|---|---|---|---|
| 200V15uF 10X13 | | SG156M200G1300 | 标准品 |
| | | | |
| | | | |
| | | | |
| | | | |

| 扬州升阳电子有限公司 Yangzhou Shengyang Electronics Co., Ltd | | 客户方 Customer | |
|---|---|---|---|
| 审核 APPROVED | 制订 MAKER | 批准 APPROVAL | 承认 CONFIRMED |
| 黎 2026/10/8 华章 | 邓 2026/10/8 雅娟 | | |


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**范围** Scope

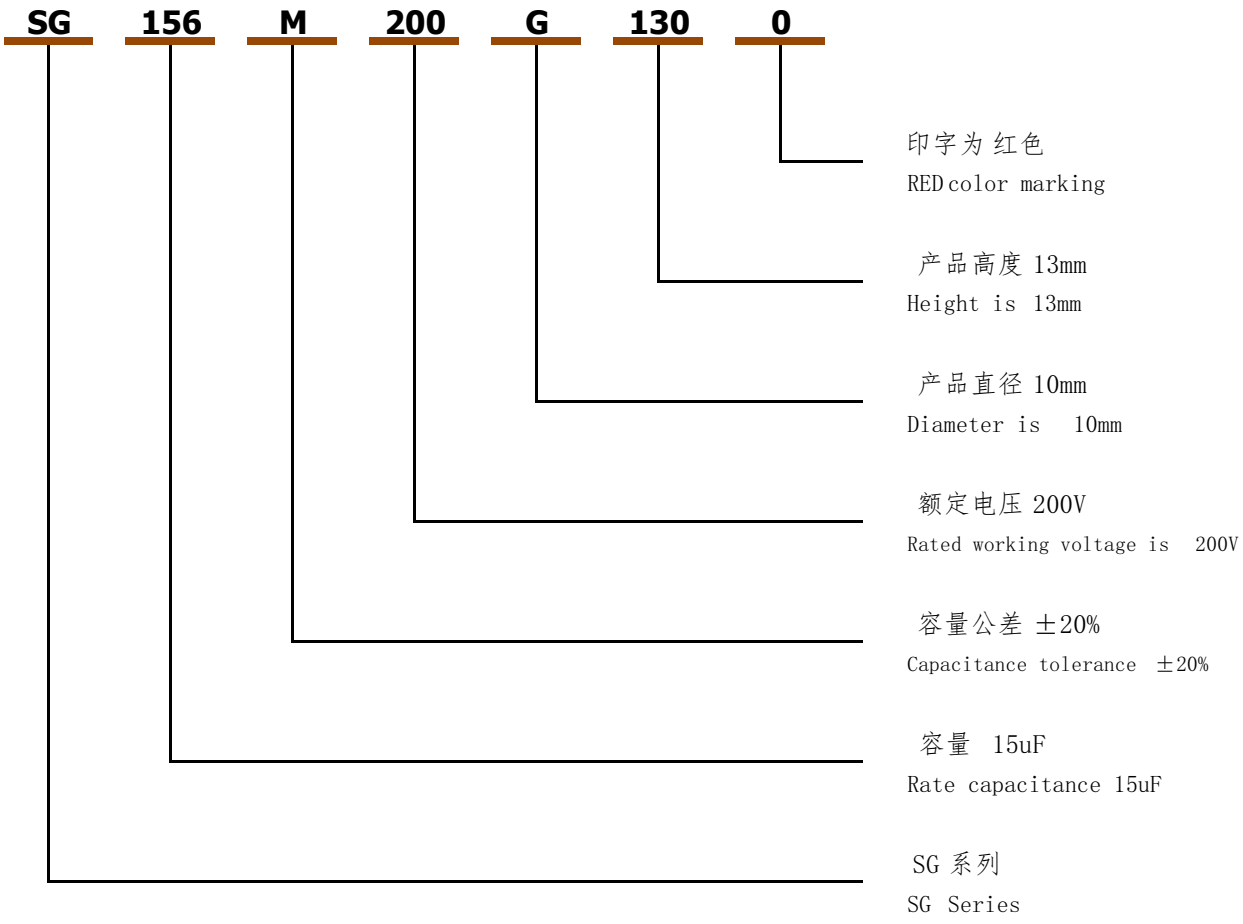
**本标准用于定义导电高分子固态电容器当前系列的相关特性和尺寸。**

This standard defines the relative characteristics and dimensions of conductive polymer solid capacitors

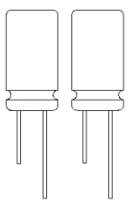
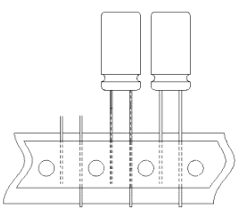
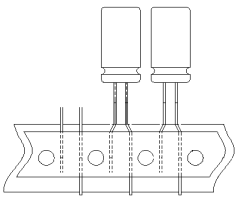
**本系列温度使用范围： -55~+105℃**

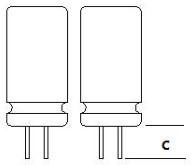
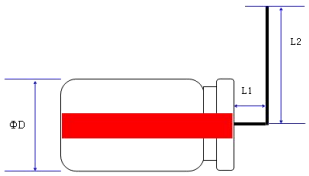
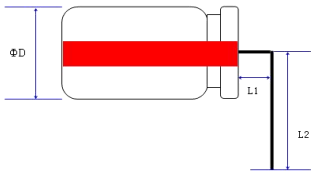
Working temperature scope: -55~+105℃

1> **升阳料号** Shengyang Product Part No.



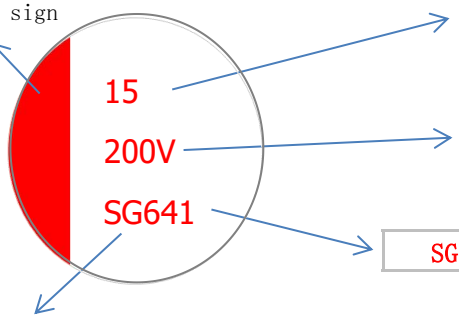

2> **加工方式** Lead processing

| **标准品** Bulk V | **编带-直贴** Taping-straight | **编带-成型** Taping-lead forming |
|---|---|---|
|  |  |  |

| 剪脚-直切<br>Cutting-straight | 剪脚-上折弯<br>Cutting-bending up | 剪脚-下折弯<br>Cutting-bending down |
|---|---|---|
|  |  |  |
| C: ± mm | L1: ±<br>L2: ± | L1: ± mm<br>L2: ± mm |

## 3> 印字 Marking

负极标示
Negative sign




15 ： 容量为15
Capacitance is 15

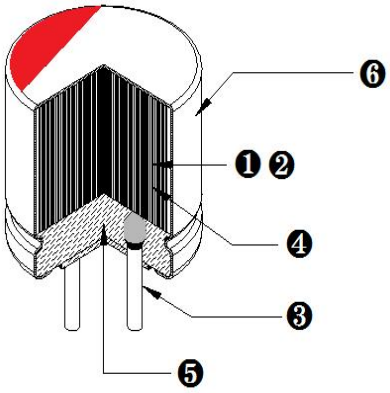
200V ： 额定电压为 200V
Rated working voltage is 200V

SG641 ： 系列为 SG
SG Series

红色 印字
RED color marking

生产时间为 2026 年第 41 周
Production time is 41 th week, 2026

## 4> 产品结构图
Product Structure Diagram




❶ 阳极箔：高纯铝化成箔
Anode foil: high pure aluminum formation foil

❷ 阴极箔：高纯铝碳箔
Cathode foil: high pure aluminum carbon foil

❸ 导针：高纯铝，引线为镀锡铜包钢线
leader pin: high pure aluminum,lead is tin copper clad steel wire

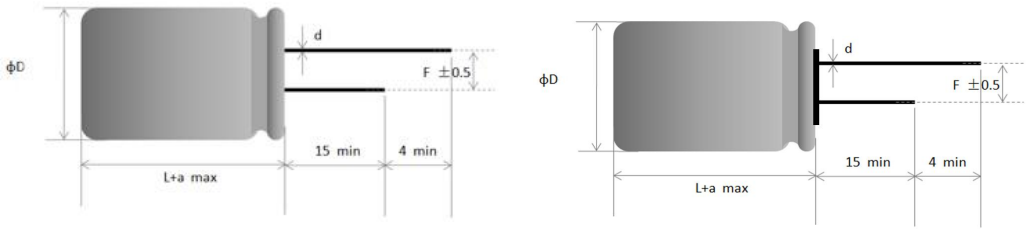
❹ 电解纸：马尼拉麻
Electrolytic paper: Manila hemp

❺ 胶盖：橡胶
Sealing: rubber

❻ 铝壳：高纯铝，涂层铝壳
Aluminum can: high purity aluminum, coated aluminum can

5> 尺寸 size

V 平面　　凸面




单位(unit):mm

| ΦDXL | ΦD±0.5 | a | F±0.5 | Φd±0.05 |
|---|---|---|---|---|
| 10X13 | 10 | ±1 | 5 | 0.6 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

6> 特性 Characteristics

1.标准测试条件

Standard test conditions

**除非另有规定，所有测试环境应当在以下条件下进行：**

Unless otherwise specified,all tests shall be performed at following conditions:

**环境温度： 15-35 ℃**

Ambient temperature: 15-35 ℃

**相对湿度： 45-75% RH**

Relative humidity:45-75%RH

**气压： 86-106 Kpa**

Air pressure86-106 Kpa

**测试疑虑时，在以下条件下确认测量结果：**

Any testing doubt, confirm the measurement results under the following conditions:

**环境温度： 20±2 ℃**

Ambient temperature: 20±2 ℃

**相对湿度： 60-70% RH**

Relative humidity:60-70%RH

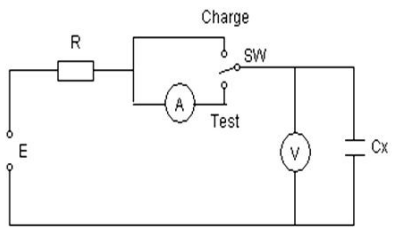
**气压： 86-106 Kpa**

Air pressure86-106 Kpa

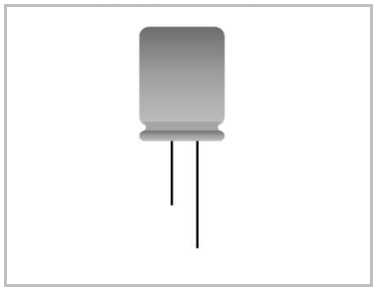
2.特性参数表 Characteristic parameter list

| NO. | 料号 Part No. | 容量 Capacitance | 电压 working voltage | 损失角 Dissipation Factor | ESR | RC | LC | ΦDXL |
|---|---|---|---|---|---|---|---|---|
| 1 | SG156M200G1300 | 15 | 200 | 15 | 150 | 800 | 600 | 10X13 |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |

3.特性参数说明 Description

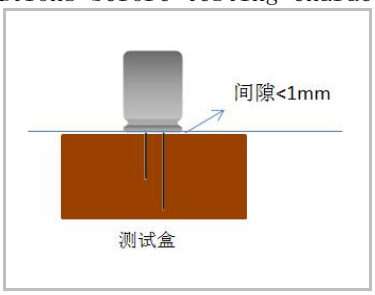
<table>
<tr><th>NO.</th><th>特性<br>Characteristics</th><th>单位<br>unit</th><th colspan="6">说明 Description</th></tr>
<tr><td>1</td><td>容量<br>capacitance</td><td>uF</td><td colspan="6">产品标称容量，测试频率：120HZ，在规定容量公差内<br>Product nominal capacity, test frequency: 120HZ, within the specified capacity tolerance</td></tr>
<tr><td>2</td><td>电压<br>working voltage</td><td>V</td><td colspan="6">产品额定电压<br>Rated working voltage</td></tr>
<tr><td>3</td><td>损失角<br>Dissipation Factor</td><td>%</td><td colspan="6">也称损耗，测试频率：120HZ<br>Also calls dissipation, test frequency: 120HZ</td></tr>
<tr><td>4</td><td>ESR</td><td>mΩ</td><td colspan="6">等效串联电阻，测试频率100KHZ<br>Equivalent series resistance, test frequency 100KHZ</td></tr>
<tr><td rowspan="4">5</td><td rowspan="4">RC</td><td rowspan="4">mA,rms</td><td colspan="6">最大许可纹波电流为100KHZ下最大A.C电流<br>The maximum allowable ripple current is 100KHZ, the largest A.C current</td></tr>
<tr><td colspan="6">DC电压和峰值AC电压总和不可超出额定电压，不可反向充电<br>The DC voltage plus the peak AC voltage must not exceed the rated voltage,and non-reverse charging</td></tr>
<tr><td>频率HZ<br>Frequency</td><td>120≤f<1k</td><td>1K≤f<10K</td><td>10K≤f<100K</td><td>100K≤f<500K</td><td></td></tr>
<tr><td>系数<br>coefficient</td><td>0.05</td><td>0.3</td><td>0.7</td><td>1</td><td></td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">LC</td><td rowspan="2">uA</td><td colspan="6">泄漏电流，产品施加额定电压，充电2分钟后测试漏电值<br>Leakage current, after charging for 2 minutes, test the leakage current value of product</td></tr>
<tr><td colspan="6">
</td></tr>
<tr><td>7</td><td>ΦDXL</td><td>mm</td><td colspan="6">产品外径、高度 Diameter、Height</td></tr>
</table>

**4.特性测试注意事项** Precautions before testing characteristics



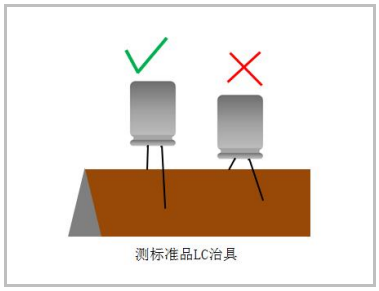
**测试前保持引脚垂直平行**
**不能扭动、拉扯电容引脚**

Keep pins vertical and parallel
before testing,and can not wiggle, pull the pins




**测试容量/损失角/ESR值时，**
**测试点需在引线根部**

When testing capacitance/dissipation factor/ESR value,test points need to be at the root of the lead




**测试LC时，需保持引脚平行**
**不能让电容引脚呈八字形分开**

When testing LC, keep pins parallel,
and can not separate two pins as “八” shape

**7> 高温负荷寿命试验** High temperature load life test

**电容器在额定最高温度下印加额定电压，持续储存至规定寿命时间后，符合以下要求：**

Charged rated voltage and continously stored at upper category tempevature for specified life time,characteristics of capacitor shoule meet following requirements

| 项目 item | 要求 requirements |
|---|---|
| 寿命时间 life time | 2000 ±48小时 hours |
| 容量变化<br>change of capacitance | 在容量初始值±20%内<br>Within ±20% of the initial value |
| 损失角<br>dissipation factor | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |
| ESR | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |
| LC | 不超过规定值<br>Not to exceed the value specified |

**8> 浪涌电压试验** Surge voltage test

**在任何情况下，浪涌直流电压是电容器所应承受的最大电压，这包括瞬变和峰值纹波最高的线路电压。**

The surge DC rating is the maximum voltage to which the capacitor should be subjected under any conditions. This includes transients and peak ripple at the highest line voltage.

| 额定电压（V）<br>rated working voltage | 浪涌电压（V）<br>surge voltage | |
|---|---|---|
| 2.5 | 2.9 | |
| 6.3 | 7.2 | |
| 10 | 11.5 | |
| 16 | 18.4 | |
| 25 | 28.8 | |
| 35 | 40.3 | |
| 50 | 57.5 | |
| 63 | 72.5 | |
| 100 | 115.0 | |

浪涌电压=1.15*额定电压

在常温条件下，电容串联1000Ω电阻后，应用浪涌直流电压进行测试。
充电30±5秒，放电330±5秒，充电放电过程重复1000次，符合以下要求：
Connected in series with 1000 ohm resistors, capacitor shall withstand the surge test voltage applied with 30±5 seconds on, 330±5 seconds off, for 1000 successive test cycles at normal temperature

| 项目 item | 要求 requirements |
|---|---|
| 容量变化<br>change of capacitance | 在容量初始值±20%内<br>Within ±20% of the initial value |
| 损失角<br>dissipation factor | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |
| ESR | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |
| LC | 不超过规定值<br>Not to exceed the value specified |

9> 稳态湿热试验 Damp heat(steady state) test
于环境温度60±2℃，湿度90-95% RH条件下，储存1000±48小时，符合以下要求：
The following requirements shall be satisfied after the capacitors are stored at 60±2℃,90 to 95%RH for 1000±48 hours

| 项目 item | 要求 requirements |
|---|---|
| 容量变化<br>change of capacitance | 在容量初始值±20%内<br>Within ±20% of the initial value |
| 损失角<br>dissipation factor | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |
| ESR | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |
| LC | 不超过规定值<br>Not to exceed the value specified |

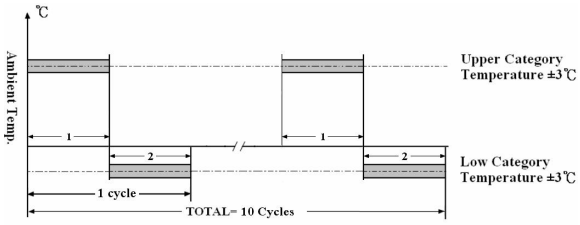
10> 温度特性试验 characteristics at High and low Temperature
于以下环境步骤按规定时间储存，符合以下要求：
The following requirements shall be satisfied after the capacitors are stored at following conditions and specified time

| 阶段 | 温度（C°） | 测试项目(120HZ) |
|---|---|---|
| 1 | 20±2 | CAP/DF/ESR |
| 2 | 最低使用温度±3 | ESR |
| 3 | 20±2 | CAP/DF |
| 4 | 最高使用温度±3 | |
| 5 | 20±2 | |

| 要求<br>requirement |
|---|
| 容量变化在初始值±20%内<br>Within ±20% of the initial value |
| 损失角不超过规定值<br>Dissipation factor: not to exceed the value specified |
| ESR不超过规定值<br>ESR: not to exceed the value specified |

11> 快速变温试验 Rapid change of temperature

| 阶段 | 温度（C°） | 时间（min） | 循环回数 |
|---|---|---|---|
| 1 | 最低使用温度±3 | 30±3 | 5 |
| 2 | 常温 | <3 | |
| 3 | 最高使用温度±3 | 30±3 | |
| 4 | 常温 | <3 | |




| 要求 requirement |
|---|
| 容量变化在初始值±20%内<br>Within ±20% of the initial value |
| 损失角不超过规定值<br>Dissipation factor: not to exceed the value specified |
| LC不超过规定值<br>LC: not to exceed the value specified |

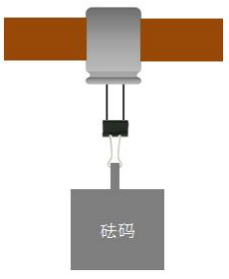
12> 端子强度试验 Lead strength test

1.引张强度 Tensile Strength

**电容器引脚向下，固定电容器本体，在引脚上静态负重至规定时间，符合以下要求：**

Fixing capacitor body and pins down,static load on the pins to the specified time, meets the following requirements

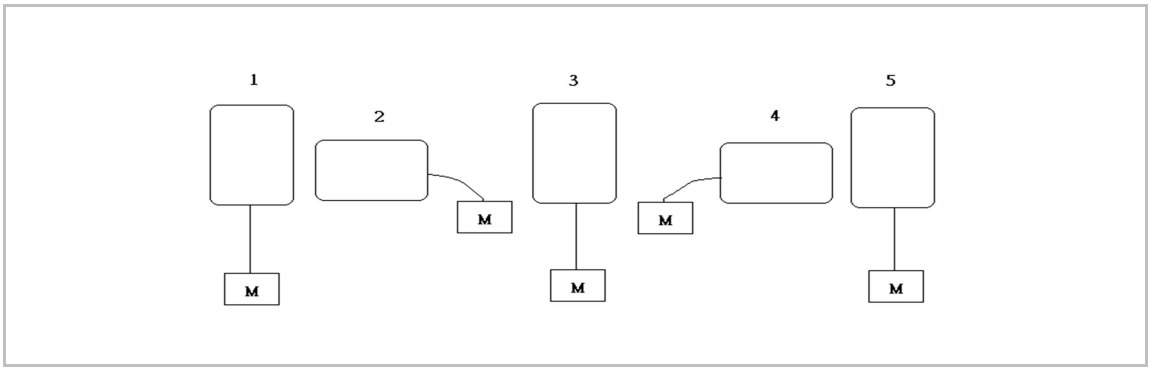
| 电容器引线直径mm<br>diameter of pin | 负重（N）<br>weight | 负重时间（秒）<br>load time | 要求<br>requirement |
|---|---|---|---|
| d≤0.5 | 5 | 10±1 | 端子无断裂、松动<br>pins have no broken and loose |
| 0.5<d≤0.8 | 10 | 10±1 | 端子无断裂、松动<br>pins have no broken and loose |
| 0.8<d≤1.2 | 25 | 10±1 | 端子无断裂、松动<br>pins have no broken and loose |




2.折曲强度 Bending strength

**电容器引脚向下，固定电容器本体，在引脚上负重，按图示折弯，试验两回。**

Fixing capacitor body and pins down,load on the pins and bending for 2 times according to following diagram, then meets requirements as below:




| 电容器引线直径mm<br>diameter of pin | 负重（N）<br>weight | 回数<br>cycle | 要求<br>requirement |
|---|---|---|---|
| d≤0.5 | 2.5 | 2 | 端子无断裂、松动<br>pins have no broken and loose |
| 0.5<d≤0.8 | 5 | 2 | 端子无断裂、松动<br>pins have no broken and loose |
| 0.8<d≤1.2 | 10 | 2 | 端子无断裂、松动<br>pins have no broken and loose |

13> 振动试验 Vibration test

振动频率： 10-55HZ （间隔1分钟 / 10HZ-->55HZ-->10HZ）

Vibration frequency: 10-55HZ （Spaced one minute apart/ 10HZ-->55HZ-->10HZ）

振幅： 0.75mm （总偏移1.5mm）

Amplitude: 0.75mm （total migration 1.5mm）

方向： X、Y、Z （3向）

Direction: X、Y、Z axis(three directions)

持续时间： 2小时/向

Duration: 2 hours/direction

安装图示如下：

Installation diagram as below:




30分钟内，容量值相比初始值不应有明显变化

Within 30 minutes,capacitance has no significant change comparation with initial value

| 项目 item | 要求 requirement |
|---|---|
| 容量变化<br>change of capacitance | 在容量初始值±5%内<br>Within ±5% of the initial value |
| 外观<br>appearance | 端子无断裂、松动<br>pins have no broken and loose |

14> 可焊性试验 Solderability test

**焊料： 约25%松香/乙醇溶液，焊料Sn-Ag-Cu**

Solder: about 25% rosin/ethanol solution, solder Sn - Ag - Cu

**温度： 243±5℃**

Temperature: 243±5℃

**时间： 2±0.5秒**

Time: 2±0.5 seconds

**试验后端子浸渍位置至少95%面积包盖了新锡。**

After testing, more than 95% of the terminal surface shall be covered with new solder

15> 焊锡耐热试验 Solder Heat Resistance Test

**1.焊锡槽法** Tin groove method:

**温度： 260±5℃ 时间： 10±1秒**

Temperature: 260±5℃ Time: 10±1 seconds

**2.烙铁焊接方法** Soldering iron welding method:

**温度： 400±10℃ 时间： 3+1/-0秒**

Temperature: 400±10℃ Time: 3+1/-0 seconds

**以上两种方法，在电容器热量趋于稳定后，符合以下要求：**

For above two methods, after the capacitor heat is stabilized, the following requirements should be met

| 项目 item | 要求 requirement |
|---|---|
| 容量变化<br>change of capacitance | 在容量初始值±5%内<br>Within ±5% of the initial value |
| 损失角<br>dissipation factor | 不超过规定值<br>Not to exceed the value specified |
| ESR | 不超过规定值<br>Not to exceed the value specified |
| LC | 不超过规定值<br>Not to exceed the value specified |

16> 回流焊试验 Flow soldering test

| 项目 item | 1 | 2 | 3 |
|---|---|---|---|
| 温度<br>temperature | 160-190℃ | 220-220℃ | 260℃ |
| 时间 time | 110±10sec | 55±5sec | 6±2sec |

| 项目 item | 要求 requirements |
|---|---|
| 容量变化<br>change of capacitance | 在容量初始值±20%内<br>Within ±20% of the initial value |
| 损失角<br>dissipation factor | 不超过规定值<br>Not to exceed the value specified |
| ESR | 不超过规定值<br>Not to exceed the value specified |
| LC | 不超过规定值的1.5倍<br>Not to exceed 150% of the value specified |

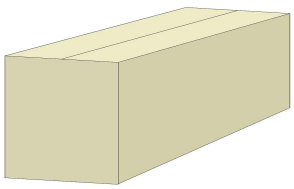
17> 包装数量 Packing quantity

1.标准品包装 Bulk packing

| 尺寸 size | 每袋数量pcs quantity of per bag | 每内箱数量pcs quantity of inner box | 每外箱数量pcs quantity of outer box |
|---|---|---|---|
| Φ5x7-8 | 1000 | 20000 | 40000 |
| Φ5x9-5.511 | 1000 | 15000 | 30000 |
| Φ6.3x5-7 | 1000 | 15000 | 30000 |
| Φ6.3x9 | 1000 | 13000 | 26000 |
| Φ6.3x12 | 1000 | 10000 | 20000 |
| Φ6.3x14 | 500 | 9000 | 18000 |
| Φ8x8 | 1000 | 10000 | 20000 |
| Φ8x11.5 | 500 | 7500 | 15000 |
| Φ10x12.5 | 500 | 5000 | 10000 |
| Φ8x15 | 400 | 6000 | 12000 |
| Φ10x15 | 400 | 4000 | 8000 |

标准品内箱：

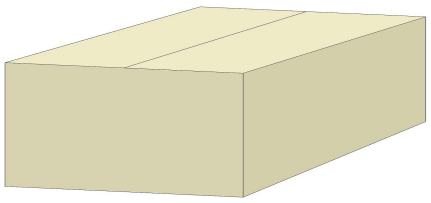
inner box for bulk packing



29*17*26.5cm

标准品外箱：

outer box for bulk packing



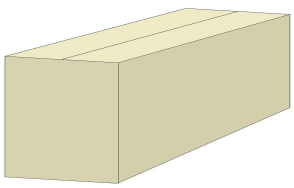
36*30.5*28cm

2.剪脚品包装 packing of cutting products

| 尺寸 size | 每袋数量pcs quantity of per bag | 每内箱数量pcs quantity of inner box | 每外箱数量pcs quantity of outer box |
|---|---|---|---|
| Φ5x7-8 | 1000 | 25000 | 50000 |
| Φ5x9-5.511 | 1000 | 24000 | 48000 |
| Φ6.3x5-7 | 1000 | 24000 | 48000 |
| Φ6.3x9 | 1000 | 15000 | 30000 |
| Φ6.3x12 | 1000 | 15000 | 30000 |
| Φ6.3x14 | 500 | 10000 | 20000 |
| Φ8x8 | 1000 | 15000 | 30000 |
| Φ8x11.5 | 500 | 7500 | 15000 |
| Φ10x12.5 | 500 | 6000 | 12000 |
| Φ8x15 | 500 | 7500 | 15000 |
| Φ10x15 | 400 | 4000 | 8000 |

剪脚品内箱：

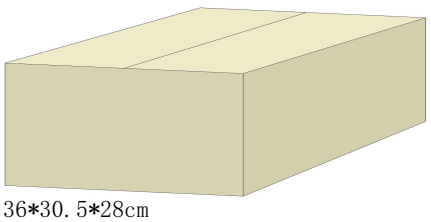
inner box for cutting products



29*17*26.5cm

剪脚品外箱：

outer box for cutting products



36*30.5*28cm

3.编带品包装　taping packing

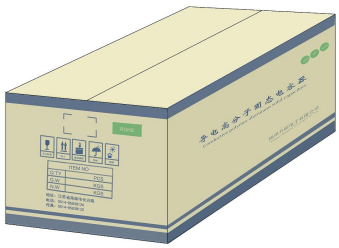
| 尺寸<br>size | 每内盒数量pcs<br>quantity of inner box | 每外箱数量pcs<br>quantity of outer box |
|---|---|---|
| Φ5.5x7-11 | 2000 | 20000 |
| Φ6.3x5 | 1500 | 15000 |
| Φ6.3x7-12 | 1500 | 15000 |
| Φ8x8-15 | 1000 | 10000 |
| Φ10x12.5-15 | 600 | 6000 |

编带品内箱：
inner box for taping packing



33*23*5cm

编带品外箱：
outer box for taping packing

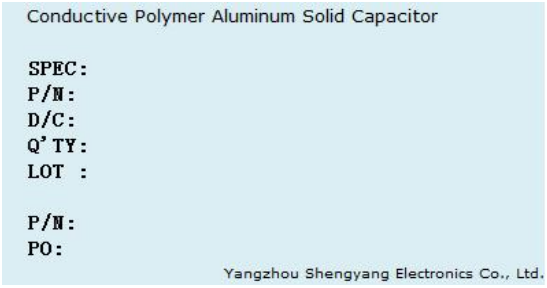


48*34.5*30cm

4.标签内容　Label content

客户无要求的情况下，内标、外标尺寸都一样，格式与内容如下：

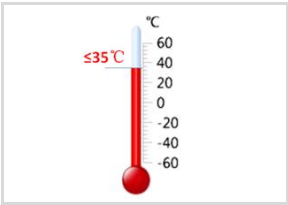
In the case of customer without special requirements, the inner and outer labels are the same. The format and content are as follows




客户有需求时，标签上可以备注客户物料编码、PO订单号

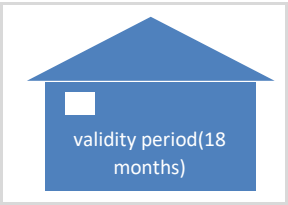
As customer requirements, the label may note the customer's P/N, PO order number

## 18〉 使用前注意事项 Precautions before using



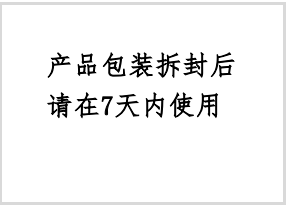

电容储存环境正常

Storage environment is normal



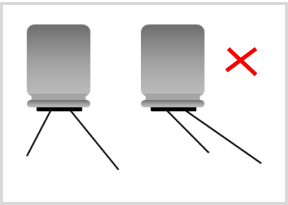

电容周期在有效期内(18个月)

Date-code is within the validity period(18 months)




电容拆袋后有密封保存

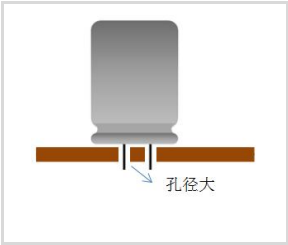
Please use the product after package is opened in 7 days



电容引线无扭曲弯折

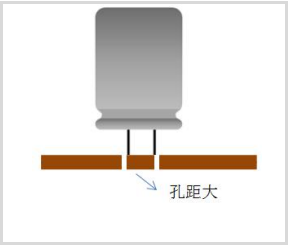
Pins no distortion and bending

## 19〉 安装前注意事项 Precautions before installation



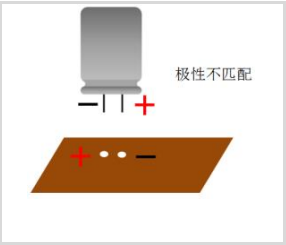

电容引线直径与PC板孔径匹配

Diameter of capacitor pin is matched with PC board aperture



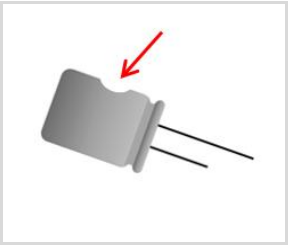

电容引线脚距与PC板孔距匹配

Pitch of capacitor pins is matched to the PC plate hole spacing




电容插件时极性正确

Polarities of capacitor and PC board are corresponding



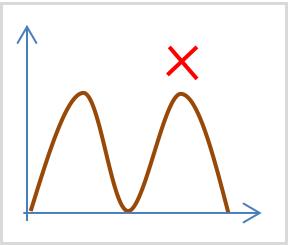
本体变形电容不使用

Capacitors which body deformed can not be used



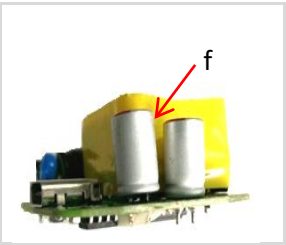
电容插件倾斜不强行用力下压

When capacitors plugged slantly,they can not be forced down



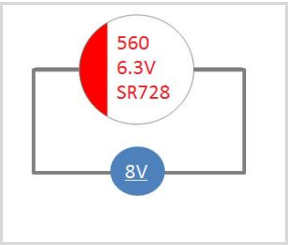
电容只经过一次高温回焊

Capacitor can only pass through one time reflow soldering



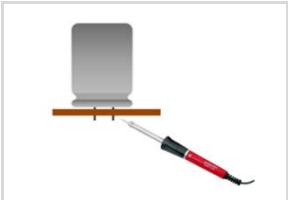

电容上锡后本体不受力

Body of capacitor can not be forced after soldering



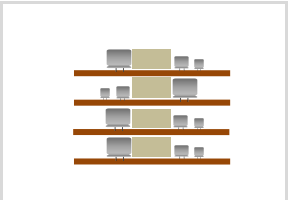

电容施加电压不超额定电压

Charging voltage can not exceed rated working voltage of capacitor



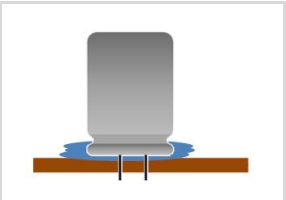
电容手工焊锡时，烙铁不能长时间接触引线

When manual soldering, the soldering iron can not contact pins of capacitor for long time



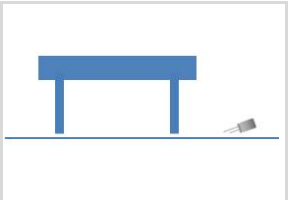
电容插件后的线路板不叠加堆放

The PC boards which have capacitors should not be stacked



不要让电容正负极接触导电性溶液

Do not allow pins of capacitor to be in contact with the electrical conductivity solution



掉落地面电容不使用

Capacitors dropping down can not be used

其它相关注意事项，详见本公司最新产品目录书。
For more information, please refer to our latest catalogue

20> 环保 Environmental protection
本公司每年一次，将电容主要材料及电容成品送第三方权威检测机构检测。
Once a year, we will send the main materials and the capacitor products to the third party authorities for testing
检测时，根据当年欧盟最新要求检测ROHS、SVHC管理物质。
Test ROHS and SVHC management substances according to the latest requirements of the European Union
检测报告，本公司会在检测完成后上传到公司网站（www.yzsydz.cn）。
The test report will be uploaded to the company website (www.yzsydz.cn) after the test is completed
为倡导环保，节能减排，本公司一律提供pdf电子档承认书给客户。
To advocate environmental protection, energy conservation and emissions reduction, our company will provide the PDF specification by email admitted to customer
有特殊要求，请再联络本公司业务人员，谢谢！
For special requirements, please contact our business personnel. Thanks!