



产 品 规 格 书

PRODUCT SPECIFICATION

|                                   |                        |
|-----------------------------------|------------------------|
| 客 户 名 称:<br>CUSTOMER:             |                        |
| 产 品 名 称:<br>PRODUCT NAME:         | 贴片线绕电阻器(双帽系列)          |
| 产 品 描 述:<br>Product description:  | RXF-1WS-33R-J-0309(双帽) |
| 型 号/ 规 格:<br>Model/specification: | RXF-1WS-33R-J-0309(双帽) |
| 料号<br>Part Number :               |                        |
| 日 期:<br>Date:                     | 2025 年 03 月 03 日       |

| 供应商-泓达<br>Supplier-Hongda |     | 确认合格章<br>Confirm qualified Signet | 客 户<br>Customer | 零件承认章<br>Approval Signet |
|---------------------------|-----|-----------------------------------|-----------------|--------------------------|
| 编 制<br>PREPARED           | 田辉  |                                   |                 |                          |
| 审 核<br>CHECKED            | 刘学军 |                                   |                 |                          |
| 批 准<br>APPROVED           | 孙嘉利 |                                   |                 |                          |



## 一、产品特点 Product Feature

该产品抗浪涌性能好，熔断一致性好，体积小，便于安装，安全可靠，广泛用于电光源、开关电源、充电器及家用电器等电子设备中，获得安规认证。

It is a fusing resistor with good performance of anti-surge impact, excellent consistency in fusing, small size for easy installation, high safety and reliability, and international certifications. The fusing resistor is widely used in electric light source, switching power supplies, chargers, home appliances, and other electronic equipment etc.

## 获得认证 Get safety certification

VDE: 认证编号(Certificate No.): 40036858

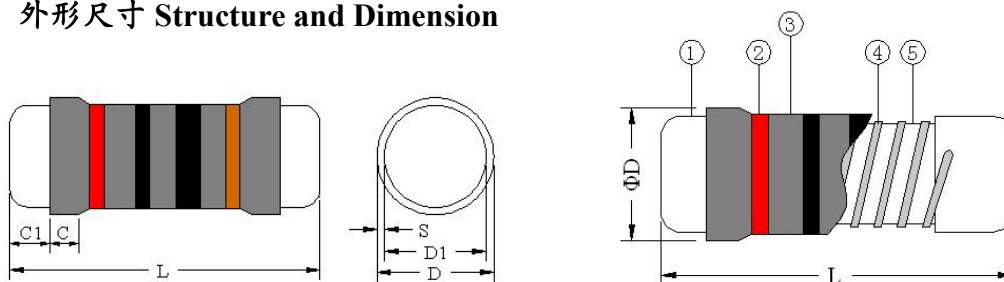
UL/CUL 认证编号(Certificate No.): E359590

CQC: 认证编号(Certificate No.): 0.5W-CQC13001095211

1W-CQC13001095213

2W-CQC13001095221

## 二、外形尺寸 Structure and Dimension



| 规格 Type  | 额定功率<br>Rated Power<br>W | 尺寸 Dimension (mm) |                |       |
|----------|--------------------------|-------------------|----------------|-------|
|          |                          | D                 | L              | C1min |
| RXF-0207 | 0.25W<br>0.5W-S<br>1W-X  | $2.5 \pm 0.3$     | $6.0 \pm 0.5$  | 1.20  |
| RXF-0309 | 0.5W<br>1W-S<br>2W-X     | $3.3 \pm 0.3$     | $9.0 \pm 0.5$  | 1.60  |
| RXF-0410 | 1W<br>2W-S<br>3W-X       | $4.0 \pm 0.3$     | $9.8 \pm 0.5$  | 1.80  |
| RXF-0411 | 2W<br>2W-S<br>3W-X       | $4.5 \pm 0.3$     | $11.5 \pm 0.5$ | 1.80  |

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| 序号 NO | 材料名称 Name of the material   |
|-------|-----------------------------|
| 1     | 镀锡铁帽 Tin-coated cap         |
| 2     | 色环 The color wheel          |
| 3     | 阻燃性涂料 Flame retardant paint |
| 4     | 合金丝 Resistance wire         |
| 5     | 陶瓷基体 The ceramic substrate  |

三、技术说明 Technical Parameter

表 2Figure 2

| 规格 Type | 额定功率<br>Rated Power<br>W (70℃) | 电阻值范围 Resistance<br>range ( Ω ) | 绝缘电压<br>(直流或交流峰)<br>Insulation Voltage<br>( DC /AC Peak<br>Value) V | 元件极限电压<br>Limiting<br>Voltage<br>V |
|---------|--------------------------------|---------------------------------|---------------------------------------------------------------------|------------------------------------|
|         |                                | ±5%、±10%                        |                                                                     |                                    |
| 0207    | 0.25W<br>0.5W-S<br>1W-X        | 0.22~200                        | 250                                                                 | 200                                |
| 0309    | 0.5W<br>1 W-S<br>2W-X          | 0.22~300                        | 250                                                                 | 250                                |
| 0410    | 1W<br>2 W-S<br>3W-X            | 0.22~300                        | 250                                                                 | 300                                |
| 0411    | 2W<br>2 W-S<br>3WX             | 0.22~300                        | 250                                                                 | 350                                |

四、电阻色环标志图 Resistance

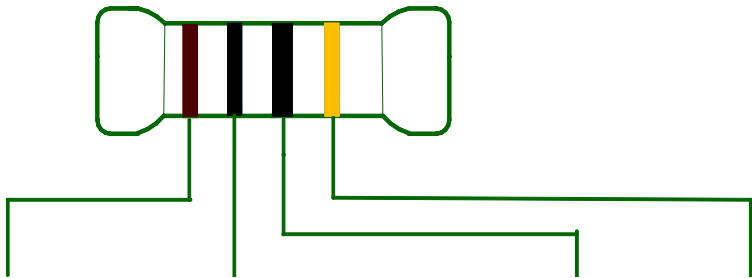
见色环图。

五、电阻器上应注明以下内容 On the resistor should marked as below:

- a) 标称阻值 Nominal resistance;
- b) 阻值允许偏差 Resistance tolerance.



色环标识图



| 颜色<br>Color | 第 1 数字<br>First digit | 第 2 数字<br>Second digit | 第 3 数字<br>Third digit |  | 乘数<br>Malutiplier | 误差率<br>Tolerance |
|-------------|-----------------------|------------------------|-----------------------|--|-------------------|------------------|
| 黑 Black     | 0                     | 0                      | 0                     |  | 10 <sup>0</sup>   | —                |
| 棕 Brown     | 1                     | 1                      | 1                     |  | 10 <sup>1</sup>   | ± 1              |
| 红 Red       | 2                     | 2                      | 2                     |  | 10 <sup>2</sup>   | ± 2              |
| 橙 Orange    | 3                     | 3                      | 3                     |  | 10 <sup>3</sup>   | —                |
| 黄 Yellow    | 4                     | 4                      | 4                     |  | 10 <sup>4</sup>   | —                |
| 绿 Green     | 5                     | 5                      | 5                     |  | 10 <sup>5</sup>   | ±0.5             |
| 蓝 Blue      | 6                     | 6                      | 6                     |  | 10 <sup>6</sup>   | ±0.25            |
| 紫 Violet    | 7                     | 7                      | 7                     |  | 10 <sup>7</sup>   | ±0.1             |
| 灰 Gray      | 8                     | 8                      | 8                     |  | 10 <sup>8</sup>   | —                |
| 白 White     | 9                     | 9                      | 9                     |  | 10 <sup>9</sup>   | —                |
| 金 Gold      | —                     | —                      | —                     |  | 10 <sup>-1</sup>  | ± 5              |
| 银 Silver    | —                     | —                      | —                     |  | 10 <sup>-2</sup>  | ± 10             |
| 无 Plain     | —                     | —                      | —                     |  | —                 | —                |

一般数据 General Parameter

- 1、 标称阻值允许偏差：±5%、±10%  
Standard resistance tolerance: ±5%、±10%
- 2、 气候类别：55/155/21  
Climatic category: 55/155/21
- 3、 低气压：8.5kpa  
Low pressure: 8.5kpa
- 4、 稳定度等级：5%  
Stability grade: 5%
- 5、 阻值变化极限值 Limit resistance values:  
5.1、 长期试验 Long-run test: ± (5%R+0.1')



5.2、短期试验 Short-run test:  $\pm (1\%R+0.05')$

6、温度系数:  $\leq 350 \pm 100$  ppm

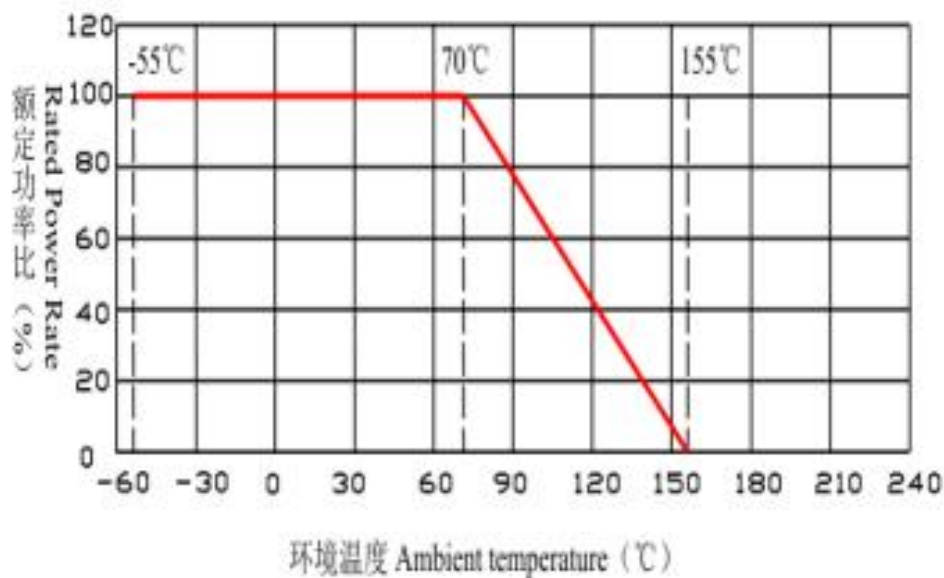
Temperature coefficient:  $\leq 350 \pm 100$  ppm

7、额定电流:  $I^2(A)=P(W)/R(\Omega)$

Rated current:  $I^2(A)=P(W)/R(\Omega)$

8、降功率曲线图 Power dissipation curve:

Percentage of rated power dissipation %



注：额定功率是在 70℃ 温度下连续工作的最大值，超过 70℃ 时按曲线降功耗。

Note: Rated power is the max. value at continuous operation under 70℃. When exceeding 70℃, rated power will be as the above power dissipation curve.

9、熔断特性 Fusing characteristic

定义：对电阻器的施加规定的过负荷时，阻值显著增大；使流过电阻器的电流下降到最初实验电流的 1/50 以下时称为熔断。电阻器从加上规定的过负荷时到发生熔断对所需的时间称为熔断时间。这种性能称为熔断特性。

要求：在规定的额定电流倍率过负荷条件下，熔断时间应符合下表规定；

注：额定功率是在 70℃ 温度下连续工作的最大值，超过 70℃ 时按曲线降功耗。

Definition: When we impose specified overload on fusing resistor, its resistance will increase significantly, thus leads to current dropping to 1/50 time of the resistor original tested current, which is called fusing. The time, from specified overload to fusing, is



fusing time. Those performances are called fusing characteristics.

Requirements: Under the condition that resistor is imposed specified multiply rated current, fusing time should comply with figure 3.

表 3Figure3

| 额定电流倍率 multiplying power of Rated Current<br>(倍 times)                                                                                                                                               |                                        | 熔断时间 Fusing time (S) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|
| 0.25W                                                                                                                                                                                                | $R < 1\Omega$ : 6 $R \geq 1\Omega$ : 7 | $\leq 60$            |
| 0.5~2W                                                                                                                                                                                               | $R < 1\Omega$ : 6 $R \geq 1\Omega$ : 7 | $\leq 60$            |
| 注:熔断时间可根据用户要求制做 Note: Fusing characteristic can be made according to customer's requirements.; 要求雷击产品不做熔断考核 <b>It is required that the lightning strike products do not undergo fuse assessment.</b> |                                        |                      |

#### 10. 抗冲击性能 Impact Resistance

按图闭合开关 K, 打开开关 K2,按 2S 通 2S 断的要求, 将 K1 反复通断 100 次, 试验电阻应不开路。

According to the map below, closed switch K, cut K2, repeat K1 on-off 100 times, resistor doesn't meltdown. (2 second on and 2 second off)

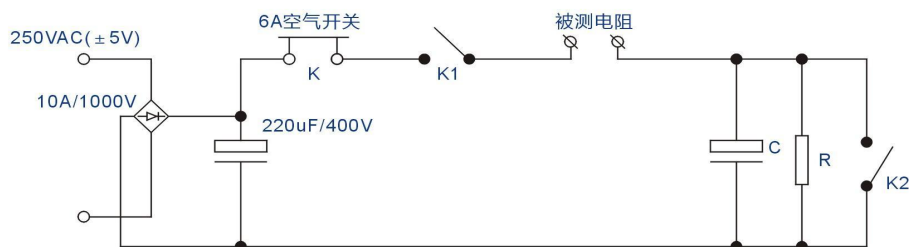


图 3

注 remarks:

- 1、电容 C 容量的选择依据客户要求选择, 无特殊要求取  $C=10\mu\text{F}$ 。
- 2、电阻 R 阻值选择根据使用电路, 折算成内阻而得, 电阻功率取 20W, 功率因数取 0.8, 10W 以下电阻器一般取 20W,  $5.1\text{K}\Omega (\pm 5\%)$ 。

1、The choice of capacitor C capacity based on customer demands, without demands  $C=10\mu\text{F}$ 。

2、Choice of resistance value R in accordance with the use of lines, derived from converted into resistance, resistance power 20W, power factor 0.8, the appliance below 10W take 20W, 5

#### 11、雷击浪涌冲击 (Surge) 特性

试验方法: 将试验电阻接入适用的电器中, 按照 IEC61000-4-5 测试标准进



行，施加浪涌电压，波形：1.2/50us；耦合方式：L-N、L N-PE、L-PE、N-PE 根据要求选择；极性分别为：正 负；相位角为：0°、90°、180°、270°，浪涌次数各 5 次，间隔时间为 60S。

试验标准：试验结束后，试验电阻应不开路。

#### 11. Lightning surge characteristics

Test method: the test resistance into the applicable electrical appliances, in accordance with IEC61000-4-5 test standard, apply the surge voltage, waveform: 1.2 / 50us; Coupling mode: L-N, L N-PE, L-PE, N-PE can be selected according to requirements; The polarities were: positive and negative; The phase angles are: 0 ° , 90 ° , 180 ° , 270 ° , the number of surges is 5 times each, and the interval time is 60 S.

Test standard: After the test, the test resistance should not be open.

**12、主要试验项目、试验方法及性能要求（如无特殊说明，则均在标准试验大气条件下进行）**  
**The main test items, test methods and performance requirements (test should be carried out at standard atmosphere)**

表 4 Figure 4

| 序号<br>NO | 试验项目<br>Test items           | 试验方法<br>Test methods                                                                                                                                                                                           | 性能要求<br>Performance requirements                                                                                  |
|----------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1        | 阻值<br>Resistance             | 电阻误差分选仪测量。<br>Tested by Resistance Tolerance Sorter                                                                                                                                                            | 电阻值在标称阻值及允许偏差范围内。<br>The range of resistance from nominal resistance to the allowable tolerance.                  |
| 2        | 短时过负荷<br>Short-time overload | 电阻器施加 2.5 倍的额定电压，持续 5S，恢复 1~2h 后测量阻值，并计算阻值变化率。<br>Resistor is imposed 2.5 times rated voltage and lasts 5 seconds, then the voltage restores to the normal for 1-2h, and calculate the resistance change rate. | 阻值变化：<br>$\Delta R \leq \pm (2\%R + 0.05\Omega)$<br>Resistance change:<br>$\Delta R \leq \pm (2\%R + 0.05\Omega)$ |
| 3        | 可焊性<br>Weldability           | 把电阻器帽子浸入(260±5)℃的焊料锅中，持续 2S 后，取出观察焊料覆盖面积<br>Groove welding means put the resistor terminal (260 + 5) °C to immerse in the solder pot, insert depth distance element main body lasts 2 + / - 0.5 S              | 被浸入部分表面圆周方向 90%以上覆盖。<br>More than 90% the immersed surface is covered.                                            |



|   |                                      |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                   |
|---|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|   |                                      | 2-0.5 mm, take out the observation area covered by solder.                                                                                                                                                                                                                                                                                       |                                                                                                                   |
| 4 | 耐电压<br>High voltage                  | 把电阻器放在金属“V”形槽中，施加规定的绝缘电压，电压加在连在一起的两电阻引线及“V”形槽之间，持续60S。<br>Put resistor into a metal V-shaped groove, apply specified insulated voltage to the position between pigtailed and V-shaped groove for 60 seconds.                                                                                                                                     | 无击穿、飞弧<br>No breakdown, arcing                                                                                    |
| 5 | 耐焊接热<br>Resistance to Soldering Heat | 试前测量阻值，把电阻器帽盖浸入260±5℃的焊料锅中，持续10±0.5S，恢复1h后测量阻值，计算阻值变化率<br>Before testing should be measured resistance and put the resistor cap into the solder pot to 260 + 5 °C for 10 + / - 0.5 S, restore for 1h, and to measure the rate of resistance changing.                                                                                            | 阻值变化：<br>$\Delta R \leq \pm (1\%R + 0.05\Omega)$<br>Resistance change:<br>$\Delta R \leq \pm (1\%R + 0.05\Omega)$ |
| 6 | 耐久性<br>Endurance                     | 把电阻器放在(70±3)℃的恒温箱内，输入额定直流电压，1.5h通，0.5h断，如此循环1000h，取出后恢复1—4h后，测量阻值，计算阻值变化率。<br>Put resistor into a thermo tank (70±3) °C. Input rated AC voltage, work for 1.5 hours then break for 0.5 hour. By the way, cycle 1000 hours. Then take out resistor and don't touch it for 1-4 hours, measure its resistance and calculate resistance change rate. | 阻值变化：<br>$\Delta R \leq \pm (5\%R + 0.1\Omega)$<br>Resistance change:<br>$\Delta R \leq \pm (5\%R + 0.1\Omega)$   |
| 7 | 熔断特性<br>Fusing Features              | 使用直流稳压电源，按规定的负荷和标称阻值计算出施加在被试电阻器上的试验电压和电流值，试验时先在试验电路中接入与被试电阻器阻值相同大功率的电阻器，根据试验电流调节电压，使试验电流达到规定值，断开电源，换上被试电阻器，接通电源，若电流不在规定值时，应在2s内调                                                                                                                                                                                                                 | 熔断时间符合规定要求<br>The fusing time should be conform the requirements.                                                 |





|   |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                   |
|---|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|   |                                                       | <p>至规定值，此后不再调整电流，观察电流表，计算熔断时间</p> <p>Use DC regulated power supply, follow by the rules of load and nominal value calculated on the subjects resistor test voltage and current value of the first trial in the test circuit access with participants of the same high power resistor value resistor, according to the test voltage to adjust current, make the test current to achieve specified value, disconnect the power, change subjects resistors, connected to the power supply, if the current is not in the specified value, shall be transferred to the specified value in a 2 s, since then no longer to adjust current, observe the ammeter, calculating the melting time.</p> |                                                                                   |
| 8 | <p>意外过载<br/>Unexpected overload</p>                   | <p>将试验样品安装在距电阻主体 <math>25\pm 3\text{mm}</math> 的单层丝网圆筒内，施加 5、10、16 额定功耗过负荷，持续 5min 或到电阻器变成开路时止。</p> <p>Put sample into a single screen cylinder at <math>25\pm 3\text{mm}</math> to resistor body.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>丝网圆筒不着火<br/>Screen cylinder does not fire.</p>                                 |
| 9 | <p>雷击浪涌冲击 (Surge) 特性<br/>Lightning surge features</p> | <p>将试验电阻接入适用的电器中，按照 IEC61000-4-5 测试标准进行，施加浪涌电压，波形：1.2/50us；耦合方式：L-N、L N-PE、L-PE、N-PE 根据要求选择；极性分别为：正 负；相位角为：<math>0^\circ</math>、<math>90^\circ</math>、<math>180^\circ</math>、<math>270^\circ</math>，浪涌次数各 5 次，间隔时间为 60S。</p> <p>Test method: the test resistance into the applicable electrical appliances, in accordance with IEC61000-4-5 test standard, apply the surge voltage, waveform: 1.2 / 50us; Coupling mode: L-N, L N-PE, L-PE, N-PE can be selected according to requirements; The polarities were: positive and negative; The phase angles are: <math>0^\circ</math>, <math>90^\circ</math>,</p>                                                                             | <p>试验结束后，试验电阻应不开路。<br/>After the test, the test resistance should not be open</p> |



|  |  |                                                                                      |  |
|--|--|--------------------------------------------------------------------------------------|--|
|  |  | 180 ° , 270 ° , the number of surges is 5 times each, and the interval time is 60 S. |  |
|--|--|--------------------------------------------------------------------------------------|--|

### 13、包装数量、尺寸 packing quantity、size

#### 13.1 卷轴规格 Reel Specifications

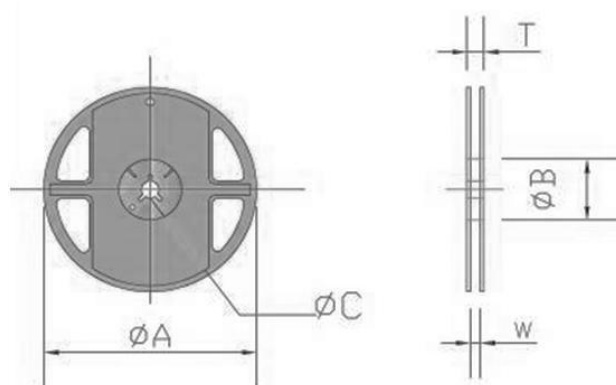
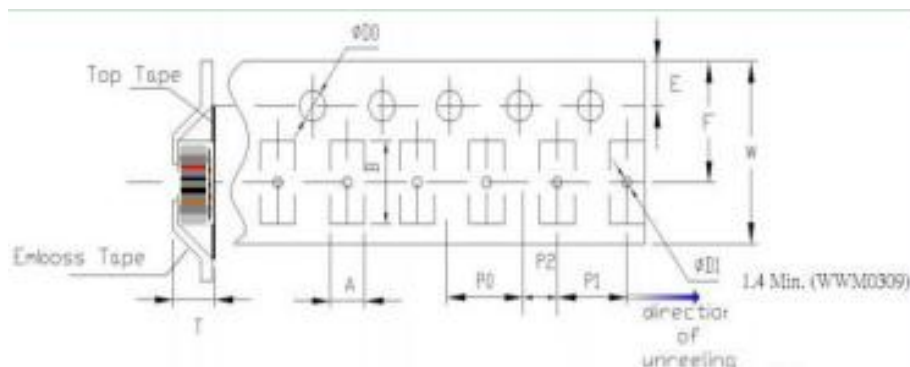


表5

Unit: mm

#### 13.2 带装规格 Tape Packing Specification

| 规格 Type | ΦA      | ΦB        | ΦC       | W        | T        | Emboss Plastic Tape (EA) |
|---------|---------|-----------|----------|----------|----------|--------------------------|
| 0207    | 330±1.5 | 100.0+1.0 | 13.0±0.5 | 13.0±0.5 | 15.5±0.5 | 6,000(13")               |
| 0309    | 330±1.5 | 100.0+1.0 | 13.0±0.5 | 17.0±0.5 | 19.0±0.5 | 2,500(13")               |
| 0410    | 330±1.5 | 100.0+1.0 | 13.0±0.5 | 17.0±0.5 | 19.0±0.5 | 2,000(13")               |
| 0411    | 330±1.5 | 100.0+1.0 | 13.0±0.5 | 25.0±0.5 | 27.0±0.5 | 1,800(13")               |



表六

| 规格 Type | 尺寸 (mm)       |               |                |                |               |
|---------|---------------|---------------|----------------|----------------|---------------|
|         | A             | B             | W              | E              | F             |
| 0207    | $2.6 \pm 0.1$ | $6.3 \pm 0.1$ | $12.1 \pm 0.3$ | $1.75 \pm 0.1$ | $7.0 \pm 0.1$ |
| 0309    | $4.2 \pm 0.1$ | $9.0 \pm 0.1$ | $16.0 \pm 0.3$ | $1.75 \pm 0.1$ | $8.8 \pm 0.1$ |
| 0410    | $4.2 \pm 0.1$ | $9.0 \pm 0.1$ | $16.0 \pm 0.3$ | $1.75 \pm 0.1$ | $8.8 \pm 0.1$ |
| 0411    | $5.3 \pm 0.1$ | $12 \pm 0.1$  | $24.0 \pm 0.3$ | $1.75 \pm 0.1$ | $12 \pm 0.1$  |
|         | P0            | P1            | P2             | Φ              | T             |
| 0207    | $4.0 \pm 0.1$ | $4.0 \pm 0.1$ | $2.0 \pm 0.05$ | $1.5 \pm 0.1$  | $2.8 \pm 0.1$ |
| 0309    | $4.0 \pm 0.1$ | $8.0 \pm 0.1$ | $2.0 \pm 0.05$ | $1.5 \pm 0.1$  | $3.3 \pm 0.1$ |
| 0410    | $4.0 \pm 0.1$ | $8.0 \pm 0.1$ | $2.0 \pm 0.05$ | $1.5 \pm 0.1$  | $3.3 \pm 0.1$ |
| 0411    | $4.0 \pm 0.1$ | $9.0 \pm 0.1$ | $2.8 \pm 0.05$ | $1.5 \pm 0.1$  | $4.2 \pm 0.1$ |



## 圈轴包装



## 外箱包装

