

### 1 外形尺寸和部件组成 Shape & Dimensions and Parts &Components

- 外形尺寸：见图 1 和表 1
- 部件组成：见图 2 和表 2

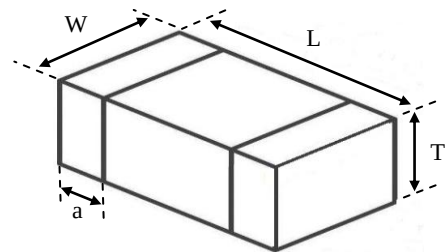


图 1 Fig.1

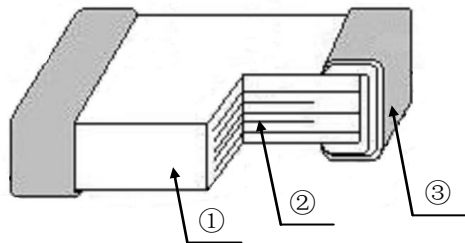


图 2 Fig.2

表 1 (Table 1)

| 类型 Type | L (mm)    | W (mm)    | T (mm)   | a (mm)     |
|---------|-----------|-----------|----------|------------|
| 1206    | 3.2 ±0.20 | 1.6 ±0.20 | 1.2 Max. | 0.50 ±0.25 |

表 2 (Table 2)

| 部分 Part      | ①                                                                    | ②                                                          | ③                                                                     |
|--------------|----------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------|
| 组成 Component | 片式压敏电阻用 ZnO 半导体陶瓷<br>ZnO Semiconductor Ceramics for<br>Chip Varistor | 内电极<br>(Ag 或 Ag-Pd)<br>Internal Electrode<br>(Ag or Ag-Pd) | 端电极<br>(Ag/Ni/Sn 三层)<br>Terminal Electrode<br>(Ag/Ni/Sn three layers) |

### 2 产品标识（料号） Product Identification(Part Number)

**KMOV**    **1206**    **H**    **330**    **K**    **T**  
 ①            ②            ③            ④            ⑤            ⑥

|           |                      |
|-----------|----------------------|
| ① 类别 Type |                      |
| KMOV      | 片式压敏电阻 Chip Varistor |

|                                         |                     |
|-----------------------------------------|---------------------|
| ② 外形尺寸 inch (mm) External Dimension L×W |                     |
| 1206                                    | 0.12×0.06 (3.2×1.6) |
| 1210                                    | 0.12×0.10 (3.2×2.5) |

|                         |                                           |
|-------------------------|-------------------------------------------|
| ③ 应用代号 Application Code |                                           |
| H                       | 大浪涌电流抑制<br>High Surge Current Suppression |

|                                            |     |
|--------------------------------------------|-----|
| ④ 最大直流工作电压<br>Maximum DC Operating Voltage |     |
| 090                                        | 9V  |
| 330                                        | 33V |

|                                           |      |
|-------------------------------------------|------|
| ⑤ 压敏电压公差<br>Tolerance of Varistor Voltage |      |
| K                                         | ±10% |
| L                                         | ±15% |

|                |         |
|----------------|---------|
| ⑥ 包装 Packaging |         |
| T              | 编带 Tape |

### 3 电气特性 Electrical Characteristics

| 型号<br>Part No. | 最大工作电压<br>Max. Working Voltage |                     | 压敏电压<br>Varistor Voltage<br>@1mA DC |                 | 最大限位电压<br>Max. Clamping<br>Voltage<br>(8/20μs) |                    | 峰值电流<br>Peak<br>Current<br>(8/20μs) | 能量耐量<br>Energy<br>(10/1000μs) |
|----------------|--------------------------------|---------------------|-------------------------------------|-----------------|------------------------------------------------|--------------------|-------------------------------------|-------------------------------|
|                | V <sub>DC</sub> (V)            | V <sub>AC</sub> (V) | V <sub>B</sub> (V)                  | ΔV <sub>B</sub> | V <sub>c</sub> (V)                             | I <sub>c</sub> (A) | I <sub>p</sub> (A)                  | W <sub>T</sub> (J)            |
| KMOV1206H330KT | 33                             | 26                  | 42                                  | ±10%            | 72                                             | 1                  | 200                                 | 0.6                           |

### 4 检验和测试程序

#### • 测试条件

如无特别规定，检验和测试的标准大气环境条件如下：

- 环境温度：20±15℃；
- 相对湿度：65±20%；
- 气压：86 kPa~106 kPa

如果对测试结果有异议，则在下述条件下测试：

- 环境温度：25±2℃；
- 相对湿度：65±5%RH；
- 气压：86kPa ~ 106kPa

#### • 检查设备

外观检查：20 倍放大镜；

压敏电压测试：压敏电阻测试仪

### 4 Test and Measurement Procedures

#### • Test Conditions

Unless otherwise specified, the standard atmospheric conditions for measurement/test are:

- Ambient Temperature: 20±15℃
- Relative Humidity: 65±20%
- Air Pressure: 86kPa to 106kPa

If any doubt on the results, measurements/tests should be made within the following limits:

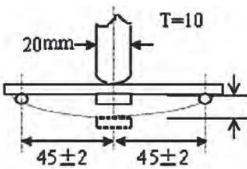
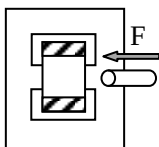
- Ambient Temperature: 25±2℃
- Relative Humidity: 65±5%
- Air Pressure: 86kPa to 106kPa

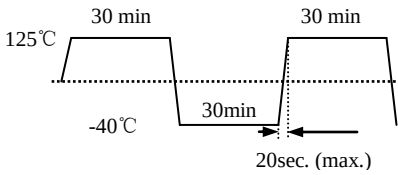
#### • Inspection Equipment

Visual Examination: 20× magnifier

Varistor Voltage test: Varistor teste

### 5 可靠性试验 Reliability Test

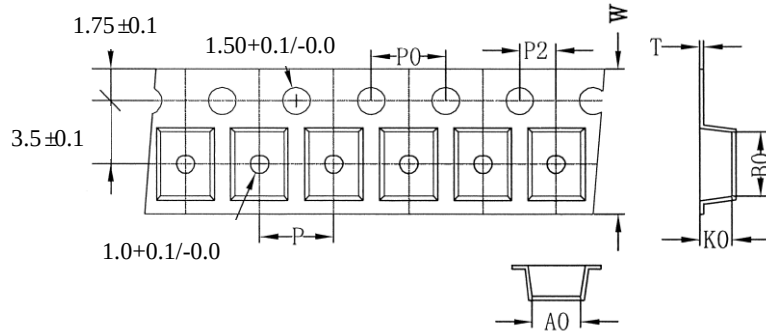
| 序号<br>No | 项目<br>Items                   | 测试条件/方法<br>Test conditions / Methods                                                                                                                 | 要求<br>Requirements                                                                                                  |
|----------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1        | 抗弯强度<br>Bending<br>Resistance | 弯曲度 Warp: 2mm<br>速度 Speed<0.5mm/s<br>保持时间 Duration: 10s           | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 ≤ 5%。<br>  ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤ 5%. |
| 2        | 端电极强度<br>Terminal<br>Strength | 速度 Speed<0.5mm/s<br>作用力 Apply force: 10N<br>保持时间 Duration: 10±1s  | 端电极无脱落。<br>No removal or split of the termination                                                                   |

|    |                                        |                                                                                                                                                                                                 |                                                                                                                                    |
|----|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 3  | 可焊性<br>Solderability                   | 焊接温度 Solder temperature: $240 \pm 5^{\circ}\text{C}$ ;<br>浸渍时间 Dipping Duration: $3 \pm 0.3\text{s}$ ;                                                                                          | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 元件端电极的焊锡覆盖率大 90%。<br>Wetting shall exceed 90% coverage.                           |
| 4  | 耐焊性<br>Resistance to<br>Soldering Heat | 焊接温度 Solder temperature: $260 \pm 5^{\circ}\text{C}$ ;<br>浸渍时间 Dipping Duration: $5 \pm 1\text{s}$ ;                                                                                            | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 5  | 热冲击<br>Thermal Shock                   | 高低温交替冲击 100 次。<br>High and low temperatures Transform for 100 Cycles.<br>                                      | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 6  | 高温存放<br>High Temp.<br>Storage          | 温度 Temperature: $125 \pm 2^{\circ}\text{C}$<br>保持时间 Duration: $1000 \pm 24\text{ h}$ .                                                                                                          | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 7  | 低温存放<br>Low Temp.<br>Storage           | 温度 Temperature: $-40 \pm 2^{\circ}\text{C}$<br>保持时间 Duration: $1000 \pm 24\text{ h}$ .                                                                                                          | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 8  | 高温负载<br>High Temp. Load                | 温度 Temperature: $85 \pm 2^{\circ}\text{C}$<br>加载电压 Loading Voltage: $V_{\text{DC}}$ .<br>保持时间 Duration: $1000 \pm 24\text{ h}$ .                                                                | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 9  | 湿热负载<br>Damp Heat Load                 | 温度 Temperature: $40 \pm 2^{\circ}\text{C}$<br>湿度 Humidity: 90% ~ 95% RH.<br>加载电压 Loading Voltage: $V_{\text{DC}}$ .<br>保持时间 Duration: $500 \pm 12\text{ h}$ .                                   | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 10 | 最大浪涌电流<br>Maximum Surge<br>Current     | 脉冲波形 Pulse waveform: 8/20 us<br>冲击次数: 正反各 1 次<br>Number of hit: each 1 time of +/- polarity<br>冲击电流: 最大浪涌电流<br>Applied current: maximum surge current ( $I_p$ )                                 | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |
| 11 | 最大浪涌能量<br>Maximum Surge<br>Energy      | 脉冲波形 Pulse waveform: 10/1000 us<br>冲击次数: 正反各 1 次<br>Number of hit: each 1 time of +/- polarity<br>冲击电流: 最大浪涌能量( $W_{\text{max}}$ )<br>Applied current: maximum surge energy( $W_{\text{max}}$ ) | ① 无可见机械损伤;<br>No visible mechanical damage.<br>② 试验前后压敏电压变化率 $\leq 10\%$ 。<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}}  \leq 10\%$ . |

## 6 编带 Taping

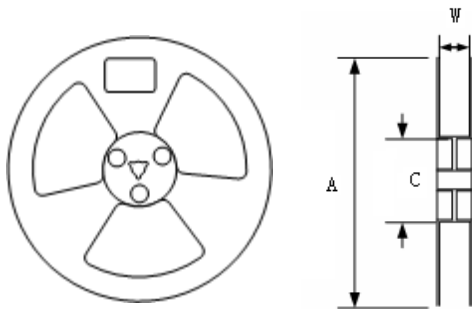
### (1) 载带尺寸 (单位: mm)

### Carrier tape dimensions. (Unit: mm)



| 类型 Type | A0<br>(±0.2) | B0<br>(±0.2) | K0<br>(±0.2) | T<br>(±0.05) | W<br>(±0.2) | P0<br>(±0.2) | P<br>(±0.2) | P2<br>(±0.2) |
|---------|--------------|--------------|--------------|--------------|-------------|--------------|-------------|--------------|
| 1206    | 1.9          | 3.5          | 1.27         | 0.22         | 8.0         | 4.0          | 4.0         | 2.0          |

### (2) 卷盘尺寸 Taping reel dimensions



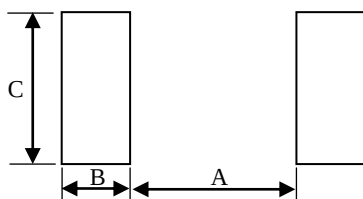
| 类型<br>Type | 规格<br>Spec. | 尺寸 Dimensions(mm) |              |      |
|------------|-------------|-------------------|--------------|------|
|            |             | A                 | W            | C    |
| 1206       | 7"          | 178±2             | 8.4±2.0/-0.0 | 58±2 |

### (3) 包装数量 Packaging quantity

| 类型<br>Type | 载带<br>Tape        | 每盘数量 (片)<br>Quantity(pcs/reel) |
|------------|-------------------|--------------------------------|
| 1206       | 塑载带 Embossed Tape | 3K                             |

## 7 焊接建议 Soldering Recommendation

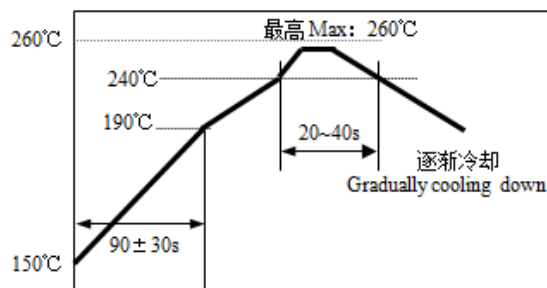
### (1) 建议基板 Recommended Land pattern



| 类型 Type | A (mm)  | B (mm)  | C (mm)  |
|---------|---------|---------|---------|
| 1206    | 1.8~2.5 | 1.2~1.8 | 1.2~1.8 |

### (2) 建议焊接曲线 Recommended Soldering Profile

- 无铅锡膏: Sn/Ag/Cu (96.5/3.0/0.5)
- Pb Free Solder Paste: Sn/Ag/Cu (96.5/3.0/0.5).
- 最高温度时最长焊接时间: 10s
- Max time at max temp: 10sec.
- 允许回流焊次数: 最多 2 次
- Allowed Reflow time: 2x Max



### 8 注意事项 Notes & Warnings

- **储存**
  1. 初始包装贮存温度: -10°C ~ +40°C。
  2. 相对湿度: ≤70%RH。
  3. 远离腐蚀性气体和阳光。
  4. 储存期: 12 个月。
- **Storage**
  1. Storage temperature in original packaging: -10~+40°C.
  2. Relative Humidity: ≤70%RH.
  3. Keep away from corrosive atmosphere and sunlight.
  4. Period of Storage: 12 Months.