

**SMD Crystal Resonator 贴片石英晶体谐振器**
**3225 26.000MHz 10PF 40Ω ±10PPM**
**1. Electrical characteristics 电气性能**

| Items 项目                                       | Symbol 符号 | Specification 规格说明  |        |        | Unit 单位    | Notes      |
|--|-----------|---------------------|--------|--------|------------|------------|
|  |           | Min 最小              | Typ 标准 | Max 最大 |            |            |
| Model No 型号                                    |           | Seam Seal 3225      |        |        |            |            |
| Blank Cutting Mode 晶片切型                        |           | AT FUND.            |        |        |            |            |
| Nominal Frequency 标称频率                         | FL        | 26.000000           |        |        | MHz        |            |
| Oscillation Mode 振荡模式                          |           | ■ Fundamental □ 3rd |        |        |            |            |
| Load Capacitance 负载电容                          | CL        |                     | 10     |        | pF         |            |
| Frequency Tolerance at 25 degrees<br>25°C 频率公差 |           | -10                 |        | 10     | ppm        |            |
| Operating Temperature 工作温度                     | Topr      | -20                 |        | 70     | °C         |            |
| Storage Temperature 储存温度                       | Tstg      | -40                 | ~      | 85     | °C         |            |
| Drive Level 驱动功率                               | DL        |                     | 100    |        | uW         |            |
| Trim Sensitivity/Pulling Factor<br>微调灵敏度/拉力系数  | TS        |                     |        | -      | ppm/<br>pf |            |
| Effective Resistance RR 等效电阻                   | Rr        | -                   | -      | 40     | Ω          | -          |
| Typical Shunt Capacitance<br>典型并联电容            | C0        | -                   | -      | 7      | pF         | -          |
| Motional Capacitance C1 动态电容                   | C1        | -                   | -      | NA     | fF         | -          |
| Insulation Resistance 绝缘电阻                     | Rins      | 500                 | -      | -      | MΩ         | at DC 100V |
| Aging: 老化率                                     |           | -3                  |        | +3     | ppm        | Per year   |
| Weight 重量                                      |           |                     | 0.018  |        | g          |            |

**Remark备注:** Sample Data See Attachment 抽样资料见附件

**Measure equipment 测量设备 :**

Electrical characteristics measured by S&A 250B or equivalent.

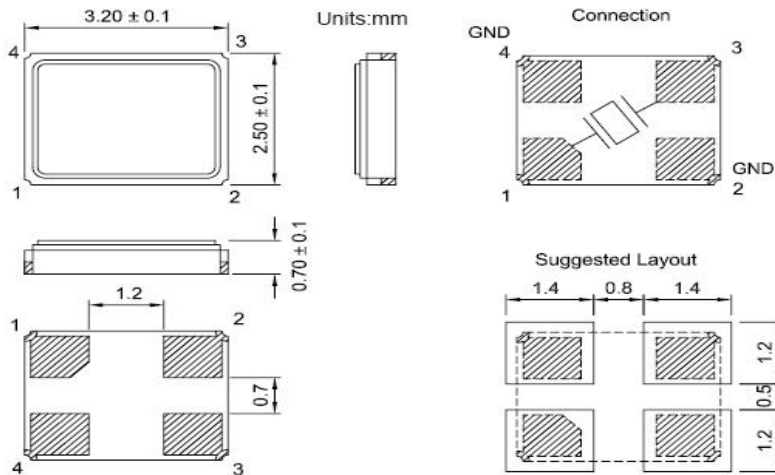
电气性能测量为S&A 250B或相当设备。

**Hermetically密封性 :**

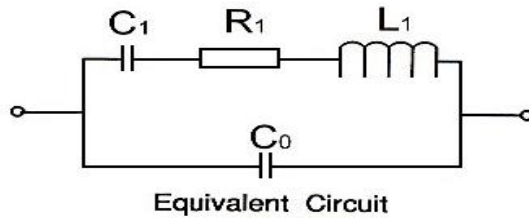
**Fine Leak细漏:** Helium Bombing  $4\text{kg}/\text{cm}^2$  for 1 Hour, Leak ate Less Than  $1 \times 10^{-8}$  atm. cc/sec  
 氦气加压 $4\text{kg}/\text{cm}^2$  1小时, 氦质谱检漏仪检测泄漏小于  $1 \times 10^{-8}$  atm. cc/sec

**Gross Leak精漏:**  $125^\circ\text{C}$  FC#40 , 120 Seconds, No Bubble  
 放入 $125^\circ\text{C}$ 氟油120秒不起泡

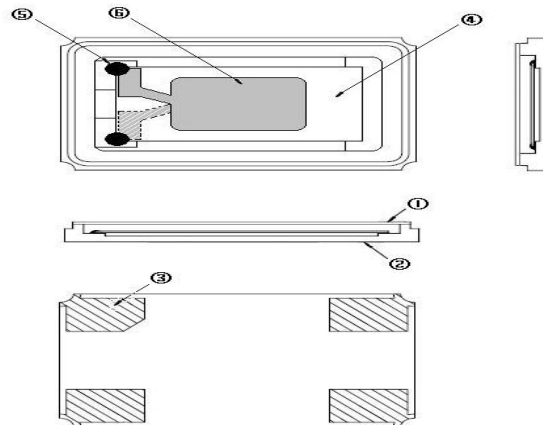
**2.Solder Dimension And Pattern焊接模型尺寸图:**



**3、Equivalent Circuit等效电路图:**

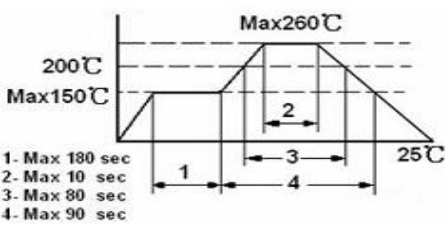


**4. Structure drawing结构图:**

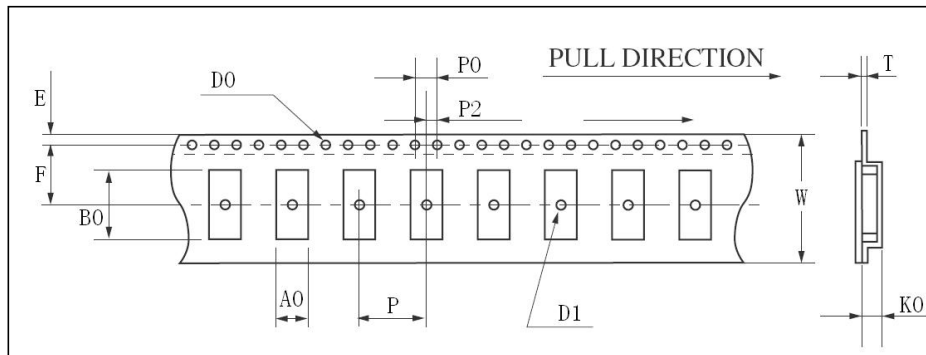


| NO | COMPONENTS<br>构成             | MATERIALS<br>原料       | QTY<br>数量 | FINISH / SPECIFICATIONS<br>结束/说明                           |
|----|------------------------------|-----------------------|-----------|--|
| 1  | Cap上盖                        | Metal ( Fe ) 金属       | 1         | -  |
| 2  | Base基座                       | Ceramic陶瓷制品           | 1         | Color black炭黑色   |
| 3  | PAD焊盘                        | Au金                   | 4         | Tungsten metalize钨合金<br>+ Ni plating镍电镀<br>+ Au plating金电镀 |
| 4  | Crystal Blank石英晶片            | SiO <sub>2</sub> 二氧化硅 | 1         | -  |
| 5  | Conductive Adhesive<br>导电粘合剂 | Ag银                   | 4         | Silicone硅树脂  |
| 6  | Electrode电极                  | Ag银 + Cr铬             | 2         | -  |

## 5. Reliability Specification可靠性说明

| Item 项目                                     | Condition 条件  | Standard 标准   |
|---|---|---|
| 1. Drop characteristics<br>跌落特性             | Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)  | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 2. Mechanical shock<br>机械冲击                 | Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times   | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 3. Shake characteristics<br>震动特性            | Shake frequency 10~55Hz, cycl~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 1 hours.  | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 4. Humidity characteristics<br>湿度特性         | +40 $\pm$ 2 $^{\circ}\text{C}$ & 90%~95% R.H. 250 hours   | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 5. Low temperature characteristics<br>低温特性  | -40 $\pm$ 2 $^{\circ}\text{C}$ , 250 hours, put in room temperature, test after 1 hours.  | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 6. High temperature characteristics<br>高温特性 | +85 $\pm$ 2 $^{\circ}\text{C}$ , 250 hours, put in room temperature, test after 1 hours.  | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 7. Temperature cycling 温度循环                 | -30 $\pm$ 3 $^{\circ}\text{C}$ /30 $\pm$ 3 min~+85 $\pm$ 2 $^{\circ}\text{C}$ /30 $\pm$ 3min, 5 cycles  | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |
| 8. Refluence examination 回流焊特性              |  <p>1- Max 180 sec<br/>2- Max 10 sec<br/>3- Max 80 sec<br/>4- Max 90 sec</p> | Frequency change: $\leq \pm 5\text{ppm}$<br>Rr as specification |

## 6. Type & Reel 编带类型及卷盘



|    | HC-49SMD    | 5032        | 3225        | 2520        | 2016      |
|----|-------------|-------------|-------------|-------------|-----------|
| W  | 24.00±0.30  | 12.00±0.05  | 8.00±0.05   | 8.00±0.05   | 8.00±0.05 |
| E  | 1.75±0.10   | 1.75±0.10   | 1.75±0.05   | 1.75±0.05   | 1.75±0.05 |
| F  | 11.5±0.10   | 5.5±0.10    | 3.5±0.05    | 3.5±0.05    | 3.5±0.10  |
| T  | 0.40±0.05   | 0.30±0.05   | 0.25±0.03   | 0.25±0.03   | 0.20±0.05 |
| P  | 12.00±0.10  | 8.00±0.10   | 4.00±0.05   | 4.00±0.05   | 4.00±0.10 |
| P0 | 4.00±0.10   | 4.00±0.10   | 4.00±0.05   | 4.00±0.05   | 4.00±0.10 |
| P2 | 2.00±0.10   | 2.00±0.10   | 2.00±0.05   | 2.00±0.05   | 2.00±0.10 |
| D0 | φ 1.50+0.10 | φ 1.50+0.10 | φ 1.50+0.10 | φ 1.50+0.10 | 1.00±0.10 |
| D1 | φ 1.50MIN   | φ 1.50MIN   | φ 1.00MIN   | φ 1.00MIN   | 1.10±0.10 |
| A0 | 4.60±0.10   | 3.50±0.10   | 2.70±0.05   | 2.25±0.05   | 1.80±0.05 |
| K0 | 4.40±0.10   | 1.60±0.10   | 1.50±0.10   | 0.70±0.10   | 0.65±0.10 |
| B0 | 14.20±0.15  | 5.20±0.10   | 3.50±0.05   | 2.75±0.05   | 2.20±0.10 |