

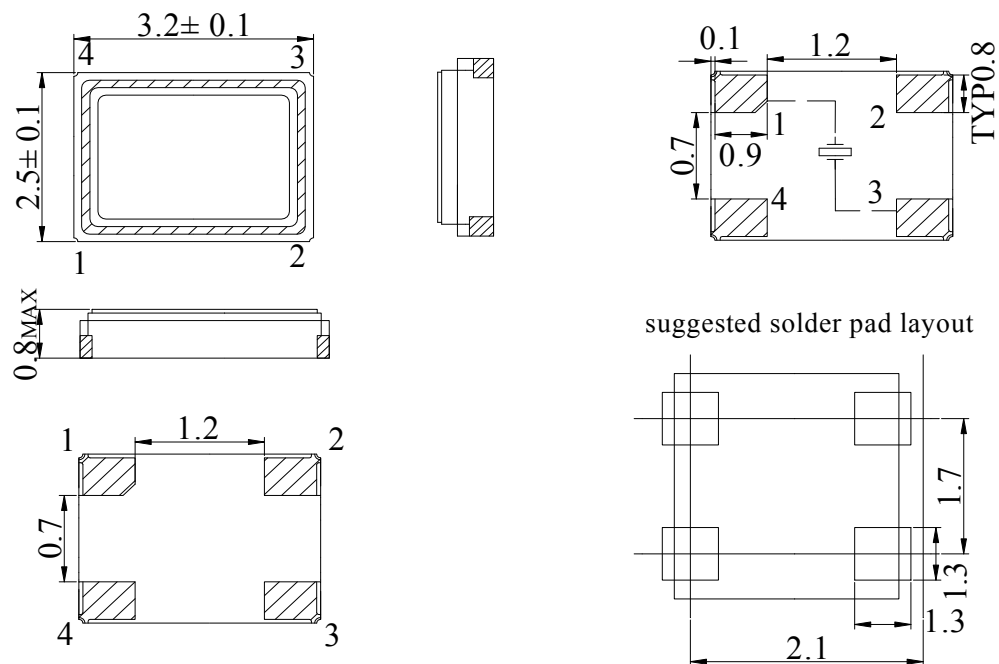
SMD3225 石英晶体谐振器
16.000MHz/TOL: ±10ppm/CL:9PF
SPECIFICATION REQUIREMENTS FOR CRYSTAL
晶体产品要求
 电气参数 Electrical Characteristic:

| | |
|---------------------------------------|---|
| 1. Model No. | SMD3225 (4pin) |
| 2. Nominal Frequency(FN) | 16.000MHz |
| 3. Oscillation Mode | <input checked="" type="checkbox"/> Fundamental <input type="checkbox"/> 3RD overtone <input type="checkbox"/> 5th overtone |
| 4. Frequency Tolerance (ΔF) | ±10ppm (ref. at 25°C) |
| 5. Operation Temperature | -20°C to +70°C |
| 6. Storage Temperature | -40°C to +85°C |
| 7. Frequency stability(Tol) | ±20ppm |
| 8. Load Capacitance(CL) | 9PF |
| 9. Series Resistance(ESR) | ≤60 Ω |
| 10. Drive Level | 100uW |
| 11. Shunt Capacitance (Co) | 3.0PF |
| 12. Aging Rate Per Year | ±3ppm/year |
| 13. Insulation Resistance | 500MΩ min. at DC 100V±10V |
| 14. Test Circuit. | Measured by S&A 250B |

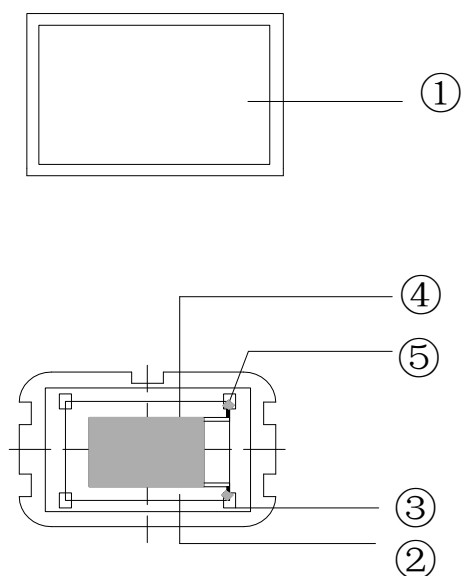
产品结构、尺寸

• Mechanical Dimensions 外型尺寸

UNIT(单位) : mm (毫米)

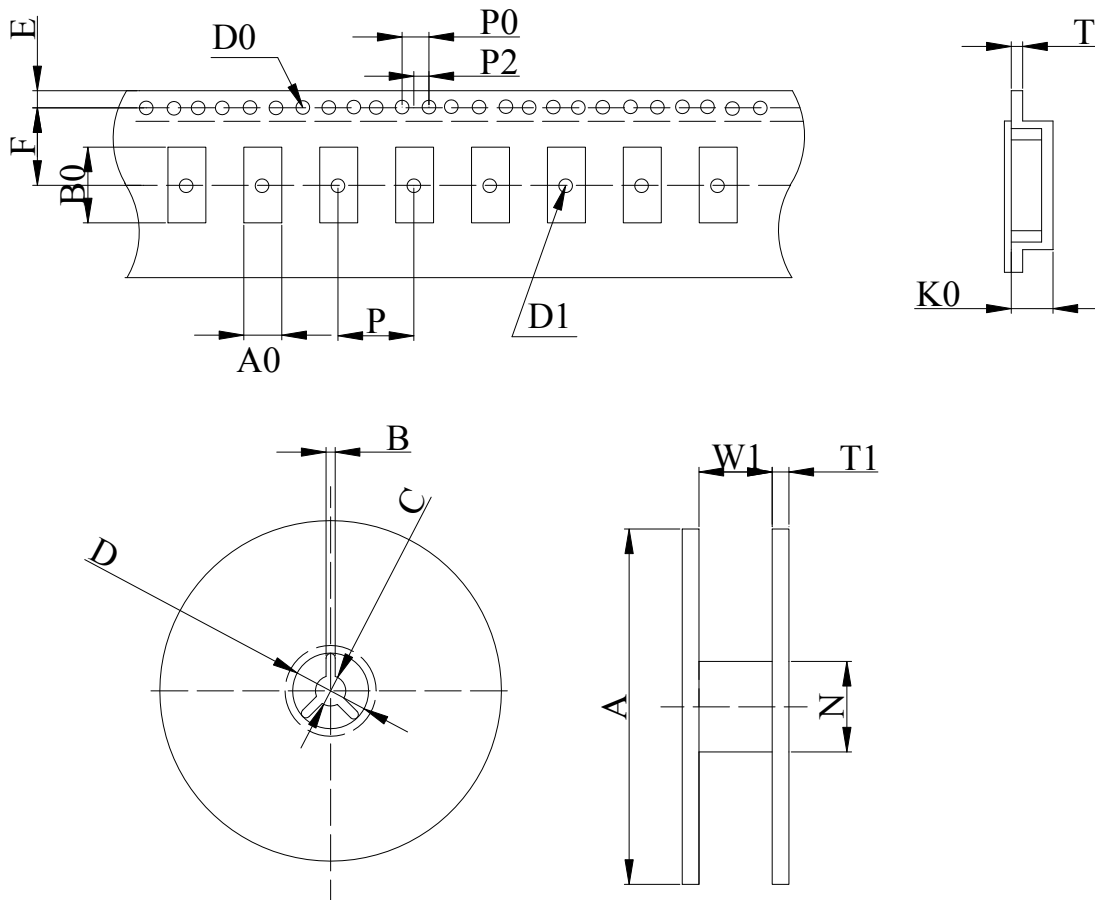


Note) #2,#4 is connected with a cover
(Please connect with a GND or a power supply)



| NO. | NAME | 名称 |
|-----|-------|-----|
| ① | CAN | 外壳 |
| ② | BASE | 基座 |
| ③ | LEAD | 焊点 |
| ④ | BLANK | 晶片 |
| ⑤ | RESIN | 导电胶 |

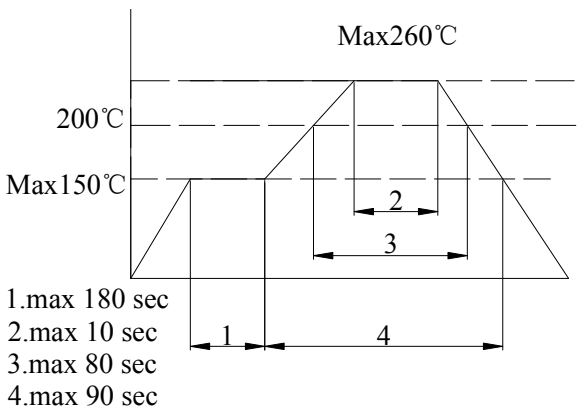
包装要求



| | NC-49SMD | 8045 | 7050 | 6035 | 5032 | 4025 | 3225 |
|----|----------|------|------|------|------|------|------------|
| W | | | | | | | 12.00±0.05 |
| E | | | | | | | 1.75±0.10 |
| F | | | | | | | 5.5±0.10 |
| T | | | | | | | 0.30±0.05 |
| P | | | | | | | 8.00±0.10 |
| P0 | | | | | | | 4.00±0.10 |
| P2 | | | | | | | 2.00±0.10 |
| D0 | | | | | | | Φ1.50±0.10 |
| D1 | | | | | | | Φ1.50MIN |
| A0 | | | | | | | 2.85±0.10 |
| K0 | | | | | | | 0.85±0.10 |
| B0 | | | | | | | 3.55±0.10 |
| | | | | | | | |
| A | | | | | | | Φ178±2.00 |
| B | | | | | | | 2.00±0.50 |
| C | | | | | | | Φ13.2±0.20 |
| D | | | | | | | Φ20±0.50 |
| N | | | | | | | Φ60.5±1.00 |
| W1 | | | | | | | 12.5±0.20 |
| T1 | | | | | | | 1.80±0.20 |

可靠性实验规范

RELIABILITY SPECIFICATION

| 序号 | RELIABILITY 试验名称 | RELIABILITY CONDITIONS 可靠度试验条件 | SPECIFICATION 规格说明 |
|----|--|--|--|
| 1 | ELECTRODE TERMINAL PULL 电极端子拉力 | 1KG FORCE IN AXES OF ELECTRODE TERMINATION 10±1sec 1KG 力垂直施于电极端子上 10±1 秒 | 1.GLASS HERMETICITY & VISUAL. 玻璃密封性和外观检视 2. LEAD CRACKED or BROKEN NOT ALLOWED' 不允许引线断裂或破裂 |
| 2 | ELECTRODE WIRE-LEAD BEND 电极端子弯曲拉力 | 2.5mm FROM ELECTRODE TERMINAL,BEND 90° , '0.45KG MASS APPLIED 3TIMES. 2.5 毫米处电极端子弯曲 90° | |
| 3 | SOLDERABILITY 产品可焊性 | SOLDER:235 ± 5 °C ,DIPPING:5 ± 0.5sec. 焊接温度:235±5°C,浸渍时间:5±0.5 秒 | AT LEAST 95% COATING. 至少覆盖率为 95% |
| 4 | RESISTANCE TO 产品可焊耐热时间 | SOLDER:260+5 °C ,DIPPING:10 ± 1sec. 焊接温度:260±5°C,浸渍时间:10±1 秒  | 1.AT LEAST 95% COATING 至少覆盖率为 95% 2. $\Delta F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20% |
| 5 | VIBRATION TEST 振动测试 | 10g,10 ~ 55 ~ 10hz 1MINUTE,X、Y、Z PLANE EACH 2hrs. 10G, 10~55~10 赫兹 1 分钟,X、Y、Z 水 平面,每 2 小时 | $\Delta F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20% |
| 6 | DROP TEST 跌落测试 | 75CM HIGH,3 TIMES ON HARD BOARD 75 厘米高, 3 次坠落在硬木质板上 | $F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20% |
| 7 | AGING TEST 老化测试 | 85°C Dynamic 1000hrs 85°C 动态测试 1000 小时 | $F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20% |
| 8 | CCELERATED AGING 加速老化测试 | 125 °C ± 3 °C ,TIME:168 hrs. Dynamic 125°C±3°C,的动态下:168 小时. | $F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20% |
| 9 | SALT SPRAY 盐水喷雾试验 | 5%NaCL 35 °C ± 2 °C CHAMBER,48hrs.PH 值:6.5~7.2 5% NaCL(碳酸钠),35 °C ± 2 °C 的温箱里,48 小时 PH 值:6.5~7.2 | 1.NO CORROSION ON LEAD&CAN 1.基座和外壳无腐蚀 $F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20% |

| | | | |
|----|--|---|---|
| 10 | HIGH-LOW TEM. STORAGE(STATIC) 高低温储存(静态测试) | HIGH TEM:125°C ± 2°C,1000hrs 高温:125°C ± 2°C,1000 小时 LOW TEM:-40°C ± 3°C,1000hrs 低温:-40°C ± 3°C,1000 小时 | F/F ≤ ± 5ppm △ F/Rr ≤ ± 10% or 2 Ω BETTER,20% |
| 11 | HIGH TEM. & HUM. STORAGE TEST 高温高湿储存试验 | TEM:40°C ± 2°C HUM:83%-88%,96hrs 温度:40°C ± 2 湿度:83%-88% ,储存 96 小时 | F/F ≤ ± 5ppm △ F/Rr ≤ ± 10% or 2 Ω BETTER,20% |
| 12 | TEM. & HUM. CYCLING TEST 温湿度循环测试 | TEM:-10°C ± 2°C ~ 65°C ± 2°C 24hrs 1 cycle' HUM:93 ± 3% 5 cycles 温度:-10°C ± 2°C ~ 65°C ± 2°C,湿度:93 ± 3%, 24 小时为 1 循环, 运行 5 个循环 | F/F ≤ ± 5ppm △ F/Rr ≤ ± 10% or 2 Ω BETTER,20% |
| 13 | HIGH-LOW TEM. OPERATING TEST 高-低温运行测试 | HIGH TEM:85°C ± 2°C,2hrs 高温:85°C ± 2°C,运行 2 小时 LOW TEM:-30°C ± 2°C,2hrs 低温:-30°C ± 2°C 运行 2 小时 | F/F ≤ ± 5ppm △ F/Rr ≤ ± 10% or 2 Ω BETTER,20% |
| 14 | FREQUENCY/Rr V.S OPERATING TEM.. 频率/电阻在操作温度下之变化测试 | TEM:-10°C ~ +60°C、-20°C ~ +70°C、0°C ~ 70°C 'MEASURE POINT: EVERY 10°C DEVIATION. 温度:-10°C ~ +60°C、-20°C ~ +70°C 0°C ~ 70°C 测试点:依每 10°C 测试一值 | AS SPECIFICATION 依客户要求 |
| 15 | <p data-bbox="226 1146 507 1223">HIGH LOW SHOCK 高低温冲击</p> <div data-bbox="226 1088 1414 1590"> <p data-bbox="1104 1088 1414 1200">1. 150°C 60--120Sec Max 2. 200°C 20--30Sec Max 3. 260°C 10Sec Max</p> <p data-bbox="226 1258 389 1290">260°C MAX</p> <p data-bbox="226 1361 341 1393">150 ± 5</p> <p data-bbox="740 1527 849 1559">120 SEC</p> <p data-bbox="1027 1563 1120 1594">10 SEC</p> </div> <p data-bbox="226 1644 501 1680">SPECIFICATION</p> <p data-bbox="226 1706 746 1742">规格说明: $\Delta F/F \leq \pm 5\text{ppm}$</p> <p data-bbox="491 1787 1075 1823">$\Delta F/Rr \leq \pm 10\% \text{ or } 2 \Omega$ BETTER,20%</p> | | |