



LUCKI CM ELECTRONICS Co.,Ltd



承认书

APPROVAL SHEET

客户代码 Customer : _____

产品名称 Part Number : 石英晶体谐振器

LK 料号 LK Part No. : L327S390H11L

产品型号 Holder : SMD 3225

标称频率 Frequency : 39.000MHZ 10PF ±10PPM

制造商 Manufacturer : 浙江蓝晶芯微电子有限公司

提交时间 Date : 2023-08-04

| | | |
|----------------|---------------|----------------|
| 制作 DESIGNER | 审核 Checked | 批准 Approved |
| 李倩 | 林本伟 | 孙娟 |

客户批准 Customer Approval :

| | |
|---------------|----------------|
| 审核 Checked | 批准 Approved |
| | |

(请批准后回签一份 PLEASE RETURN A COPY WITH APPROVAL)



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规格内容
Specification content

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1. 电性能 Electrical characteristics

| Items | Symbol | Specification | | | Unit | Notes |
|-----------------------------------|---------------|--------------------|--------|-----|--------|-------------|
| | | Min | Typ | Max | | |
| 型号名称 Model No | | Seam Seal 3225 | | | | |
| 晶片切型 Blank Cutting Mode | | AT FUND. | | | | |
| 标称频率 Nominal Frequency | F0 | 39.000000 | | | MHz | |
| 振动模式 Oscillation Mode | | ■ Fundamental □3rd | | | | |
| 频差公差 Frequency Tolerance | $\Delta F/F0$ | -10 | | 10 | ppm | 25°C ± 3°C |
| 负载电容 (CL) Load Capacitance | CL | | 10 | | pF | |
| 工作温度条件下的频差 Frequency Stability | TC | -10 | | 10 | ppm | |
| 工作温度 Operating Temperature | Topr | -20 | | 75 | °C | |
| 存储温度范围 Storage Temperature | Tstg | -55 | ~ | 125 | °C | |
| 驱动功率 Drive Level | DL | 10 | 100 | 300 | uW | |
| 等效串联电阻 Effective Resistance RR | Rr | - | - | 20 | Ω | |
| 静态电容(C0) Shunt Capacitance C0 | C0 | - | - | 2 | pF | |
| 频率牵引灵敏度 Trim Sensitivity TS | TS | - | - | - | ppm/PF | |
| 绝缘阻抗 Insulation Resistance | IR | 500 | - | - | MΩ | at DC 100 V |
| 年化率 Aging | Fa | -2 | | 2 | ppm | Per year |
| 重量 Weight | | | 0.0163 | | g | |

测量设备 Measure equipment: S&A 250B

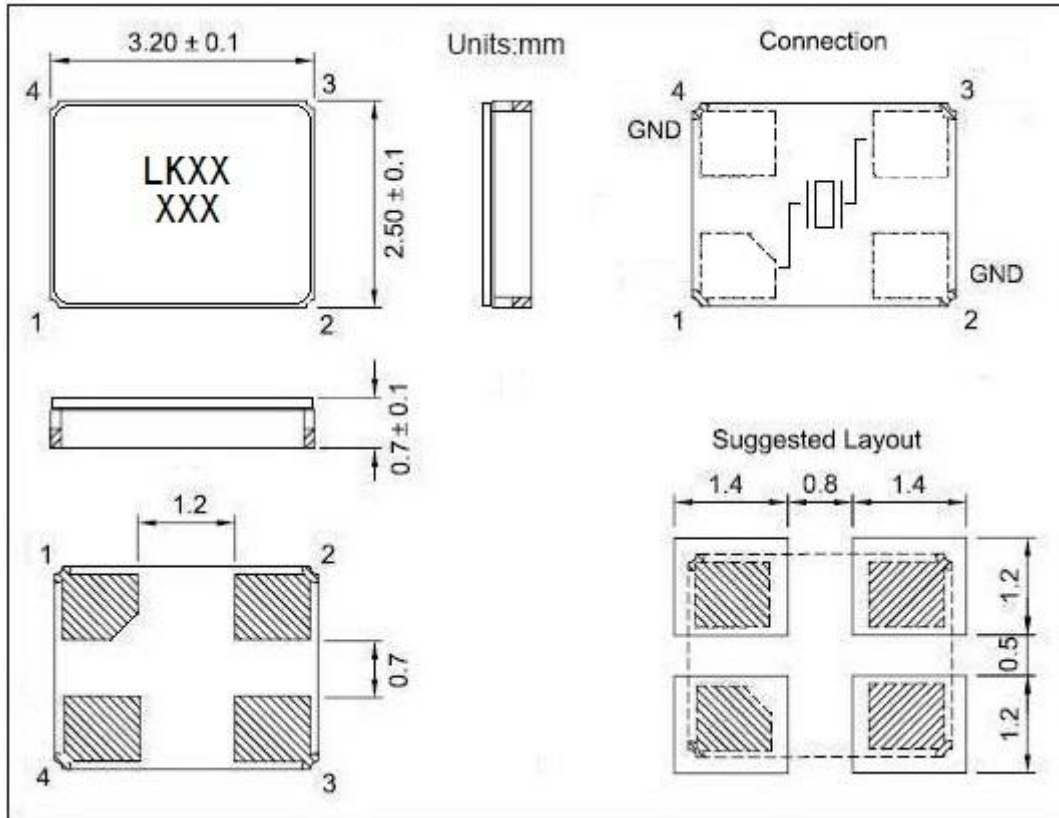
测量条件 Measurement conditions: 温度 23°C±3°C
湿度 30%RH -60%RH



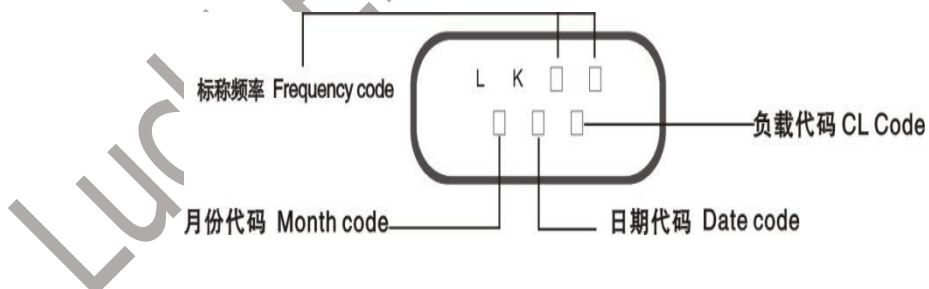
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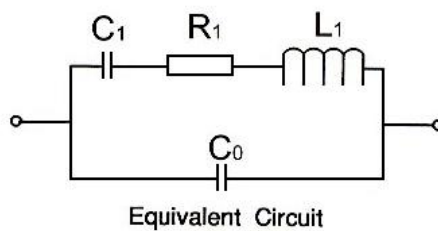
2.外形尺寸 Overall dimensions

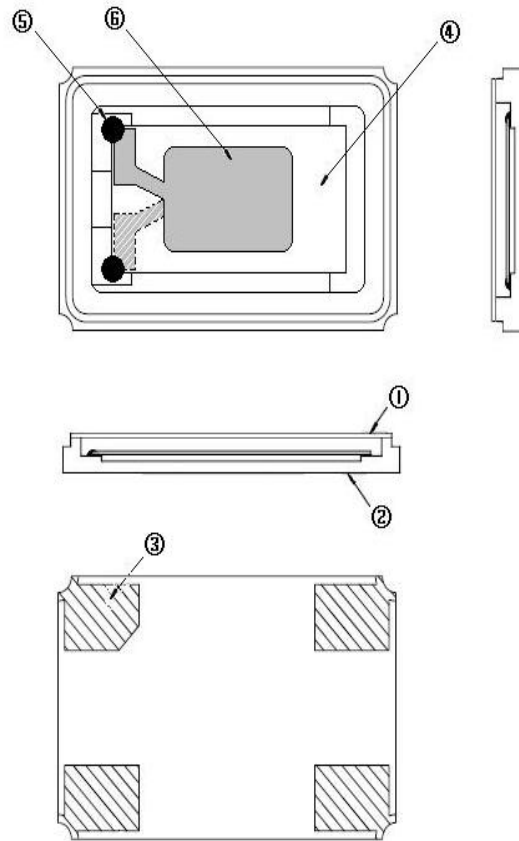


3. 印字标准 Marking specification



4. 等效电路图 Equivalent Circuit



5. 内部结构图 Structure drawing


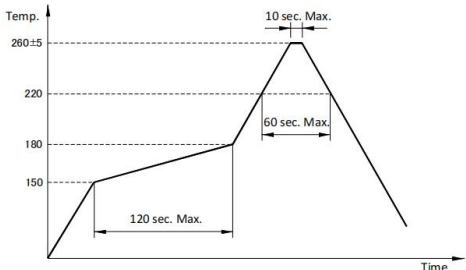
| NO. | 组件 COMPONENTS | 材料成份 MATERIALS | 数量 QTY |
|-----|----------------------------|-------------------------|-----------|
| 1 | 上盖 LID | KV 合金 KV(Fe/Co/Ni) | 1 |
| 2 | 底座 Package | 陶瓷 Ceramic | 1 |
| 3 | 引脚 PAD | 金 Au | 4 |
| 4 | 晶片 Crystal Blank | 贵金属银 Noble Metal(Ag) | 1 |
| 5 | 导电胶 Conductive Adhesive | 树脂、银粉 Resin、Ag | 4 |
| 6 | 电极 Electrode | 贵金属银 Noble Metal(Ag) | 2 |



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6. 可靠性规范 Reliability Specification

| NO. | 试验项目 Test item | 试验方法 Test Methods | 判定标准 Judgment criteria |
|-----|--------------------------------|--|---|
| 1 | 跌落试验 Shock | 高度: 100cm,硬质木版: 3cm,自然落下 3 回 Height:100cm,Wooden block:3cm, Dropping times:3 times | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 2 | 耐振动性 Vibration | 振幅: 1.5mm,周波数: 10Hz-55Hz,方向: X,Y,Z, 周期: 2h Amplitude:1.5mm,Frequency:10~55Hz,Direction:X.Y.Z,Period:2hours | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 3 | 回流焊 Reflow |  | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 4 | 耐湿试验 Humidity | 温度: $65^{\circ}\text{C} \pm 2^{\circ}\text{C}$,湿度: 90%~95% 时间: 48 h Temperature: $65^{\circ}\text{C} \pm 2^{\circ}\text{C}$,Humidity:90%~95%,Period:48h | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 5 | 低温保存试验 Low Temperature | 温度: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 时间: 2h Temperature: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Period:2h | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 6 | 高温保存试验 High Temperature | 温度: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 时间: 16h Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Period:16h | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 7 | 热冲击试验 Temperature Cycle | 1 个循环: -40°C (30min) \rightarrow 85°C (30min) 30 个循环 1cycle: -40°C (30min) \rightarrow 85°C (30min) 30cycle | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 8 | 折弯测试 Substrate Bending Test | 弯曲量 : 3mm , 受力: 10 秒, 速度 0.5mm/s. Bend Amount : 3 mm Force:10 second by 0.5mm/s speed. | $\Delta F/F \leq 5.0\text{ppm}$ $\Delta CI \leq 5\Omega$ or 20% |
| 9 | 密封性 Sealing Test | 氦气压力标准: 5.0~5.5Kg/cm ² , 加压时间: 2 小时 HELIUM BOMBING 5.0~5.5 Kg / cm ² ,FOR 2 HOURS. | Leak rate less than: $< 1 \cdot 0\text{E}-9 \text{ Pa} \cdot \text{m}^3/\text{sec}$ 泄漏率: $< 1 \cdot 0\text{E}-9 \text{ Pa} \cdot \text{m}^3/\text{sec}$ |
| 10 | 焊锡试验 Soldering Dip | 温度: $+260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 时间: 3 sec Temperature: $+260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Period: 3 second | 浸入端至少 95%面积覆盖着新的焊接材料. |



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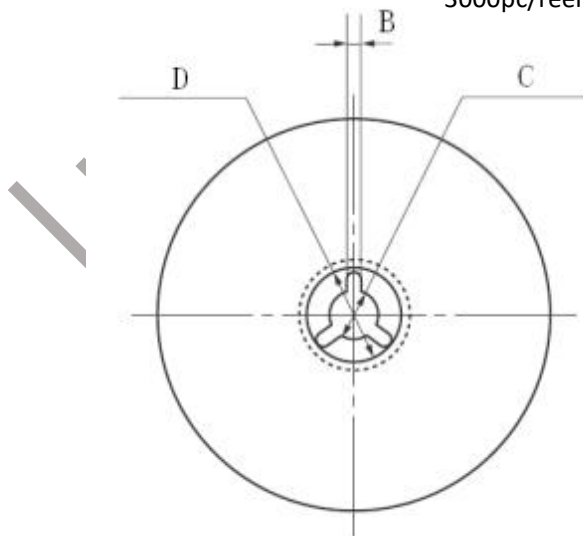


7. 编带类型与卷盘 Type & Reel

| | HC-49SMD | 7050 | 6035 | 5032 | 3225 | 2520 | 2016 |
|----|------------|------------|------------|------------|------------|------------|------------|
| W | 24.00±0.30 | 16.00±0.05 | 12.00±0.05 | 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±0.10 | 1.75±0.10 | 1.75±0.10 | 1.75±0.10 | 1.75±0.10 |
| F | 11.5±0.10 | 7.5±0.10 | 5.5±0.10 | 5.5±0.10 | 3.5±0.05 | 3.5±0.05 | 3.5±0.05 |
| T | 0.40±0.05 | 0.35±0.05 | 0.35±0.05 | 0.30±0.05 | 0.25±0.03 | 0.25±0.03 | 0.25±0.03 |
| P | 12.00±0.10 | 8.00±0.10 | 8.00±0.10 | 8.00±0.10 | 4.00±0.05 | 4.00±0.05 | 4.00±0.05 |
| P0 | 4.00±0.10 | 4.00±0.10 | 4.00±0.10 | 4.00±0.10 | 4.00±0.05 | 4.00±0.05 | 4.00±0.05 |
| P2 | 2.00±0.10 | 2.00±0.10 | 2.00±0.10 | 2.00±0.10 | 2.00±0.05 | 2.00±0.05 | 2.00±0.05 |
| D0 | φ1.50±0.10 | φ1.50±0.10 | φ1.50±0.10 | φ1.50±0.10 | φ1.50±0.10 | φ1.50±0.10 | φ1.50±0.10 |
| D1 | φ1.50MIN | φ1.50MIN | φ1.50MIN | φ1.50MIN | φ1.00MIN | φ1.00MIN | φ1.00MIN |
| A0 | 4.60±0.10 | 5.40±0.10 | 3.90±0.10 | 3.50±0.10 | 2.70±0.10 | 2.4±0.10 | 2.00±0.10 |
| K0 | 4.40±0.10 | 1.80±0.10 | 1.50±0.10 | 1.60±0.10 | 1.50±0.10 | 1.10±0.10 | 1.10±0.10 |
| B0 | 14.20±0.15 | 7.40±0.10 | 6.40±0.10 | 5.20±0.10 | 3.50±0.05 | 2.90±0.05 | 2.4±0.05 |



3000pc/reel



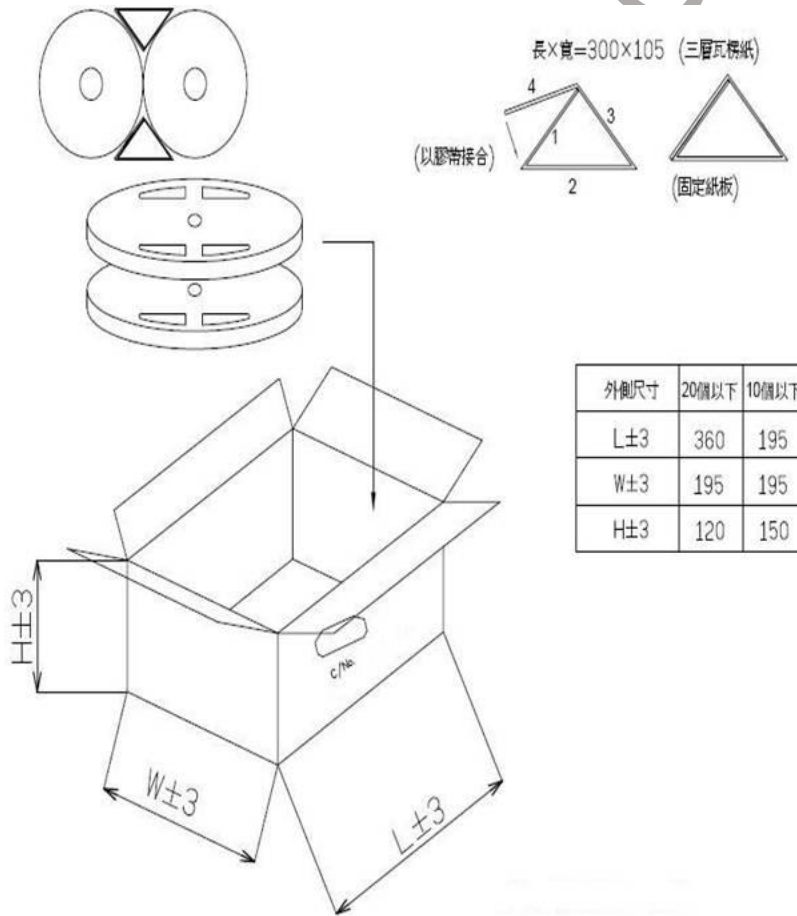


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| | | | | | | | |
|----|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | HC-49SMD | 7050 | 6035 | 5032 | 3225 | 2520 | 2016 |
| A | $\phi 330 \pm 1.0$ | $\phi 178 \pm 2.0$ | $\phi 178 \pm 2.0$ | $\phi 178 \pm 2.0$ | $\phi 178 \pm 2.0$ | $\phi 178 \pm 2.0$ | $\phi 178 \pm 2.0$ |
| B | 2.30 ± 0.20 | 2.00 ± 0.50 | 2.00 ± 0.50 | 2.00 ± 0.50 | 2.50 ± 0.50 | 2.50 ± 0.50 | 2.50 ± 0.50 |
| C | $\phi 13.5 \pm 0.20$ | $\phi 13.2 \pm 0.20$ | $\phi 13.2 \pm 0.20$ | $\phi 13.2 \pm 0.20$ | $\phi 13.5 \pm 0.20$ | $\phi 13.5 \pm 0.20$ | $\phi 13.5 \pm 0.20$ |
| D | $\phi 21.5 \pm 0.20$ | $\phi 20.0 \pm 0.50$ | $\phi 20.0 \pm 0.50$ | $\phi 20.0 \pm 0.50$ | $\phi 56.8 \pm 0.50$ | $\phi 56.8 \pm 0.50$ | $\phi 56.8 \pm 0.50$ |
| N | $\phi 100.0 \pm 0.5$ | $\phi 60.5 \pm 1.0$ | $\phi 60.5 \pm 1.0$ | $\phi 60.5 \pm 1.0$ | $\phi 60.5 \pm 1.0$ | $\phi 60.5 \pm 1.0$ | $\phi 60.5 \pm 1.0$ |
| W1 | 24.5 ± 0.20 | 16.5 ± 0.20 | 12.5 ± 0.20 | 12.5 ± 0.20 | 9.4 ± 0.30 | 8.0 ± 0.30 | 8.0 ± 0.30 |
| T1 | 2.30 ± 0.20 | 1.80 ± 0.20 | 1.80 ± 0.20 | 1.80 ± 0.20 | 1.40 ± 0.20 | 1.40 ± 0.20 | 1.40 ± 0.20 |

8. 包装说明 Packing Specification



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