



四川索斯特电子有限公司  
Sichuan Source-Set Electronics Co., Ltd  
石英晶体规格书



CRYSTAL UNIT SPECIFICATIONS

规 格 书  
SPECIFICATIONS

规格书编号/ID: M5345040A

物料描述/

Product Description: M49SMD-13.560Mhz- 12PF-10ppm

料号/

Part Number: SCAXS13X56000YEPN

制作人/

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日期/

Date: 2025/8/22

盖章/

Stamp: \_\_\_\_\_

客户签署/

Customer signature required

公司名称/

Company: \_\_\_\_\_

客户料号/

Customer Part Number: \_\_\_\_\_

承认人/

Approved by: \_\_\_\_\_

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Confirmed by: \_\_\_\_\_

日期/

Date: \_\_\_\_\_

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版本: A/1

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## CRYSTAL UNIT SPECIFICATIONS

## 一、电性能参数 ELECTRICAL PARAMETERS:

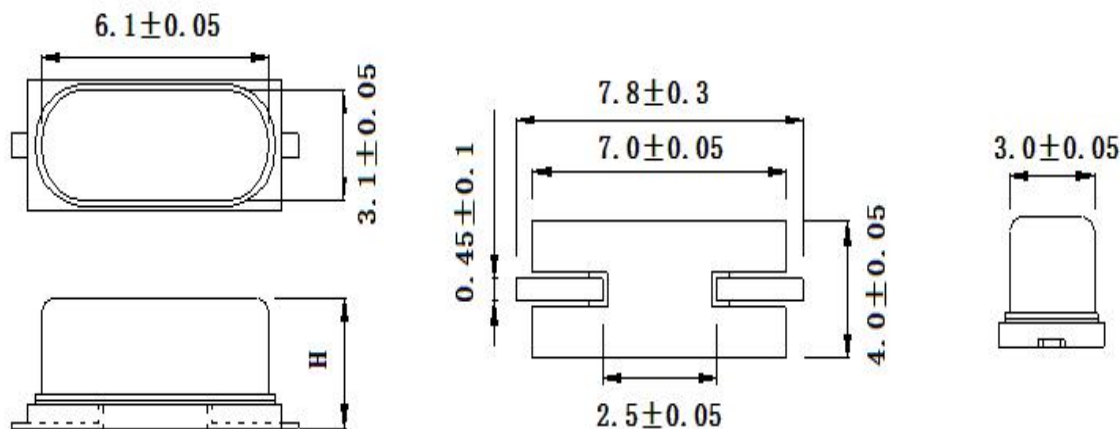
| No. | 特性 Characteristic                     | 范围 Limits                                  | 备注 Remark                                                                        |
|-----|---------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------|
| 1   | 产品型号<br>Ackage Type                   | SST-47SMD                                  |                                                                                  |
| 2   | 标称频率<br>Nominal Frequency             | 13.560MHz                                  |                                                                                  |
| 3   | 振动模式<br>Mode of Vibration             | AT—Fund（基频）                                |                                                                                  |
| 4   | 常温频差<br>Frequency Tolerance           | $\pm 10\text{ppm}$                         | $25 \pm 3^\circ\text{C}$ 测试<br>Measure at $25^\circ\text{C} \pm 3^\circ\text{C}$ |
| 5   | 工作温度范围<br>Operating Temperature Range | $-20^\circ\text{C} \sim +70^\circ\text{C}$ |                                                                                  |
| 6   | 频率稳定度<br>Frequency Stability          | $\pm 30\text{ppm}$                         |                                                                                  |
| 7   | 储存温度范围<br>Storage Temperature Range   | $-40^\circ\text{C} \sim +85^\circ\text{C}$ |                                                                                  |
| 8   | 负载电容<br>Load capacitance              | 12pF                                       |                                                                                  |
| 9   | 谐振电阻<br>Equivalent Series Resistance  | $50\ \Omega$ max                           |                                                                                  |
| 10  | 激励功率<br>Drive Level                   | $100\ \mu\text{W}$ max                     |                                                                                  |
| 11  | 绝缘电阻<br>Insulation Resistance         | $500\text{M}\ \Omega$                      | At $250\text{V}_{\text{DC}}$                                                     |
| 12  | 静电容<br>Shunt Capacitance              | 5pF max                                    |                                                                                  |
| 13  | 年老化率<br>Aging Per Year                | $\pm 5\text{ppm}$                          |                                                                                  |
| 14  |                                       |                                            |                                                                                  |
| 15  |                                       |                                            |                                                                                  |
| 16  |                                       |                                            |                                                                                  |
| 17  |                                       |                                            |                                                                                  |
| 18  |                                       |                                            |                                                                                  |

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二、可靠性试验 Reliability test

| No. | 测试项目<br>Item                     | 测试条件<br>Test Conditions                                                                                                                                                                                                                                                                                              | 判定标准<br>Basis of Verdict                                                        |
|-----|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1   | 跌落冲击<br>Drop                     | 75cm 高度自由下落到 3cm 厚度的硬质木板 3 次<br>3 Times Free Fall from 75cm height table to 3cm thickness hard wood board                                                                                                                                                                                                            | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 2   | 模拟回流焊<br>Reflow                  | $240^{\circ}\text{C} \leq T \leq 265^{\circ}\text{C}$ $t=60 \pm 30\text{s}$<br>$T=260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ $t=40 \pm 10\text{s}$<br>$T(\text{max}) = 265^{\circ}\text{C}$                                                                                                                          | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 3   | 可焊性<br>Solder                    | $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 焊锡槽浸润 $3 \pm 0.5$ 秒<br>Temperature: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$<br>Time: $3 \pm 0.5$ Seconds                                                                                                                                                             | 新锡覆盖率 $\geq 90\%$<br>the solder immersion surface $\geq 90\%$                   |
| 4   | 耐焊接热<br>Solder Heating           | $280^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 焊锡槽浸润 $10 \pm 1$ 秒<br>Temperature: $280^{\circ}\text{C} \pm 5^{\circ}\text{C}$<br>Time: $10 \pm 1$ Seconds                                                                                                                                                               | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 5   | 高温储存<br>High temperature storage | $100^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 烘箱中烘烤 $96 \pm 1$ 小时<br>Temperature: $100^{\circ}\text{C} \pm 5^{\circ}\text{C}$<br>Time: $96 \pm 1$ Hours                                                                                                                                                                | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 6   | 高温老化<br>High temperature ageing  | $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 之烘箱中烘烤 30 天<br>Temperature: $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , Time: 30days                                                                                                                                                                                     | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 7   | 低温储存<br>Low temperature storage  | $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 环境中保持 $96 \pm 1$ 小时<br>Temperature: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$<br>Time: $96 \pm 1$ Hours                                                                                                                                                                | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 8   | 恒温恒湿<br>Humidity                 | 在湿度为 90~95%, 温度为 $40 \pm 2^{\circ}\text{C}$ 环境中保持 96 小时<br>Temp: $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , Humidity: 90~95%<br>Times: 96 Hours                                                                                                                                                                    | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |
| 9   | 振动<br>Vibration                  | 频率: 10~50Hz, 幅度: 0.75mm<br>频率: 50Hz~500Hz, 加速度幅度: 98m/s <sup>2</sup><br>周期: 10~500~10Hz, 15min<br>振动方向: X、Y、Z<br>振动时间: 每个方向 2 小时<br>Frequency: 10~50Hz, Amplitude: 0.75mm<br>Frequency: 50~500Hz, Amplitude: 98m/s <sup>2</sup><br>Cycle time: 10~500~10H, 15min<br>Direction: X、Y、Z<br>Duration: 2 Hours /direction | $\Delta FL \leq \pm 5\text{ppm}$ ,<br>$\Delta R \leq 5\text{ohm or } \leq 10\%$ |

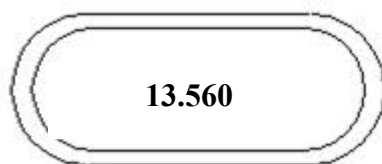
### 三、外形尺寸 Outline Dimensions (unit: mm)



| NO. | 规格       | H      |
|-----|----------|--------|
| 1.  | M49S-SMD | 2.3Max |
|     |          |        |

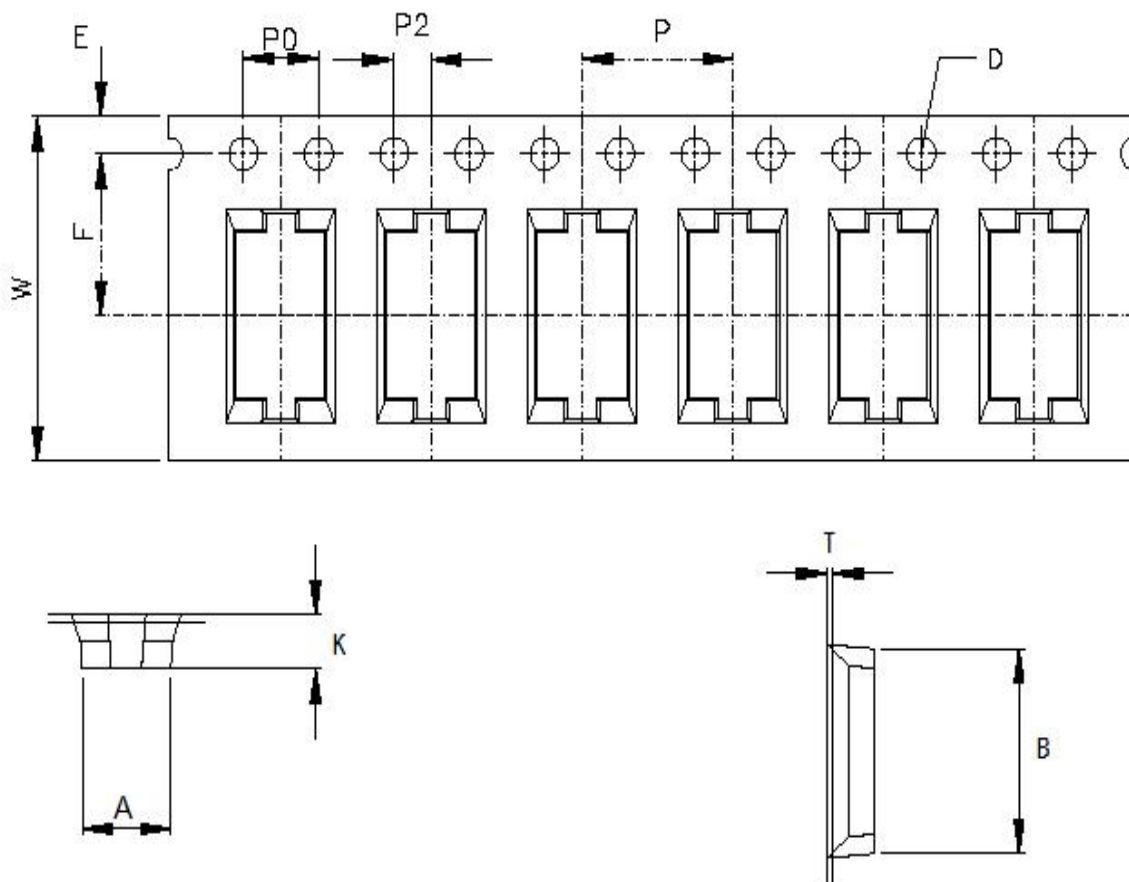
### 四、印字 Marking

当前字样:



## 五、包装方式 Packing

T/R: 3000pcs/ REEL



单位 units : mm:

| Model     | A       | B       | D    | E        | F       | P       | P0      | T        | W      |
|-----------|---------|---------|------|----------|---------|---------|---------|----------|--------|
| SST-47SMD | 4.7±0.1 | 9.5±0.1 | Φ1.5 | 1.75±0.1 | 7.5±0.1 | 8.0±0.1 | 4.0±0.1 | 0.3±0.05 | 16±0.3 |
|           |         |         |      |          |         |         |         |          |        |

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|        |      |      |      |      |      |      |      |      |
|--------|------|------|------|------|------|------|------|------|
| SPEC 1 | 12   | 16   | 24   | 32   | 44   | 56   | 72   | 88   |
| C1±1   | 330  | 330  | 330  | 330  | 330  | 330  | 330  | 330  |
| A±0.2  | 2.3  | 2.3  | 2.3  | 2.3  | 2.3  | 2.3  | 2.3  | 2.3  |
| B±0.2  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| H+2.0  | 12.5 | 16.5 | 24.5 | 32.5 | 44.5 | 56.5 | 72.5 | 88.5 |
| T±0.2  | 2.1  | 2.1  | 2.1  | 2.1  | 2.1  | 2.1  | 2.1  | 2.1  |
| D±0.5  | ∅100 | ∅100 | ∅100 | ∅100 | ∅100 | ∅100 | ∅100 | ∅100 |

