



规格书
SPECIFICATIONS

规格书编号/ID: M16910A
物料描述/
Product Description: 16M 9PF 10PPM
料号/
Part Number: S47SMD16.000M9PF10R30B3
制作人/
Approved by: 莫平会
审核人/
Checked by: 陈晓群
日期/ 盖章/
Date: 2022-11-14 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: _____

批准人/
Confirmed by: _____

日期/
Date: _____

盖章/
Stamp: _____



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

一、电性能参数 ELECTRICAL PARAMETERS:

| No. | 特性 Characteristic | 范围 Limits | 备注 Remark |
|-----|---------------------------------------|--------------|-------------------------------|
| 1 | 产品型号 Ackage Type | SST-M49SSMD | |
| 2 | 标称频率 Nominal Frequency | 16.000MHz | |
| 3 | 振动模式 Mode of Vibration | AT—Fund (基频) | |
| 4 | 常温频差 Frequency Tolerance | ±10ppm | 25±3℃ 测试 Measure at 25℃±3℃ |
| 5 | 工作温度范围 Operating Temperature Range | -20℃~+70℃ | |
| 6 | 频率稳定度 Frequency Stability | ±30ppm | |
| 7 | 储存温度范围 Storage Temperature Range | -40℃~+85℃ | |
| 8 | 负载电容 Load capacitance | 9pF | |
| 9 | 谐振电阻 Equivalent Series Resistance | 50 Ω max | |
| 10 | 激励功率 Drive Level | 100 μ W max | |
| 11 | 绝缘电阻 Insulation Resistance | 500M Ω | At 250V _{DC} |
| 12 | 静电容 Shunt Capacitance | 5pF max | |
| 13 | 年老化率 Aging Per Year | ±5ppm | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
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二、可靠性试验 Reliability test

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

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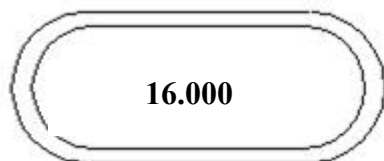
三、外形尺寸 Outline Dimensions (unit: mm)



| 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 | $\Phi 1.5$ | 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 |

