
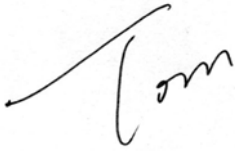
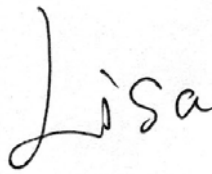


| | |
|------------------------|---------------------------------|
| Customer | |
| Production Name | SMD CRYSTAL SEAM 2.0*1.6 |
| Customer P/N | N/A |
| TROQ P/N | R924000078 |
| Revision | A |
| Print Date | 2021-7-26 |

| | | |
|---|---|---|
| Drawn | Checked | Approved |
|  |  |  |



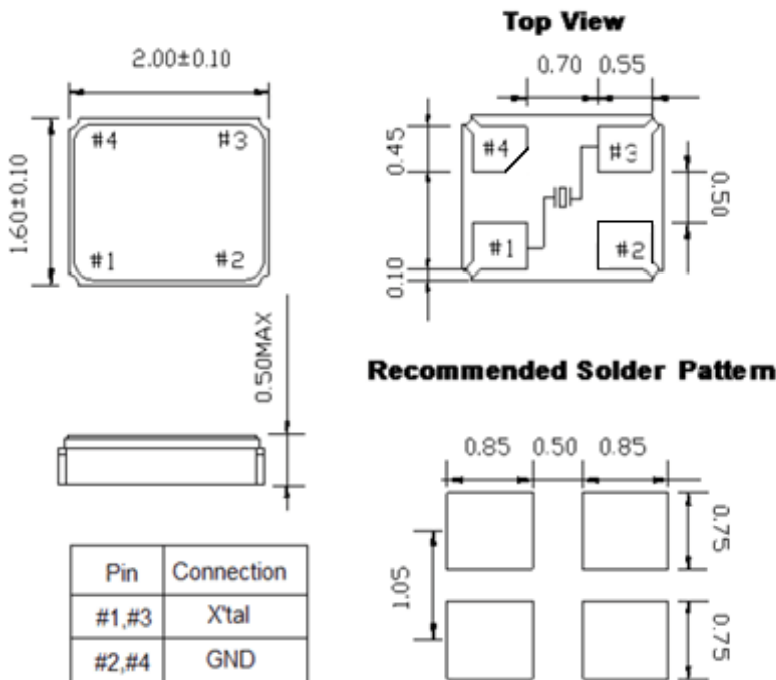
RoHS Compliant

Pb used in sealing glass material is exempt from EU directive

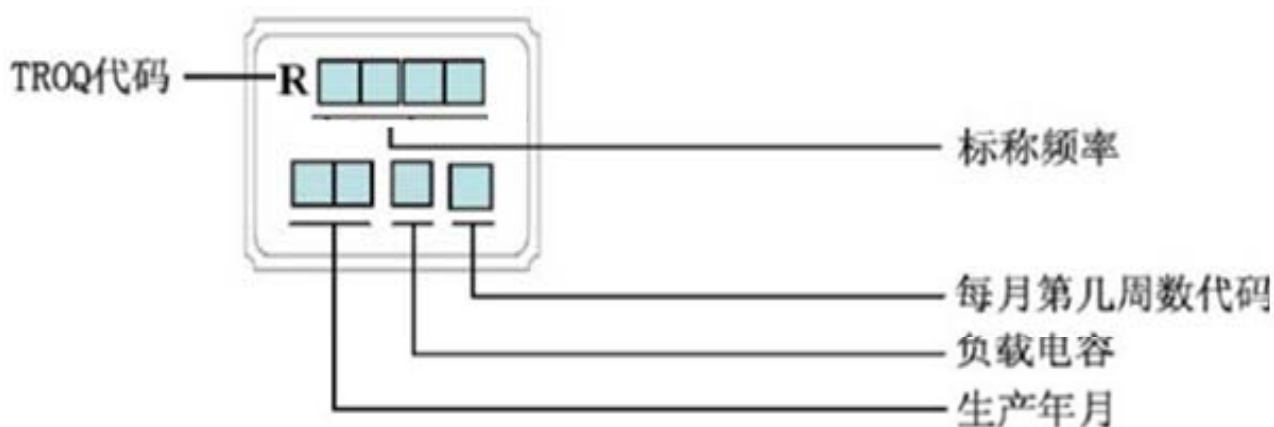
● ELECTRICAL PARAMETERS

| 谐振器产品技术指标 | Min | Max | Units |
|--|--------------|-----|--------------------|
| 1. Holder Type(型号规格) | SEAM 2.0*1.6 | | |
| 2. Mode of Oscillation (振动模式) | Fundamental | | |
| 3. Frequency (标称频率) | 24.000000 | | MHz |
| 4. Load Capacitance (CL) (负载电容) | 9 | | pF |
| 5. Shunt Capacitance (Co) (静态电容) | 0 | 5 | pF |
| 6. Equivalent Resistance (谐振电阻) | | 60 | Ω |
| 7. Frequency Tolerance at 25°C (调整频差) | -10 | 10 | ppm |
| 8. Stability over operation temperature (温度频差) | ± 10 | | ppm |
| 9. Insulation Resistance (at D.C. 10V) (绝缘电阻) | 500 | | M Ω |
| 10. Drive Level (激励功率) | 100 | | uw |
| 11. Operating Temperature Range (工作温度范围) | -20 | 70 | $^{\circ}\text{C}$ |
| 12. Storage Temperature Range (储存温度范围) | -40 | 85 | $^{\circ}\text{C}$ |
| 13. Aging (老化率) | ± 3 | | ppm/year |
| 14. Other(其他) | 0 | | |

OUTLINE DIMENSIONS(UNIT:mm) 外形尺寸 (单位: mm)



● Marking (标记)



● 负载电容

| | | | | | | | |
|-----------|-----|----|----|------|----|----|----|
| 负载电容 (CL) | 5.7 | 10 | 12 | 12.5 | 15 | 16 | 18 |
| 代码 | A | B | C | D | E | F | G |
| 负载电容 (CL) | 20 | 22 | 27 | 30 | 32 | ∞ | 8 |
| 代码 | H | J | K | M | N | S | R |
| 负载电容 (CL) | 7 | 9 | 13 | 7.5 | | | 其他 |
| 代码 | T | V | W | X | Y | Z | P |

● 生产年月 (年份为12年一循环)

| | | | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|----|----|----|
| 月份 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 代码 | A | B | C | D | E | F | G | H | K | M | N | P |

| | | | | | | | | | | | | |
|----|------|------|------|------|------|------|------|------|------|------|------|------|
| 年份 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
| 代码 | a | b | c | d | e | f | g | h | k | m | n | p |



→ 说明: 标称频率 25.000MHZ
 负载电容20PF
 2020年1月份第一周 TROQ制造



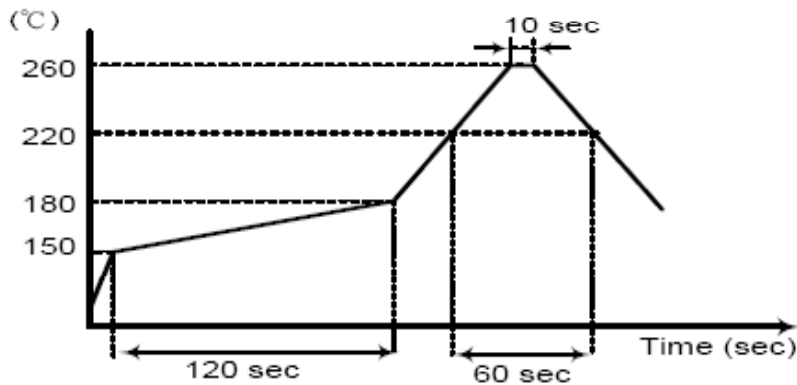
TROQ P/N: R924000078 REV: A

● SUGGESTED REFLOW PROFILE (回流焊曲线图)

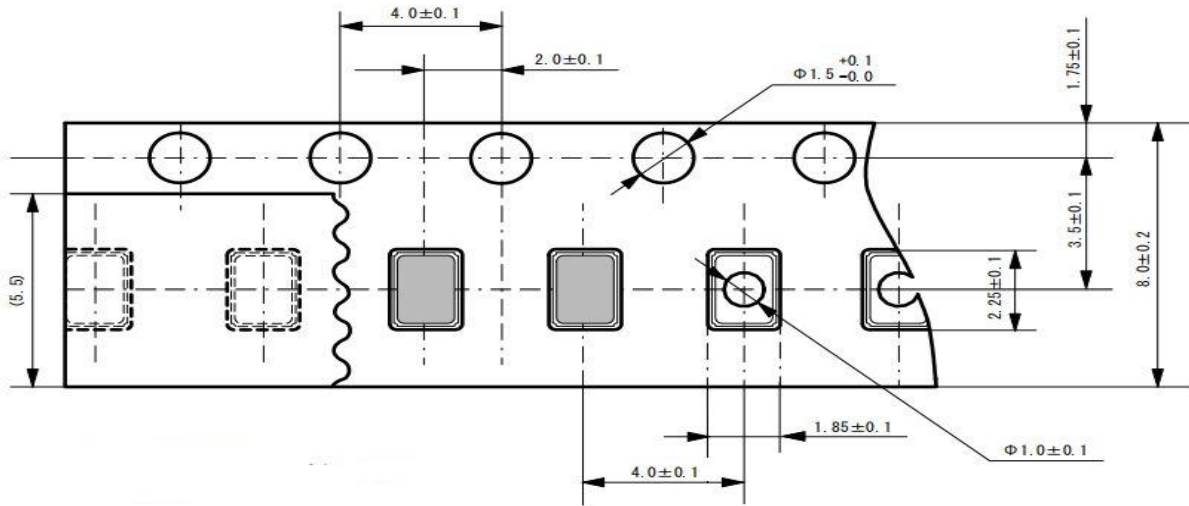
Total time:200sec.Max. (总时间: 200秒 最大)

Solder melting point:220°C (熔点220 °C)

| Profiles Feature (特性) | | Pb-Free Assembly |
|---|---------------|------------------|
| Average Ramp-up Rate(Ts max to Tp) | 平均升温速度 | 3°C/second Max |
| Preheat | 预热 | |
| ■ Temperature Min (Ts min) | 最低温度 | 125°C |
| ■ Temperature Max (Ts max) | 最高温度 | 200°C |
| ■ Time (ts min to ts max) | 从最低到最高时间 | (60~180) seconds |
| Time maintained above | 维持上述时间 | |
| ■ Temperature(T1) | 温度 | 217°C |
| ■ Time(tp) | 时间 | (60~150) seconds |
| Peak/Classification Temperature(Tp) | 最高点温度 | 260 °C |
| Time within 5°C of actual Peak Temperature(tp) | 高温维持时间 | (20~40) seconds |
| Ramp-down rate | 降温速度 | 6°C/second max |
| Time 25°C to Peak Temperature | 从25°C到最高温度的时间 | 8 minutes max |
| Suggest reflow times | 建议 reflow次数 | 3 Times max |

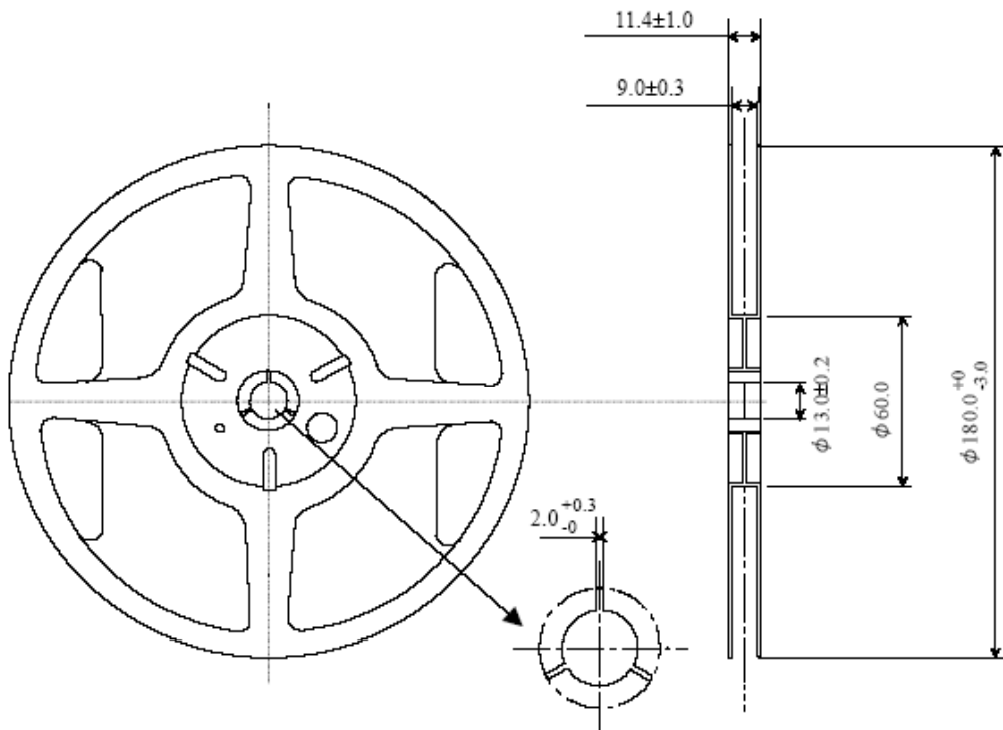


編帶尺寸圖
Taping Dimensions



8.3. Reel dimension & Outline drawing

Material of the Reel : PS



● RELIABILITY SPECIFICATIONS (信赖度试验)

| No | Test Item (测试项目) | Test Conditions (测试条件) | Reference (参考) |
|----|---|--|--|
| 1 | High Temperature High Humidity Storage (高温、高湿、储存) | Temperature: 85°C±3°C 温度: 85°C±3°C Relative Humidity: 85%RH 相对湿度: 85%RH Time: 96 Hours 时间: 96小时 | JIS C5023 |
| 2 | High Temperature Storage (高温储存) | Temperature: 125°C±3°C 温度: 125°C±3°C Time: 96 Hours 时间: 96小时 | MIL-STD-883E Method 1005.8 |
| 3 | Low Temperature Storage (低温储存) | Temperature: -40°C±3°C 温度: -40°C±3°C Time: 96Hours 时间: 96小时 | MIL-STD-883E Method 1013 |
| 4 | Thermal Shock (温度冲击) | Temperature1: -55°C±5°C 温度1: -55°C±5°C Temperature2: 85°C±5°C 温度2: 85°C±5°C Temperature change between T1 and T2 5 min T1和T2温度在5分钟内改变 10cycles maintain T1 and T2 for 30 minutes each mone cycle 每次循环30分钟共10次 | MIL-STD-202F Method 107 Condition A |
| 5 | RESISTANCE TO SOLDER HEAT (耐焊接热) | Solder Temperature: 260°C±5°C 焊槽温度: 260°C±5°C Time: 10±1 Seconds 时间: 10±1秒 | MIL-STD-202F Method 210E |
| 6 | Solderability(可焊性) | The solder pot temperature is 245±5°C , dwell time 5±0.5sec 245±5°C焊锡槽浸润5±0.5秒 | J-STD-002B |
| 7 | Drop Test (落下试验) | 3 Times Free Fall from 75cm height table to 3cm thickness hard wood board 从75cm高度3次跌落到3cm厚硬质木板上 | JIS C6701 |
| 8 | MECHANICAL SHOCK (机械冲击) | Half sine wave, 1000 G 半正弦波, 加速度1000G 3 Times for all 3 directions X、Y、Z 三个相互垂直方向各三次 | MIL-STD-202F Method 213B |
| 9 | Vibration (机械振动) | Frequency Range: 10Hz~55Hz 频率范围: 10Hz~55Hz Amplitude: 0.75mm 振幅: 0.75mm 2 Hours in each direction, total 6 Hours X、Y、Z 三个相互垂直方向各振动2小时 | MIL-STD-883E Method 2007.3 |
| 10 | Leakage Test (气密性) | Take measurements with a helium Leakage detector 氦质检漏 Leakage Rate ≤ 1×10 ⁻³ Pa cm ³ /s 漏率 ≤ 1×10 ⁻³ Pa cm ³ /s | MIL-STD-883E |

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