

雅晶鑫電子

Shenzhen Yajingxin Electron Co.,Ltd

|                 |                          |
|-----------------|--------------------------|
| Customer        |                          |
| Production Name | SMD CRYSTAL SEAM 3.2*2.5 |
| Customer P/N    | N/A                      |
| P/N             | TX322513. 56M4LBDE2T     |
| Revision        | A                        |
| Print Date      | 2022-12-06               |

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

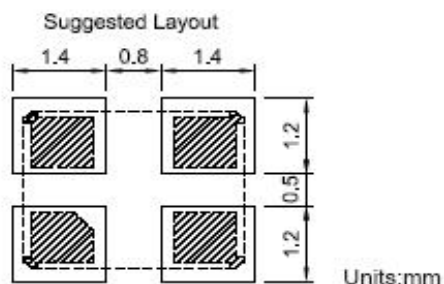
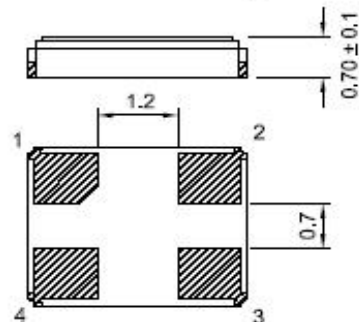
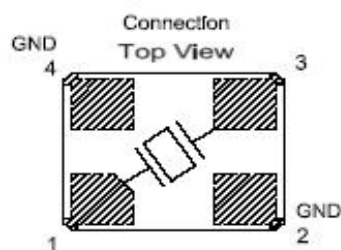
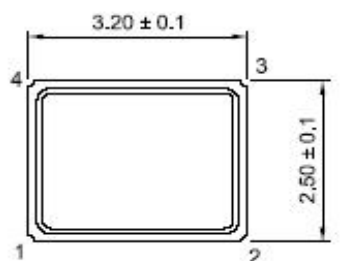


RoHS Compliant

## ● ELECTRICAL PARAMETERS

| 谐振器产品技术指标                                    |     | Min                     | Max | Units      |
|----------------------------------------------|-----|-------------------------|-----|------------|
| 1.Holder Type(型号规格)                          |     | SEAM 3.2*2.5            |     |            |
| 2.Mode of Oscillation（振动模式）                  |     | Fundamental             |     |            |
| 3. Frequency（标称频率）                           |     | 13.560000               |     | MHz        |
| 4.Load Capacitance (CL)（负载电容）                |     | 20                      |     | pF         |
| 5.Drive Level（激励功率）                          |     | 100                     |     | uw         |
| 6.Equivalent Resistance（谐振电阻）                |     |                         | 55  | $\Omega$   |
| 7.Shunt Capacitance (Co)（静态电容）               |     | 0                       | 5   | pF         |
| 8.Motional Capacitance (C1)（动态电容）            |     | N/A                     |     | fF         |
| 9.Frequency Tolerance at 25℃（调整频差）           |     | -10                     | 10  | ppm        |
| 10.Stability over operation temperance（温度频差） |     | $\pm 30$                |     | ppm        |
| 11.Insulation Resistance (at DC 100V)（绝缘电阻）  |     | 500M $\Omega$ Min @100V |     | M $\Omega$ |
| 12.Operating Temperature Range（工作温度范围）       |     | -30                     | 85  | ℃          |
| 13. Storage Temperature Range（储存温度范围）        |     | -40                     | 85  | ℃          |
| 14. Aging（老化率）                               |     | $\pm 5$                 |     | ppm/year   |
| 15. DLD2                                     | N/A |                         | N/A | $\Omega$   |
| 16. FLD2                                     |     |                         | N/A | ppm        |
| 17. RLD2                                     |     |                         | N/A | $\Omega$   |
| 18. SPDB                                     | N/A |                         | N/A | db         |
| 19. Other(其它)                                |     | N/A                     |     |            |

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



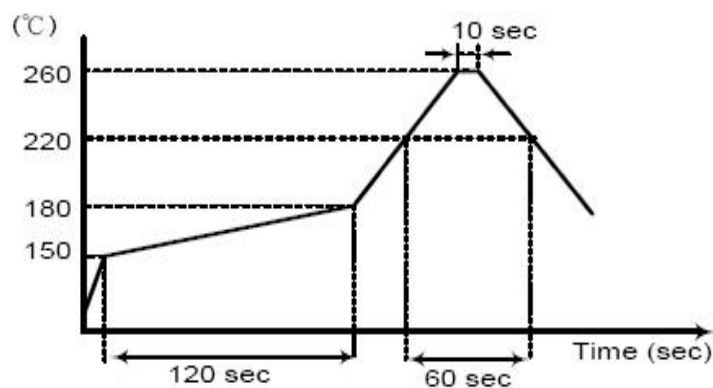
Units:mm

## ● SUGGESTED REFLOW PROFILE (回流焊曲线图)

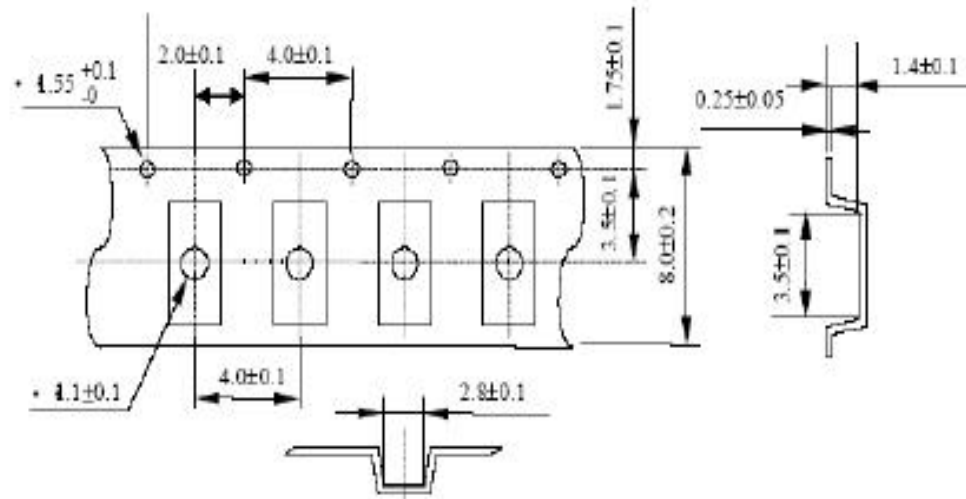
Total time:200sec.Max. (总时间: 200秒 最大)

Solder melting point:220℃ (熔点220 ℃)

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



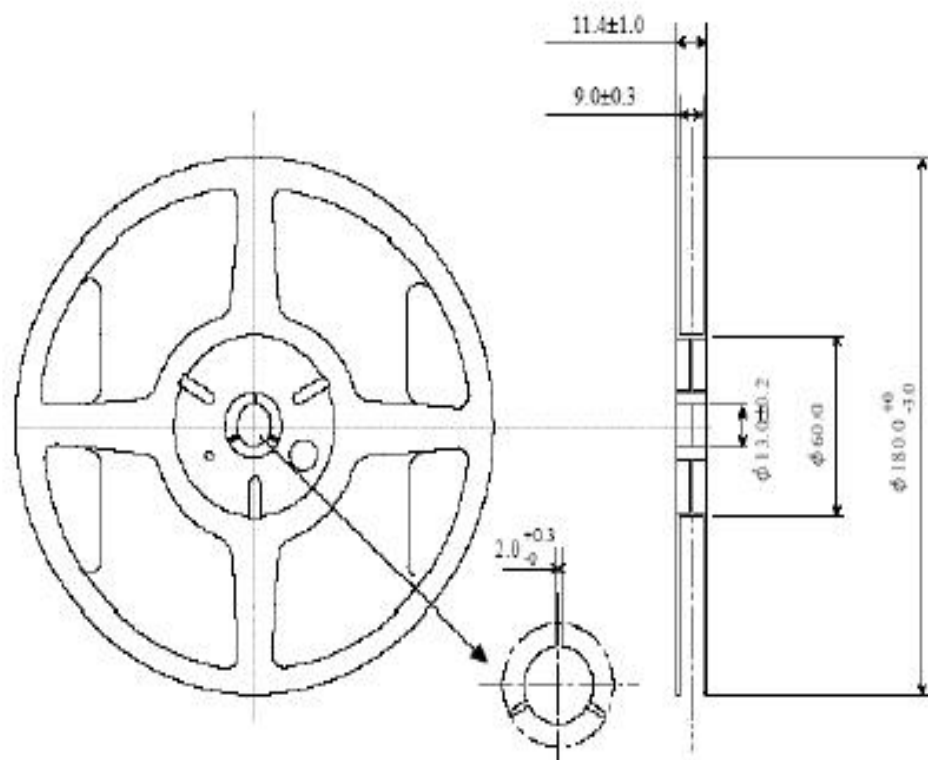
## ●● PACKING (包裝) 3Kpcs/REEL



[Size in mm]

## 8.3. Reel dimension &amp; 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<br>High Humidity<br>Storage<br>(高温、高湿、储存) | Temperature: 85℃±3℃<br>温度: 85℃±3℃<br>Relative Humidity: 85%RH<br>相对湿度: 85%RH<br>Time: 96 Hours<br>时间: 96小时                                                                                                                  | JIS C5023                              |
| 2  | High Temperature<br>Storage<br>(高温<br>储存)                  | Temperature: 125℃±3℃<br>温度: 125℃±3℃<br>Time: 96 Hours<br>时间: 96小时                                                                                                                                                           | MIL-STD-883E<br>Method 1005.8          |
| 3  | Low Temperature<br>Storage<br>(低温储存)                       | Temperature: -40℃±3℃<br>温度: -40℃±3℃<br>Time: 96 Hours<br>时间: 96小时                                                                                                                                                           | MIL-STD-883E<br>Method 1013            |
| 4  | Thermal Shock<br>(温度冲击)                                    | Temperature 1: -55℃±5℃<br>温度 1: -55℃±5℃<br>Temperature 2: 85℃±5℃<br>温度 2: 85℃±5℃<br>Temperature change between T1 and T2 5 min<br>T1和T2温度在5分钟内改变<br>10 cycles maintain T1 and T2 for 30 minutes each moment<br>每次循环30分钟共10次 | MIL-STD-202F<br>Method 107 Condition A |
| 5  | RESISTANCE TO<br>SOLDER HEAT<br>(耐焊接热)                     | Solder Temperature: 260℃±5℃<br>焊槽温度: 260℃±5℃<br>Time: 10±1 Seconds<br>时间: 10±1秒                                                                                                                                             | MIL-STD-202F<br>Method 210E            |
| 6  | Solderability(可焊性)                                         | The solder pot temperature is 245±5℃, dwell time 245±5℃<br>焊锡槽浸润 245±5℃ 5±0.5秒                                                                                                                                              | J-STD-002B                             |
| 7  | Drop Test<br>(落下试验)                                        | 3 Times Free Fall from 75cm height table to 3cm thickness hard wood board<br>从75cm高度3次跌落到3cm厚硬质木板上                                                                                                                          | JIS C6701                              |
| 8  | MECHANICAL<br>SHOCK<br>(机械冲击)                              | Half sine wave, 1000 G<br>半正弦波, 加速度 1000G<br>3 Times for all 3 directions<br>X、Y、Z 三个相互垂直方向各三次                                                                                                                              | MIL-STD-202F<br>Method 213B            |
| 9  | Vibration<br>(机械振动)                                        | Frequency Range: 10Hz~55Hz<br>频率范围: 10Hz~55Hz<br>Amplitude: 0.75mm<br>振幅: 0.75mm<br>2 Hours in each direction, total 6 Hours<br>X、Y、Z 三个相互垂直方向各振动2小时                                                                        | MIL-STD-883E<br>Method 2007.3          |
| 10 | Leakage Test<br>(气密性)                                      | Take measurements with a helium<br>Leakage detector<br>氦质检漏<br>Leakage Rate ≤ 1×10 <sup>-3</sup> Pa cm <sup>3</sup> /s<br>漏率 ≤ 1×10 <sup>-3</sup> Pa cm <sup>3</sup> /s                                                     | MIL-STD-883E                           |