



# 深圳市凯越翔电子有限公司

## 石英谐振器规格书

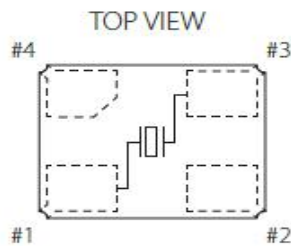
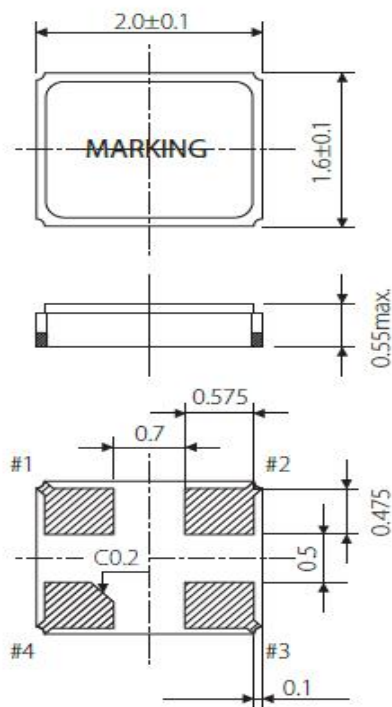
|         |                |
|---------|----------------|
| 产品名称:   | 石英晶振谐振器        |
| 产品型号:   | 2016/24.000MHZ |
| 产品参数:   | 8PF/±10PPM     |
| 原厂型号:   | K2B240000810   |
| 凯越翔技术部: | 董宗全            |

### 客 户 确 认 印 栏

|         |           |
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| 年 月 日   | 年 月 日     |

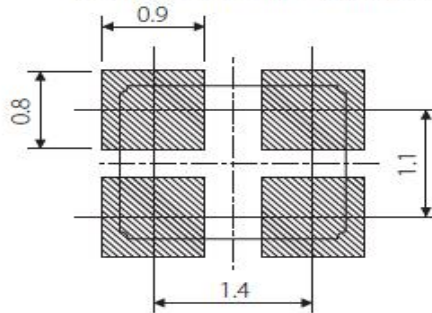
本规格章程连同本页合共5 页

- |                                                |                                                                   |
|------------------------------------------------|-------------------------------------------------------------------|
| 1. Frequency:                                  | <b>24.000 MHZ</b>                                                 |
| 2. Holder Type:                                | SMD2.0*1.6                                                        |
| 3. Frequency Tolerance:                        | $\pm 10\text{ppm}$ at $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$  |
| 4. Equivalent Series Resistance:               | <b>40 <math>\Omega</math> Max</b>                                 |
| 5. Storage Temperature Range:                  | $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$                    |
| 6. Operating Temperature Range:                | $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$                    |
| 7. Frequency Characteristics Over Temperature: | $\pm 20\text{ppm}$ $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ |
| 8. Load Capacitance (CL):                      | 8 PF                                                              |
| 9. Drive Level:                                | 100 $\mu$ W                                                       |
| 10. Shunt Capacitance:                         | 5PF MAX                                                           |
| 11. Insulation Resistance:                     | $\geq 500\text{M}\Omega$ Min at 100 V                             |
| 12. Mode Of Oscillation:                       | Fundamental                                                       |
| 13. Aging:                                     | $\pm 3\text{ppm/Year}$                                            |
| Marking description:                           | KYX24.000                                                         |
| 14. Dimensions(mm):                            |                                                                   |

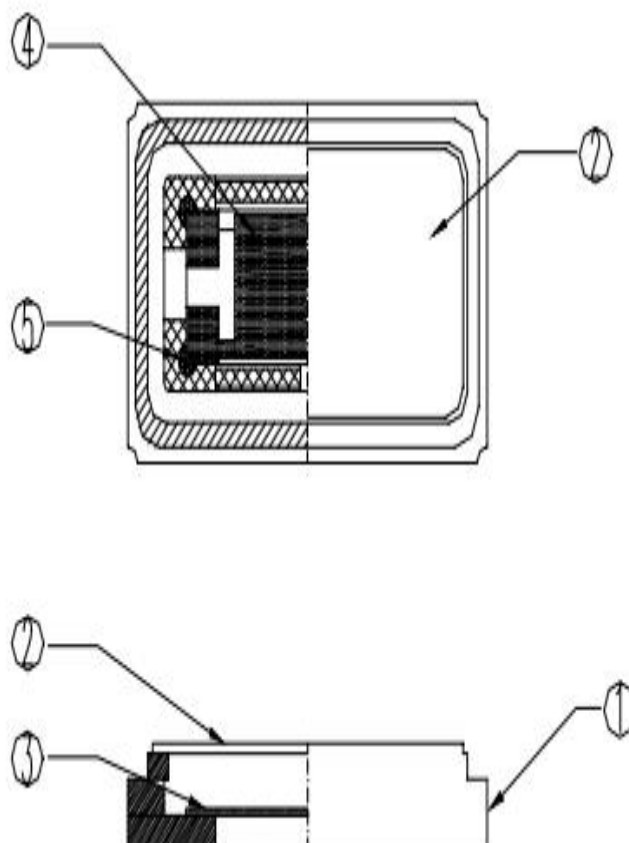


• #1, #3 : Crystal terminal / #2, #4 : Connected to cover  
(Please connect it with GND.)

Example of a Terminal Land Pattern



## 16. Structure Illustration



| PART NAME |       | MATERIAL | PART NAME |           | MATERIAL    |
|-----------|-------|----------|-----------|-----------|-------------|
| 1.        | BASE  | CERAMIC  | 4.        | ELECTRODE | Metal       |
| 2.        | LID   | Co       | 5.        | ADHESMES  | SILVER GLUE |
| 3.        | BLANK | QUARTZ   |           |           |             |

## Reliability Testing 可靠性测试项目介绍

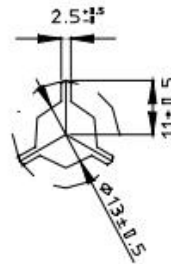
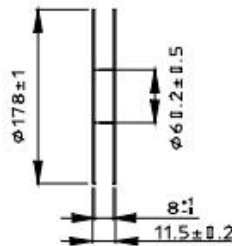
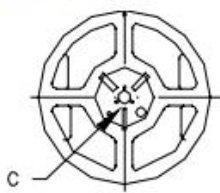
| 项目                          | 验条件及要求                                                                                                                                                                                                                                                                                                                                                             | 要求                                      |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Vibration<br>振动             | Endurance condition by a frequency sweep shall be made. The entire frequency range from 10HZ to 50HZ and return to 10HZ, shall be transverseb in 1min. Amplitude(total excursion):1.5mm this motion shall be applied for a period of 2h each of 3 mutually perpendicular axes(a total of 6h)<br>振动频率: 从 10HZ 到 55HZ, 再回到 10HZ 1 倍频程/min 幅度为 1.5mm 3 个相互垂直的方向各 2 小时 | (1). FL: +/ -10ppm<br>(2). Rr: +/ -10 Ω |
| Drop<br>跌落                  | Form 70cm height 3 times on 3cm hard wooden floor<br>从 70cm 高处跌落到 3cm 厚的硬质木板上, 重复 3 次                                                                                                                                                                                                                                                                              |                                         |
| Shock<br>冲击                 | Peak acceleration: 981m/s <sup>2</sup> duration of the pulse :6ms three successive shocks shall be applied in both direction of 3 mutually perpendicular axes(a total of 18 shocks)<br>加速度: 981m/s <sup>2</sup> 时间: 6ms 作用在 3 个相互垂直的方向                                                                                                                             | (1). FL: +/ -10ppm<br>(2). Rr: +/ -10 Ω |
| Damp heat, constant<br>恒定湿热 | The unit shall be stored at a temperature of 40℃ ± 2℃ with relative humidity of 90% to 95% for 48h, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>在温度: 40℃ ± 2℃、湿度: 90% to 95% 条件下存放 48 小时, 然后在标准大气压下放置 1~2 小时后测试                                                                               |                                         |
| Cold<br>低温存储                | The unit shall be stored at a temperature of -40℃ ± 5℃ for 48h, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>在 -40℃ ± 5℃ 下存放 48 小时, 然后在标准大气压下放置 1~2 小时后测试                                                                                                                                      |                                         |
| Dry heat<br>高温存储            | The unit shall be stored at a temperature of 100℃ ± 5℃ for 24h, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>100℃ ± 5℃ 下存放 24 小时, 然后在标准大气压下放置 1~2 小时后测试                                                                                                                                        |                                         |
| Aging<br>老化                 | The unit shall be stored at a temperature of 85℃ ± 5℃ for 7d then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>85℃ ± 5℃ 下放置 7 天, 然后在标准大气压下放置 1~2 小时后测试                                                                                                                                              |                                         |
| Temperature<br>cycling      | The unit shall be subjected to 5 successive change of temperature cycles, each as show in table below, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made<br>在下表给定温度和时间参数的条件下循环 5 次, 标准大气压下放置 1~2 小时后测试                                                                                                  |                                         |

|      |   |                              |                     |
|------|---|------------------------------|---------------------|
| 温度循环 |   | Temperature<br>温度            | Duration<br>放置时间    |
|      | 1 | -40℃±3℃                      | 30min (30 分钟)       |
|      | 2 | Standard conditions<br>标准大气压 | Within 30s<br>30 秒内 |
|      | 3 | 100℃±3℃                      | 30min (30 分钟)       |
|      | 4 | Standard conditions<br>标准大气压 | Within 30s<br>30 秒内 |

|                                      |                                                                                                                                                                                                                                                 |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resistance to soldering heat<br>耐焊接热 | <p>250℃<br/>217℃<br/>200℃<br/>150℃<br/>25℃</p> <p>Peak 10s Max</p> <p>40 to 90s</p> <p>-6 °C /s Max cooling</p> <p>+4 °C /s Max preheating</p> <p>60 to 120s</p> <p>25 °C to peak: 360s</p> <p>TIME (Seconds) Total: 420s</p> <p>使用回流焊方法见上图</p> |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

2. REEL : 3000 PCS



|    |     |    |     |    |     |
|----|-----|----|-----|----|-----|
| 拟制 | 成望生 | 审核 | 董宗全 | 批准 | 谢为亮 |
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