



## 深圳市凯越翔电子有限公司

### 石英谐振器规格书

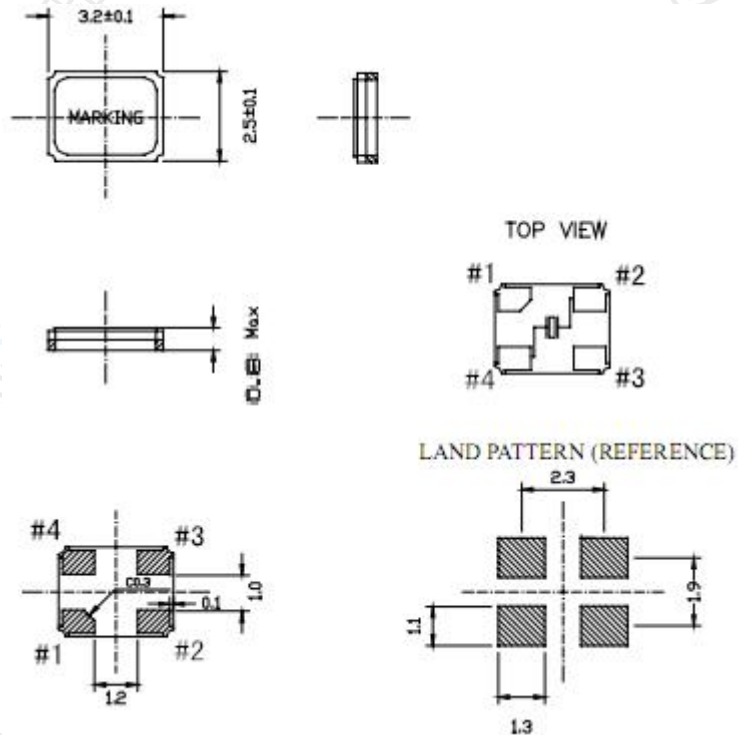
|         |                |
|---------|----------------|
| 产品名称:   | 石英晶振谐振器        |
| 产品型号:   | 3225/24.000MHZ |
| 产品参数:   | 10PF/±10ppm    |
| 原厂型号:   | K3A240001010   |
| 凯越翔技术部: | 董宗全            |

### 客户确认印栏

|       |       |
|-------|-------|
| 认证印章  | 负责人印章 |
| 年 月 日 | 年 月 日 |

本规格章程连同本页合共6页

1. Frequency: 24.000 MHZ
2. Holder Type: SMD3.2\*2.5
3. Frequency Tolerance:  $\pm 10\text{ppm}$  at  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
4. Equivalent Series Resistance:  $40\ \Omega$  Max
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 Temperatnre:  $\pm 20\text{ppm}$   $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
8. Load Capacitance (CL): 10 PF
9. Drive Level:  $100\ \mu\text{W}$
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. Dimensiors(mm):



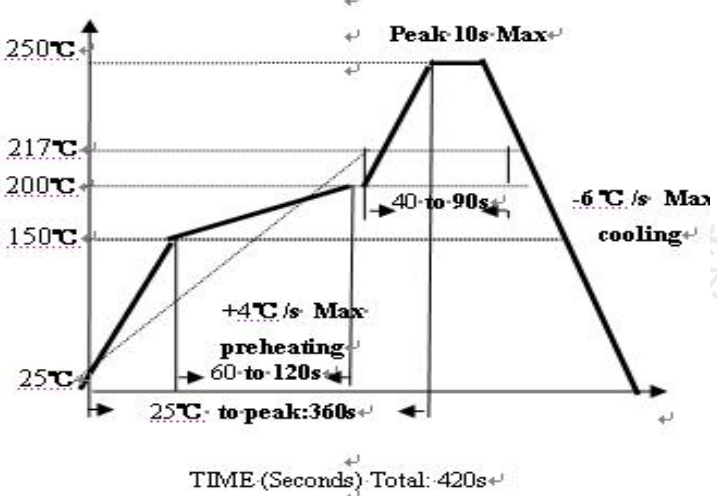
## 16. Structure Illustration

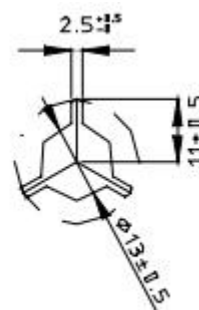
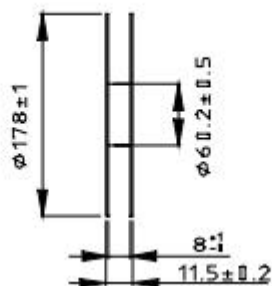


| PART NAME |       | MATERIAL | PART NAME |           | MATERIAL    |
|-----------|-------|----------|-----------|-----------|-------------|
| 1.        | BASE  | CERAMIC  | 4.        | ELECTRODE | Metal       |
| 2.        | LID   | Co       | 5.        | ADHESMES  | SILVER GLUE |
| 3.        | BLANK | 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: $\pm 10$ ppm<br>(2). Rr: $\pm 10 \Omega$ |
| 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: $981m/s^2$ 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: $981m/s^2$ 时间: 6ms 作用在 3 个相互垂直的方向                                                                                                                                               | (1). FL: $\pm 10$ ppm<br>(2). Rr: $\pm 10 \Omega$ |
| Damp heat, constant<br>恒定湿热    | The unit shall be stored at a temperature of $40^{\circ}C \pm 2^{\circ}C$ with relative humidity of 90%to95% for 48h, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made. 在温度: $40^{\circ}C \pm 2^{\circ}C$ 、湿度: 90%to95%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 $-40^{\circ}C \pm 5^{\circ}C$ for 48h, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>在 $-40^{\circ}C \pm 5^{\circ}C$ 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 $100^{\circ}C \pm 5^{\circ}C$ for 24h, then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>$100^{\circ}C \pm 5^{\circ}C$ 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 $85^{\circ}C \pm 5^{\circ}C$ for 7d then it shall be subjected to standard atmospheric conditions for 1~2h after which measurement shall be made.<br>$85^{\circ}C \pm 5^{\circ}C$ 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<br>温度循环 | 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 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                                                                                                     |                                                   |

|                                      |                                                                                                                                                                                                                                                                                                                          |                                          |                     |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------|
|                                      | Temperature<br>温度                                                                                                                                                                                                                                                                                                        |                                          | Duration<br>放置时间    |
|                                      | 1                                                                                                                                                                                                                                                                                                                        | -40℃±3℃                                  | 30min (30 分钟)       |
|                                      | 2                                                                                                                                                                                                                                                                                                                        | Standard atmospheric conditions<br>标准大气压 | Within 30s<br>30 秒内 |
|                                      | 3                                                                                                                                                                                                                                                                                                                        | 100℃±3℃                                  | 30min (30 分钟)       |
|                                      | 4                                                                                                                                                                                                                                                                                                                        | Standard atmospheric 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>+4℃/s Max preheating<br/>60 to 120s</p> <p>40 to 90s</p> <p>-6℃/s Max cooling</p> <p>25℃ to peak: 360s</p> <p>TIME (Seconds) Total: 420s</p> <p>使用回流焊方法见上图</p> |                                          |                     |
|                                      |                                                                                                                                                                                                                                                                                                                          |                                          |                     |



|    |     |     |     |     |     |
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| 拟制 | 成望生 | 审 核 | 董宗全 | 批 准 | 谢为亮 |
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