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## Victorlands Technical Specification

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| <b>Product name</b>        | <b>Quartz crystal unit</b> |
| <b>Model</b>               | <b>5032/24.000MHz</b>      |
| <b>Product code</b>        | <b>K5A24000S0R2B2</b>      |
| <b>Product parameters</b>  | <b>20PF/±20PPM</b>         |
| <b>Product reliability</b> | <b>P. 2-4</b>              |
| <b>Packing form</b>        | <b>P. 5</b>                |



## 1. General item

Nominal frequency: **24.000MHz**

Vibration mode: AT Fund

Operation temperature range: **-40°C~+85°C**

Storage temperature rang: **-40°C~+85°C**

Test machine: **S&A 250B**

Drive level: **100  $\mu$ W**

Load capacitance: **20pF**

## 2. Electrical characteristics

Condition: **25 $\pm$ 3°C** Relatively humidity  $\leq$  **60%**

2.1 Frequency tolerance:  **$\pm$ 20ppm**

2.2 Equivalent resistance:  $\leq$  **40  $\Omega$**

2.3 Temperature characteristics:  **$\pm$ 20ppm**

2.4 Shunt capacitance:  $\leq$  **7pF**

2.5 Insulation resistance:  $\geq$  **500M  $\Omega$  / 100 $\pm$ 15V<sub>DC</sub>**

2.6 Aging characteristics:  **$\pm$ 5ppm/year**

## 3. Reliability specification

### 3.1 Drop characteristics

Condition: height 50cm, 3 times, test after 1 hour

Equipment: S&A250B, thickness 3cm hard wood

Standard: frequency change:  $\leq \pm$ 5ppm, Rr as specification

### 3.2 Shake characteristics

Condition: shake frequency 10~55Hz, cyc1~2 minutes, swing

1.5mm, direction x/y/z, all 30 minutes. Test after 1 hour



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Equipment: S&A250B, test machine

Standard: frequency change:  $\leq \pm 5\text{ppm}$ , Rr as specification

### 3.3 Airproof characteristics

Condition: put crystal into the pressure cabin with alcohol, keep pressure 0.4-0.5mpa 10 minutes, then take out and blow for 5 minutes

Equipment: IR machine

Standard:  $IR \geq 500 \text{ m}\Omega$

### 3.4 Weld characteristics

Condition:  $235 \pm 5^\circ\text{C}$ 、3 seconds

Equipment: test machine

Standard: 90% adhibit tin ok

### 3.5 Humidity characteristics

Condition:  $40^\circ\text{C} \pm 2^\circ\text{C}$ , humidity 90-95%, 250 hours.

Equipment: S&A250B, test cabin

Standard: frequency change:  $\leq \pm 5\text{ppm}$ , Rr as specification

### 3.6 Low temperature characteristics

Condition:  $-30^\circ\text{C} \pm 2^\circ\text{C}$ , after 250 hours, put in room temperature 1 hour

Equipment: S&A250B, test machine

Standard: frequency change:  $\leq \pm 5\text{ppm}$ , Rr as specification

### 3.7 High temperature characteristics

Condition:  $85^\circ\text{C} \pm 2^\circ\text{C}$ , after 250 hours, put in room temperature 1 hour

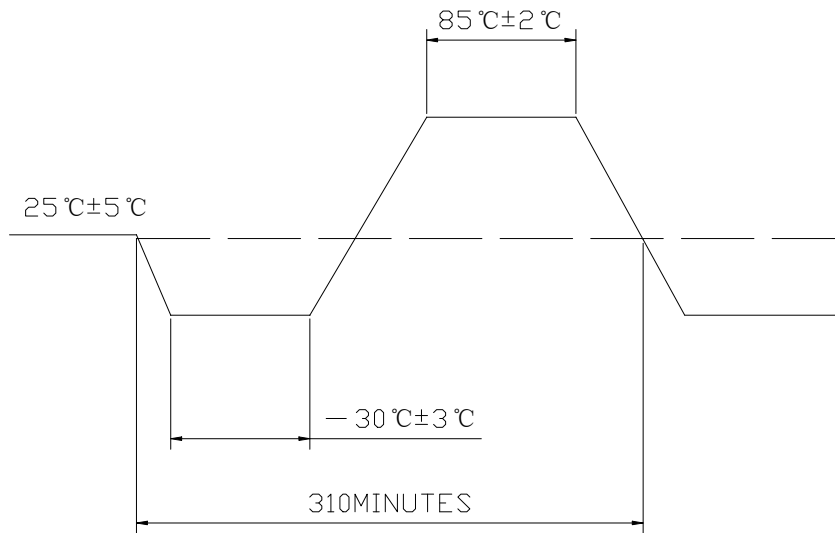
Equipment: S&A250B, test machine



Standard: frequency change:  $\leq \pm 5\text{ppm}$ , Rr as specification

### 3.8 Temperature cycling

Condition:



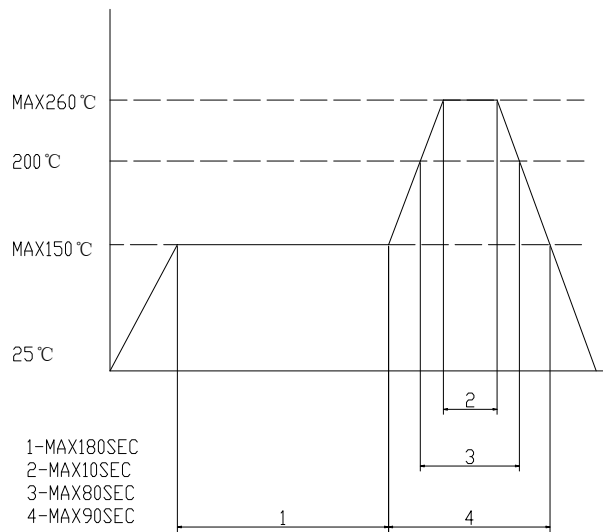
AFTER TEMPERATURE CYCLING

Equipment: S&A250B, test machine.

Standard: frequency change:  $\leq \pm 5\text{ppm}$ , Rr as specification

### 3.9 Refluence examination

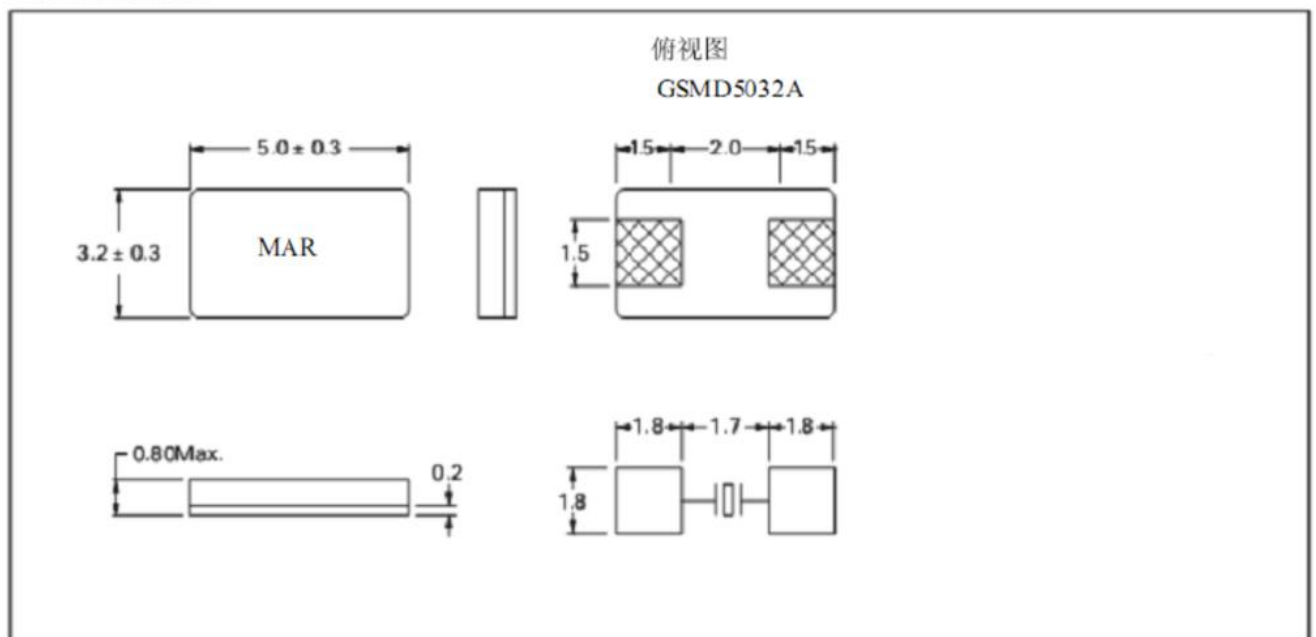
Condition:



Equipment: S&A250B, test machine

Standard: frequency change:  $\leq \pm 10\text{ppm}$ , Rr as specification

External dimensions



Dimension: mm