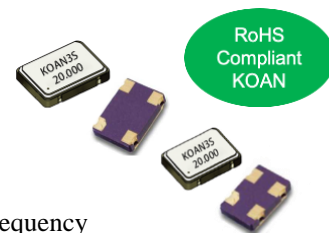


## Clock Oscillator (时钟振荡器) - KJ25/KJ32/KJ50/KJ70

### Feature 特征

Low phase noise 48fsec (RMS 12KHz~20MHz) @ 3.3V 低相位噪声



### Applications 应用

Computer control, railway measurement and control, intelligent systems, instrument, frequency sources 电脑控制, 铁路测控, 智能系统, 仪器仪表, 频率源等

### General Specifications 规格参考

| PARAMETER                   | 性能参数    | KJ25 KJ32 KJ50 KJ70                         |
|-----------------------------|---------|---|
| Frequency Range             | 频率范围    | 20MHz ~ 50MHz                               |
| Supply Voltage              | 供给电压    | +1.8V/2.5V/3.3V (±10%)                      |
| Output Logic                | 输出波形    | CMOS  |
| Frequency Tolerance         | 调整频差    | ±5ppm ~ ±30ppm                              |
| Frequency Stability         | 温度频差    | 见下表   |
| Operating Temperature Range | 温度范围    | 见下表   |
| Current Consumption         | 工作电流    | 10mA max                                    |
| Output Load                 | 输出负载    | 15pF  |
| Start-up Time               | 起振时间    | 1ms typ.; 5ms max                           |
| Duty Cycle                  | 占空比     | 45~55%                                      |
| Rise & Fall Time            | 上升下降时间  | 5ns max (typ. @1.8V)                        |
| Output Logic High "1"       | 输出电平 高  | 0.9V <sub>dd</sub> min                      |
| Output Logic Low "0"        | 输出电平 低  | 0.1V <sub>dd</sub> max                      |
| Output Enable/Disable       | 启动/禁用时间 | Enable: 1ms max.<br>Disable: 200ns max.     |
| RMS Jitter [49.152MHz@3.3V] | 抖动      | 48 fsec typ.; 300 fsec max [12KHz~20MHz]    |
| Phase Noise[49.152MHz@3.3V] | 相位噪声    | -91dBc@10Hz; -126dBc@100Hz [49.152MHz@3.3V] |
| Storage Temperature Range   | 储存温度范围  | -55°C ~ +125°C                              |
| Aging Per Year              | 老化率     | ±3ppm ~ ±5ppm/year                          |

| Frequency Stability 温度频差 VS Operating Temperature Range 温度范围 |           |     |     |     |     |      |
|--|-----------|-----|-----|-----|-----|------|
| Temp. Code   | Temp.\ppm | ±10 | ±20 | ±30 | ±50 | ±100 |
| B  | -20~70°C  | ○   | ○   | ○   | ○   | ○    |
| C  | -40~85°C  |     | ○   | ○   | ○   | ○    |
| D  | -55~85°C  |     |     | ○   | ○   | ○    |
| E  | -55~105°C |     |     |     | ○   | ○    |
| F  | -55~125°C |     |     |     | ○   | ○    |

NOTE: Please consult for other specifications 若有其它规格需求请告知

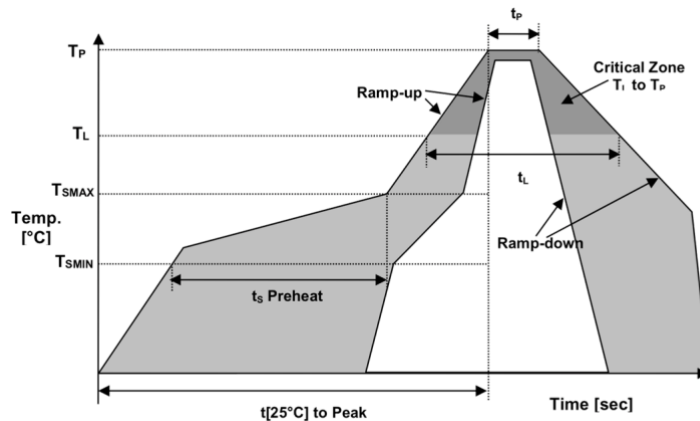
## Outline Dimensions (Unit: mm) 外形尺寸

| <p>KJ25</p>   |                    | <p>Top View</p> | <p>Recommended Soldering Pattern</p> |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
|---|--------------------|-----------------|--------------------------------------|----|--------------------|----|--------|----|--------|----|----------------|---|--|-------------------------|--|------------|-------------|------|--------|--------------------------|--------|--------------------------|---------|
| <p>KJ32</p>   |                    | <p>Top View</p> | <p>Recommended Soldering Pattern</p> |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| <p>KJ50</p>   |                    | <p>Top View</p> | <p>Recommended Soldering Pattern</p> |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| <p>KJ70</p>   |                    | <p>Top view</p> | <p>Recommended Soldering Pattern</p> |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| <table border="1"> <thead> <tr> <th>Pin</th> <th>Connection</th> </tr> </thead> <tbody> <tr> <td>#1</td> <td>Output Enable (OE)</td> </tr> <tr> <td>#2</td> <td>Ground</td> </tr> <tr> <td>#3</td> <td>Output</td> </tr> <tr> <td>#4</td> <td>Supply Voltage</td> </tr> </tbody> </table> |                    | Pin             | Connection                           | #1 | Output Enable (OE) | #2 | Ground | #3 | Output | #4 | Supply Voltage | <table border="1"> <thead> <tr> <th colspan="2">Enable/Disable Function</th> </tr> </thead> <tbody> <tr> <td>Input (#1)</td> <td>Output (#3)</td> </tr> <tr> <td>Open</td> <td>Enable</td> </tr> <tr> <td><math>V_{IH} \geq 70\%V_{DD}</math></td> <td>Enable</td> </tr> <tr> <td><math>V_{IL} \leq 30\%V_{DD}</math></td> <td>Disable</td> </tr> </tbody> </table> |  | Enable/Disable Function |  | Input (#1) | Output (#3) | Open | Enable | $V_{IH} \geq 70\%V_{DD}$ | Enable | $V_{IL} \leq 30\%V_{DD}$ | Disable |
| Pin   | Connection         |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| #1  | Output Enable (OE) |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| #2  | Ground             |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| #3  | Output             |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| #4  | Supply Voltage     |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| Enable/Disable Function   |                    |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| Input (#1)  | Output (#3)        |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| Open  | Enable             |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| $V_{IH} \geq 70\%V_{DD}$  | Enable             |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |
| $V_{IL} \leq 30\%V_{DD}$  | Disable            |                 |                                      |    |                    |    |        |    |        |    |                |   |  |                         |  |            |             |      |        |                          |        |                          |         |

## Part Number Guide 产品编号

|  |   |        |   |                               |   |  |   |   |   |         |
|--|---|--------|---|-------------------------------|---|--|---|---|---|---------|
| KJ25                                       | - | 20.000 | - | 33                            | - | C  | - | 30  | - |         |
| 封装   | - | 标称频率   | - | 工作电压                          | - | 工作温度   | - | 温度频差  | - | 特殊要求    |
| ‘KJ’:产品系列<br>‘25’:封装尺寸<br>SMD<br>2.5x2.0mm |   |        |   | 18=1.8V<br>25=2.5V<br>33=3.3V |   | B: -20~+70°C<br>C: -40~+85°C<br>D: -55~+85°C<br>E: -55~+105°C<br>F: -55~+125°C |   | 10 = ±10ppm<br>20 = ±20ppm<br>30 = ±30ppm<br>50 = ±50ppm<br>100 = ±100ppm |   | NS=特殊要求 |

## Reflow Profile 回流焊



|                                     |            |                   |             |
|-------------------------------------|------------|-------------------|-------------|
| Temperature Min Preheat             | 最低预热温度     | $T_{smin}$        | 150°C       |
| Temperature Max preheat             | 最高预热温度     | $T_{smax}$        | 200°C       |
| Time ( $T_{smin}$ to $T_{smax}$ )   | 时间差        | $T_s$             | 60~120 sec  |
| Temperature                         | 温度         | $T_L$             | 217°C       |
| Peak Temperature                    | 最高温        | $T_p$             | 260 °C      |
| Ramp-up Rate                        | 升温速度       | $R_{up}$          | 3°C/sec max |
| Ramp-down Rate                      | 降温速度       | $R_{down}$        | 6°C/sec max |
| Time within 5°C of Peak Temperature | 最高温度停留时间   | $t_p$             | 30 sec      |
| Time $t[25°C]$ to peak temperature  | 25度到最高温度时间 | $t[25°C]$ to peak | 480 sec     |
| Time                                | 时间         | $t_L$             | 60~150 sec  |

## Revision 版本

| 版本<br>Rev. | 修改页<br>Revise Page | 修改内容<br>Revise Contents | 日期<br>Date | 修改人<br>Reviser |
|------------|--------------------|-------------------------|------------|----------------|
| 1.0        | 2                  | Pin Description         | 2022.6.20  | JZ             |