

## Clock Oscillator (时钟振荡器) - KM70

### Feature 特征

Small SMD Spread Spectrum Low EMI Clock Oscillator 小型封装防电磁干扰时钟振荡器



### Applications 应用

Mobile communications, radar navigation, digital products, HD monitoring, precision instruments 移动通信, 雷达导航, 数码产品, 高清监控, 精密仪器等

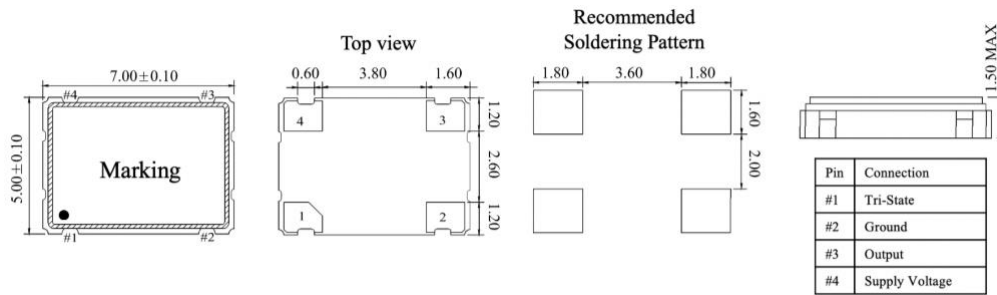
### General Specifications 规格参考

| PARAMETER                                      | 性能参数          | 数值   |                 |
|--|---------------|--|-----------------|
| Frequency Range                                | 频率范围          | 3.0MHz~166.0MHz  | 3.0MHz~200.0MHz |
| Supply Voltage                                 | 供给电压          | +2.5V(±10%)  | +3.3V(±10%)     |
| Spread Type<br>Spread Percentage               | 扩展类型<br>扩展百分比 | Down Spread 向下   |                 |
|  |               | Center Spread 中心   |                 |
|  |               | -1.0% (D1.0)   | 0.5% (C0.5)     |
|  |               | -2.0% (D2.0)   | 1.0% (C1.0)     |
|  |               | -3.0% (D3.0)   | 1.5% (C1.5)     |
| EMI Reduction<br>Applied to the whole spectrum | 电磁波干扰<br>减少量  | 9dB min (100MHz at C0.5)<br>12dB min (100MHz at C1.0)<br>15dB min (100MHz at C1.5) |                 |
| Modulation Carrier Freq.<br>Dither rate        | 调制载波频率        | 30KHz~40KHz (Frequency Dependent)  |                 |
| Output Logic                                   | 输出波形          | CMOS   |                 |
| Output Load                                    | 输出负载          | 15pF   |                 |
| Frequency Tolerance                            | 调整频差          | ±5ppm ~ ±30ppm   |                 |
| Current Consumption                            | 工作电流          | 9~54mA   |                 |
| 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   |                 |
| Rise & Fall Time                               | 上升下降时间        | 5ns max  |                 |
| Start-up Time                                  | 起振时间          | 5ms max  |                 |
| Duty Cycle                                     | 占空比           | 45~55%   |                 |
| Aging Per Year                                 | 年老化率          | ±3ppm ~ ±5ppm/year   |                 |
| Storage Temperature Range                      | 储存温度范围        | -55°C ~ +125°C   |                 |

| 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

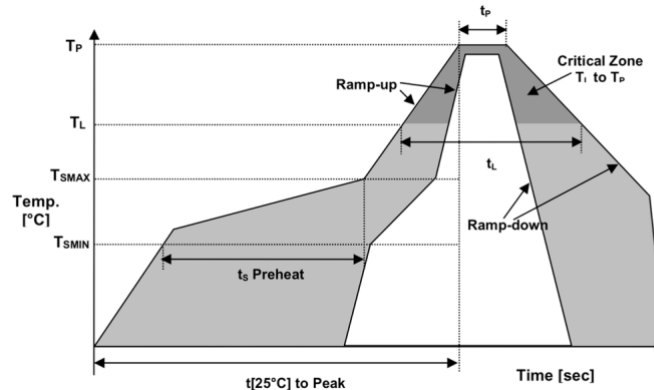
## Outline Dimensions (Unit: mm) 外形尺寸



## Part Number Guide 产品编号

|   |   |        |   |                    |   |  |   |   |   |         |   |         |
|---|---|--------|---|--------------------|---|--|---|---|---|---------|---|---------|
| KM70  | - | 20.000 | - | 33                 | - | C  | - | 30  | - | C1.5    | - |         |
| 封装  | - | 标称频率   | - | 工作电压               | - | 工作温度   | - | 温度频差  | - | 扩展类型百分比 | - | 特殊要求    |
| ‘KM’:产品系列<br>K=KOAN<br>M=扩频晶振<br>‘70’:封装尺寸<br>SMD 7.0x5.0mm |   |        |   | 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 |
|------------|--------------------|-------------------------|------------|----------------|
| 0          | N/A                | Initial issue           | 2020.09.27 | JH             |