# 压控振荡器 Voltage Controlled Crystal Oscillator: KV32D KV50D KV70D

## Feature 特征


- VCXO allow for precise frequency tuning over typical range ±80~200ppm by adjusting the voltage on the control (Vc) pin 压控晶振可以通过调节控制引脚上的电压进行微调，频率微调范围为±80~±200ppm
- Wide frequency range up to 2.1GHz 频率范围广，最高到 2.1GHz
- LVDS differential output for high-speed, low-noise transmission LVDS 差分输出，适合高速，低噪声信号传输
- Ideal for systems requiring frequency alignment and synchronization 适用于频率同步和微调系统

## General Specifications 规格参考

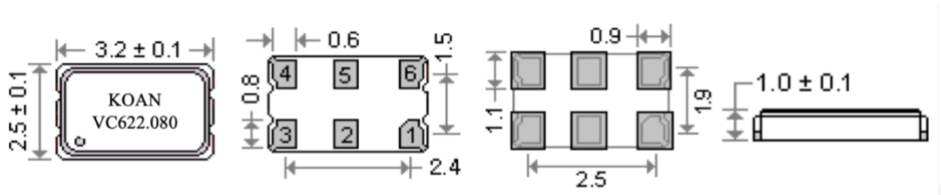
| PARAMETER | 性能参数 | KV32D KV50D KV70D | |
|---|---|---|---|
| Frequency Range | 频率范围 | 15.0MHz ~ 2.1GHz | |
| Supply Voltage | 供给电压 | +2.5V (±10%) | +3.3V (±10%) |
| Center Control Voltage | 中心控制电压 | 1.25Vdc (0.25V~2.25V) | 1.65Vdc (0.3V~3.0V) |
| Output Logic | 输出波形 | LVDS | |
| Output Load | 输出负载 | 100Ω | |
| Frequency Tolerance | 调整频差 | ±20ppm | |
| Current Consumption | 工作电流 | 50mA max. | |
| Output Logic High "1"<br>Output Logic Low "0" | 输出电平 高<br>输出电平 低 | 1.4V typical; 1.6V max.<br>1.1V typical; 0.9V min. | |
| Frequency Pulling Range | 压控范围 | ±80~±200ppm | |
| Integrated Phase Jitter | 抖动 | 0.6ps max. (12KHz~20MHz) | |
| Input Impedance | 输入电阻 | 1MΩ typical | |
| Rise & Fall Time | 上升下降时间 | 0.8ns max. | |
| Start-up Time | 起振时间 | 10ms max. | |
| Output Enable/Disable Time | 启动/禁用时间 | Enable: 200ns max.<br>Disable: 50ns max. | |
| Linearity | 非线性误差 | ±5% typical, ±10% max. | |
| Duty Cycle | 占空比 | 45~55% (f≤40MHz); 40~60% (f > 40MHz) | |
| Modulation Bandwidth (-3dB) | 调制宽带 | 10KHz min. | |
| 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 | ±20 | ±25 | ±30 | ±50 | ±100 |
| B | -20~70°C | ○ | ○ | ○ | ○ | ○ |
| C | -40~85°C | | ○ | ○ | ○ | ○ |
| E | -40~105°C | | | | ○ | ○ |
| F | -55~125°C | | | | | ○ |

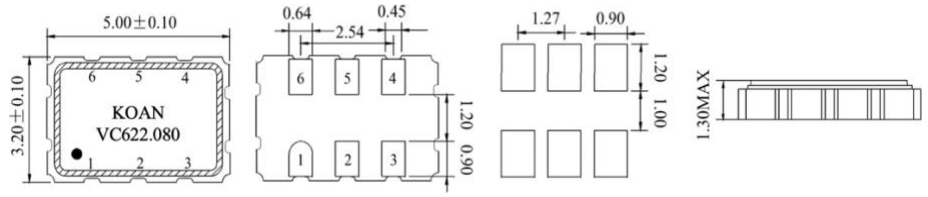
NOTE: Please consult for other specifications 若有其它规格需求请告知

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

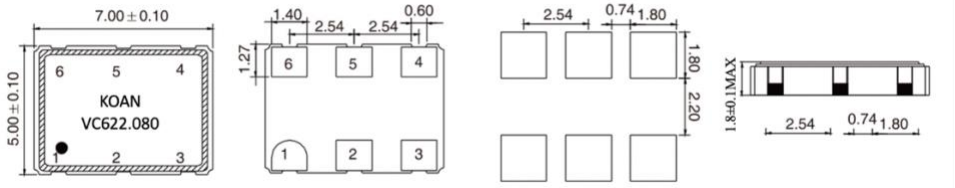
**KV32D**




**KV50D**




**KV70D**

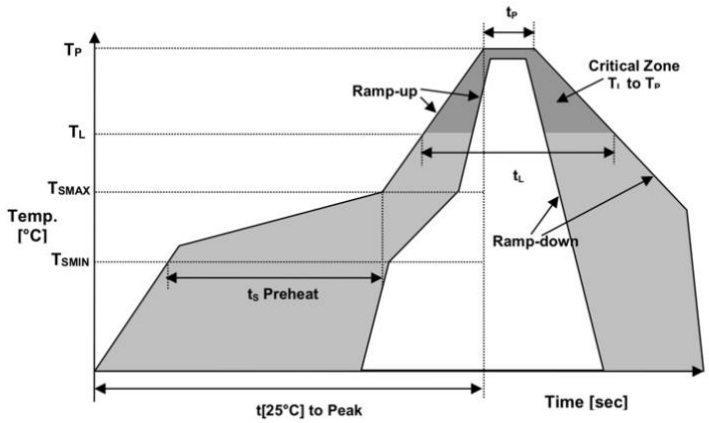



| Pin | Connection |
|---|---|
| #1 | Control Voltage |
| #2 | Tri-State |
| #3 | Ground |
| #4 | CMOS: Output; PECL or LVDS: Differential |
| #5 | CMOS: N.C.; PECL or LVDS: Complementary |
| #6 | Supply Voltage |

## ■ Part Number Guide 产品编号

| KV32D | - | 27.000 | - | 100 | - | 33 | - | C | - | 30 | - | NS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ↓ | | ↓ | | ↓ | | ↓ | | ↓ | | ↓ | | ↓ |
| 型号 | - | 标称频率 | - | 压控范围 | - | 工作电压 | - | 工作温度 | - | 温度频差 | - | 特殊要求 |
| **'KV':** 压控系列<br>**'32':** 封装尺寸<br>3.2x2.5mm<br>**'D'**: 输出波形<br>LVDS | | (In MHz) | | 80=±80ppm<br>100=±100ppm<br>150=±150ppm<br>200=±200ppm | | 25=2.5V<br>33=3.3V | | B: -20~+70°C<br>C: -40~+85°C<br>E: -40~+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 |