

Temperatrue Compensated XO (温补振荡器) - K(V)T702/K(V)T702CS

Feature 特征

CMOS/Clipped sine wave output 方波或者削峰正弦波输出

High stability 高稳定性

Wide Frequency Range 频率范围宽



RoHS
Compliant
KOAN

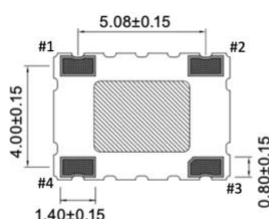
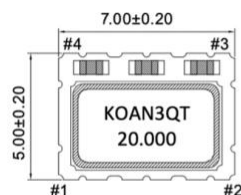
Applications 应用

Time benchmarking, mobile devices, wireless communications, precision meters, intelligent monitoring, etc. 时间基准, 移动设备, 无线通讯, 精密仪表, 智能监控等

General Specifications 规格参考

| PARAMETER | 性能参数 | K(V)T702 | | K(V)T702CS | | |
|-------------------------------|-------------------|--|--------------|--------------------------|------------|--------|
| Supply Voltage | 工作电压 | +2.5V; +3.0V; +3.3V; +5.0V | | +3.3V; +5.0V | | |
| Frequency Range | 频率范围 | 6.4~52.0MHz | | | | |
| Standard Frequency | 通用频率 | 10, 12.8, 16.384, 19.2, 20, 24.576, 25, 26, 30.72, 40, 50MHz | | | | |
| Output Waveform | 输出波形 | CMOS | | Clipped Sine | | |
| Output Load | 输出负载 | 15pF | | 10kΩ/10pF±10% | | |
| Output Logic | 输出电平 | High: ≥0.9V _{dd} Low: ≤0.1V _{dd} | | 0.8V _{p-p} min. | | |
| Initial Calibration Tolerance | 调整频差 | ±1.0~±2.0ppm | | | | |
| Current Consumption | 工作电流 | 3.5mA max @ Clipped Sine 15mA max @ CMOS | | | | |
| EFC Linearity | 非线性误差 | 正向±10% max. | | | | |
| Frequency Stability 频率稳定性 VS | | | | | | |
| Operating Temperature Range | 温度范围 | -20~+70°C | -40~+85°C | -55~+85°C | -55~+105°C | |
| Frequency Stability | 温度频差 | ±1.0~±2.5ppm | ±1.0~±3.0ppm | ±0.5~±5.0ppm | ±5.0ppm | |
| Load Change | 负载变化 | ±0.3ppm (Load±5%) | | | | |
| Voltage Change | 电压变化 | ±0.3ppm (V _{cc} ±5%) | | | | |
| Aging | 老化率 | ±1.0ppm/year max | | | | |
| Reflow | 回流焊 | ±1ppm max | | | | |
| Control Voltage Range | 控制电压范围 | 1.5±1.0V | | | | |
| Frequency Tuning Range | 频率调节范围 | ±5ppm min. | | | | |
| Duty Cycle | 占空比 | 45~55% | | | | |
| Rise & Fall Time | 上升下降时间 | 10ns max. | | | | |
| Phase Noise @10MHz | 相位噪声 Max (dBc/Hz) | -70 | -115 | -130 | -145 | -150 |
| | | 10Hz | 100Hz | 1kHz | 10kHz | 100kHz |
| Input Impedance | 输入电阻 | 50MΩ min. | | - | | |
| Modulation Bandwidth | 调制宽带 | 3KHz min. | | | | |
| Start-up Time | 起振时间 | 2.0ms typ. 5.0ms max. | | | | |
| Storage Temperature Range | 储存温度范围 | -55°C~+125°C | | | | |

Outline Dimensions (Unit: mm) 外形尺寸



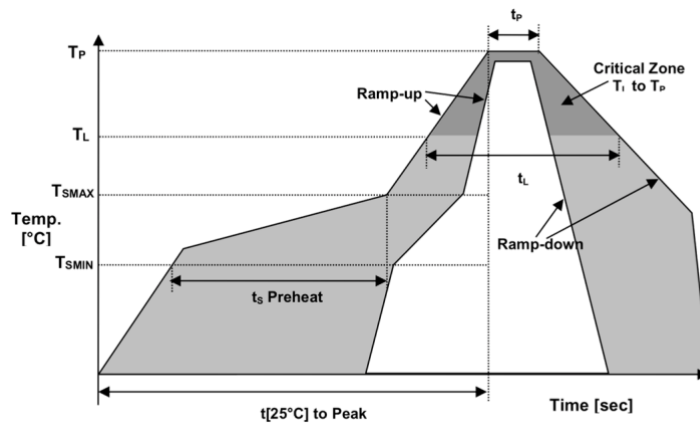
| Pin | Connection |
|-----|--|
| #1 | GND or NC for TCXO Voltage Control for VCCTXO |
| #2 | Ground |
| #3 | Output |
| #4 | Supply Voltage |

Part Number Guide 产品编号

KT **702** - **20.000** - **50** - **C** - **01** - **NS**
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| 系列 | 封装 | 输出波形 | 标称频率 | 工作电压 | 工作温度 | 温度频差 | 特殊要求 |
|---|----------------------------------|-----------------------------------|----------|--|--|---|-----------|
| KT=TCXO 温补振荡器 KVT=VCTCXO 压控温补振荡器 | 702: 7.0x5.0mm/SMD two layers | “ ”= CMOS CS = Clipped Sine | (In MHz) | 25=2.5V 30=3.0V 33=3.3V 50=5.0V | B: -20~+70°C C: -40~+85°C D: -55~+85°C E: -55~105°C | A5 = ±0.5ppm 01 = ±1.0ppm 02 = ±2.0ppm ... | ‘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 Rev. | 修改页 Revise Page | 修改内容 Revise Contents | 日期 Date | 修改人 Reviser |
|------------|--------------------|-------------------------|------------|----------------|
| 1.1 | 1 | Specs | 2021.11.17 | JH |
| 1.2 | 1 | Part Num. Guide | 2022.6.13 | JH |