

温补振荡器 Temperature Compensated Crystal Oscillator: K(V)T702 K(V)T702CS

■ Feature 特征

- CMOS and Clipped Sine wave output available 可选 CMOS 和削峰正弦波输出
- Wide frequency range from 6.4MHz to 52MHz 频率范围宽
- VCTCXO option allows frequency tuning via control voltage 支持通过控制电压进行频率微调
- Ideal for GPS, communication, industrial, and measurement systems 适用于 GPS/通信设备/工业控制/测量系统等对频率要求高的应用



■ 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	40mA max.			40mA max.		
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	见下表					
Frequency Stability	温度频差						
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% (f≤40MHz); 40~60% (f > 40MHz)			-		
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	5ms max.					
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	±0.5	±1.0	±2.0	±2.5	±3.0	±5.0
A	-10~60°C	○	○	○	○	○	○
B	-20~70°C	○	○	○	○	○	○
C	-40~85°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

KT702 KT702CS				<table border="1"> <thead> <tr> <th>Pin</th> <th>Connection</th> </tr> </thead> <tbody> <tr> <td>#1</td> <td>GND or NC for TCXO Voltage Control for VCTCXO</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	GND or NC for TCXO Voltage Control for VCTCXO	#2	Ground	#3	Output	#4	Supply Voltage
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Part Number Guide 产品编号

<u>K(V)T702CS</u>	-	<u>20.000</u>	-	<u>33</u>	-	<u>C</u>	-	<u>03</u>	-	<u>NS</u>
↓		↓		↓		↓		↓		↓
型号	-	标称频率	-	工作电压	-	工作温度	-	温度频差	-	特殊要求

‘KT’:温补系列
 KT: TCXO
 KVT: VCTCXO
 ‘702’:封装尺寸
 7.0x5.0mm
 2 layers

(In MHz)

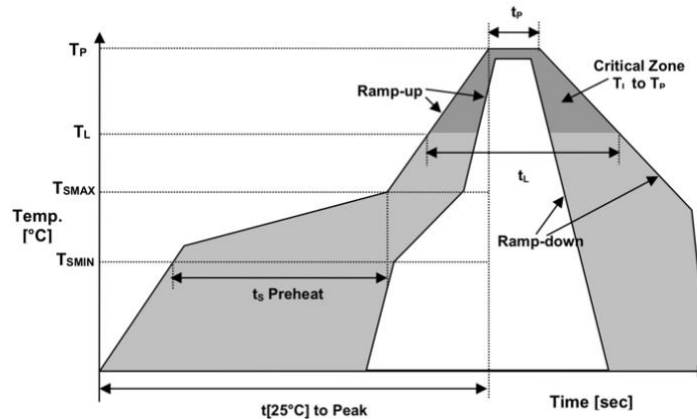
25=2.5V
 30=3.0V
 33=3.3V
 50=5.0V

A: -10~+60°C
 B: -20~+70°C
 C: -40~+85°C

A5=±0.5ppm
 01 = ±1.0ppm
 02 = ±2.0ppm
 025=±2.5ppm
 03 = ±3.0ppm
 05 = ±5.0ppm

‘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