

温补振荡器 Temperature Compensated Crystal Oscillator: K(V)T32 K(V)T32CS

Feature 特征

- CMOS and Clipped Sine wave output available 可选 CMOS 和削峰正弦波输出
- Wide frequency range and tight frequency stability ± 1.0 ppm over -40°C to $+85^{\circ}\text{C}$ 频率范围宽, 频率稳定性高
- 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, 工业控制和测量系统等



General Specifications 规格参考

PARAMETER	性能参数	K(V)T32			K(V)T32CS		
Supply Voltage	工作电压	+1.8V; 2.5V; +3.0V; +3.3V			2.5V; +3.0V; +3.3V		
Frequency Range	频率范围	8.192~60.0MHz			8.192~52.0MHz		
Standard Frequency	通用频率	10, 19.2, 20, 25, 26, 30.72, 40MHz					
Output Waveform	输出波形	CMOS			Clipped Sine Wave		
Output Load	输出负载	15pF			10K Ω /10pF		
Output Logic	输出电平	High: $\geq 0.9V_{dd}$ Low: $\leq 0.1V_{dd}$			0.8V _{p-p} min		
Duty Cycle	占空比	45~55% (f \leq 40MHz); 40~60% (f > 40MHz)			-		
Rise & Fall Time	上升下降时间	5ns max.			-		
Initial Calibration Tolerance	调整频差	± 2.0 ppm max					
Current Consumption	工作电流	40mA max.			40mA max.		
EFC Linearity	非线性误差	正向 $\pm 10\%$ 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	± 0.3 ppm (Load $\pm 5\%$)					
Voltage Change	电压变化	± 0.3 ppm (V _{cc} $\pm 5\%$)					
Aging	老化率	± 1.0 ppm/year max					
Control Voltage Range	控制电压范围	0.9 \pm 0.6V@1.8V _{dd} (Clipped Sine Wave) 1.4V \pm 1.0V@2.5V 1.5 \pm 1.0V @3.0V/3.3V					
Frequency Tuning Range	频率调节范围	± 5 ppm min.					
Phase Noise @10MHz	相位噪声 Max (dBc/Hz)	-80	-115	-135	-145	-150	
		10Hz	100Hz	1kHz	10kHz	100kHz	
Input Impedance	输入电阻	500M Ω min.			1.0M Ω min.		
Modulation Bandwidth	调制宽带	20KHz min.			3KHz min.		
Start-up Time	起振时间	5ms max.			5ms max.		
Storage Temperature Range	储存温度范围	-55°C ~ $+125^{\circ}\text{C}$					

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 $^{\circ}\text{C}$	○	○	○	○	○	○
B	-20~70 $^{\circ}\text{C}$	○	○	○	○	○	○
C	-40~85 $^{\circ}\text{C}$	○	○	○	○	○	○

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

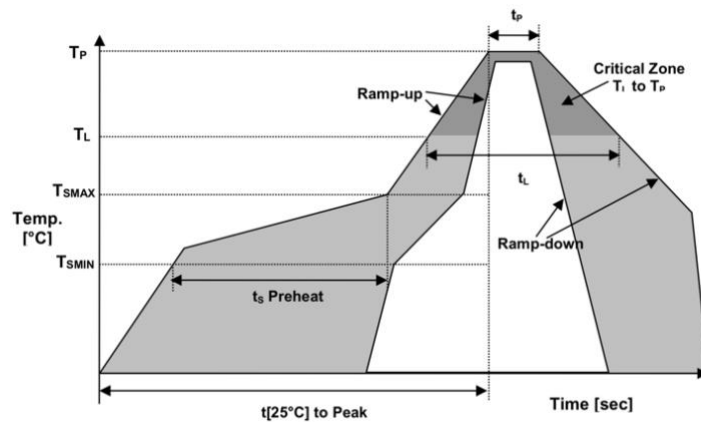
Outline Dimensions (Unit: mm) 外形尺寸

KT32 KT32CS				<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)</u> T32CS	-	<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 ‘32’:封装尺寸 3.2x2.5mm ‘CS’:输出波形 Clipped Sine		(In MHz)		18=1.8V 25=2.5V 30=3.0V 33=3.3V		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