

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			10KΩ/10pF		
Output Logic	输出电平	High: ≥0.9Vdd Low: ≤0.1Vdd			0.8Vp-p min		
Duty Cycle	占空比	45~55%			-		
Rise & Fall Time	上升下降时间	10ns max.			-		
Initial Calibration Tolerance	调整频差	±2.0ppm max					
Current Consumption	工作电流	8mA max			3.5mA 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	-20~+70℃			-40~+85℃		
Frequency Stability	温度频差	±1.0~±3.0ppm			±1.5~±3.0ppm		
Load Change	负载变化	±0.3ppm (Load±5%)					
Voltage Change	电压变化	±0.3ppm (Vcc±5%)					
Aging	老化率	±1.0ppm/year max					
Control Voltage Range	控制电压范围	0.9±0.6V@1.8Vdd (Clipped Sine Wave) 1.4V±1.0V@2.5V 1.5±1.0V @3.0V/3.3V					
Frequency Tuning Range	频率调节范围	±5ppm 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	500MΩ min.			1.0MΩ min.		
Modulation Bandwidth	调制宽带	20KHz min.			3KHz min.		
Start-up Time	起振时间	5.0ms typ.; 10.0ms max.			2.0ms typ.; 5.0ms max.		
Storage Temperature Range	储存温度范围	-55℃~+125℃					

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

Top view of the KOAN3QT 20.000 oscillator package. The dimensions are 3.2 ± 0.1 mm in width and 2.5 ± 0.1 mm in height. The part number KOAN3QT 20.000 is printed in the center.

Bottom view of the oscillator package showing the pin locations. The dimensions are 0.9 mm, 1.2 mm, 1.0 mm, and 0.65 mm. The pins are labeled #1, #2, #3, and #4.

Example of a Terminal
Land Pattern

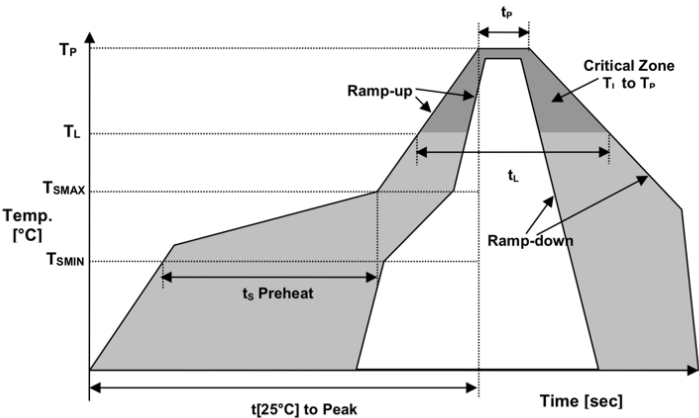
Example of a Terminal Land Pattern. The dimensions are 1.3 mm, 1.0 mm, 1.3 mm, 1.1 mm, and 0.8 mm.

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

Part Number Guide 产品编号

<u>K(V)T32CS</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 ‘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		B: -20~+70°C C: -40~+85°C		01 = ±1.0ppm 02 = ±2.0ppm 025=±2.5ppm 03 = ±3.0ppm		‘NS’:特殊要求

Reflow Profile 回流焊



Temperature Min Preheat	最低预热温度	Tsmin	150°C
Temperature Max preheat	最高预热温度	Tsmax	200°C
Time (Tsmin to Tsmax)	时间差	Ts	60~120 sec
Temperature	温度	TL	217°C
Peak Temperature	最高温	Tp	260 °C
Ramp-up Rate	升温速度	Rup	3°C/sec max
Ramp-down Rate	降温速度	Rdown	6°C/sec max
Time within 5°C of Peak Temperature	最高温度停留时间	tp	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	tL	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
0	N/A	Initial issue	2020.09.27	JZ
1.1	1	Specs update	2021.11.17	JH
1.2	2	Part number guide	2022.06.13	JZ