KOAN®

Product Information 产品介绍

恒温振荡器 Oven Controlled Crystal Oscillator: KO2013T KO2013S

Feature 特征

- Available with HCMOS and True Sine Wave output 提供 HCMOS 和正弦波输出选择
- High performance AT or SC cut crystal for exceptional frequency accuracy 高性能 AT/SC 切晶片，频率精度高
- Standard voltage control enables precise frequency adjustment 内置标准压控功能
- Ultra-high frequency stability across a wide temperature range 宽温环境下，频率稳定性高
- Ideal for telecom, instrumentation, satellite, and other precision timing application 适用于通信，测试仪器，卫星等

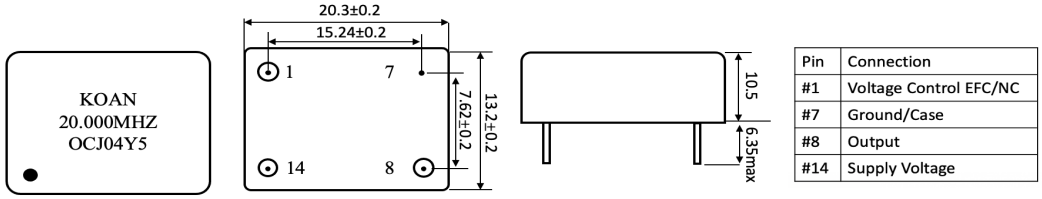
General Specifications 规格参考

PARAMETER	性能参数	KO2013T	KO2013S
Supply Voltage	工作电压	+3.3V±5%； +5.0V±5%； +12.0V±5%	
Output Waveform	输出波形	HCMOS	True Sine
Frequency Range	频率范围	5~50MHz	5~160MHz
Standard Frequency	通用频率	5, 10, 12.5, 20, 38.88, 80, 100MHz	
Output Load	输出负载	15pF (50pF max)	50Ω
Output Logic	输出电平	High: ≥0.9Vdd Low: ≤0.1Vdd	5~9dBm
Initial Calibration Tolerance	基准温度 初始精度	±50ppb~±500ppb	
Voltage Control	压控范围	0~3.3V(Vcon=1.65V); 0~5V(Vcon=2.5V) 或 固定	
Frequency Adjustment	频率调整	±2.0~5.0ppm(AT-cut); ±0.3~1.0ppm(SC-cut)	
EFC Linearity	非线性误差	正向±10% max.	
Power Dissipation	功耗	1.5W max at steady-state@25℃; 3.0W max at turn-on	
Frequency Stability 频率稳定性			
Operating Temperature Range	温度范围	-10~+60℃	-20~+70℃	-40~+85℃
Frequency Stability	温度频差	±50~±500ppb	±100~±500ppb	±200~±500ppb
Load Change	负载变化	±5~±20ppb	
Voltage Change	电压变化	±5~±20ppb	
Warm-up Time	预热时间	5-minute max. within ±50ppb of its reference frequency.	
Aging	老化率	±5~±10ppb per day；±200~±1000ppb per year	
Harmonic	谐波	-	<-30dBc
Spurious	杂散抑制	-	<-70dBc
Duty Cycle	占空比	45~55%	-
Rise & Fall Time	上升下降时间	7 ns max.	-
Phase Noise	相位噪声 (dBc/Hz)	-60 → -90 / 1Hz	-80 → -110 / 10Hz	-110 → -130 / 100Hz	-120 → -140 / 1KHz	-130 → -150 / >10KHz
Storage Temperature Range	储存温度范围	-55°C~+125°C	
Shock	冲击	2000 G's, 0.3ms ½sine	
Vibration	振动	10 to 2000 Hz/10G's	

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

KO2013T
KO2013S

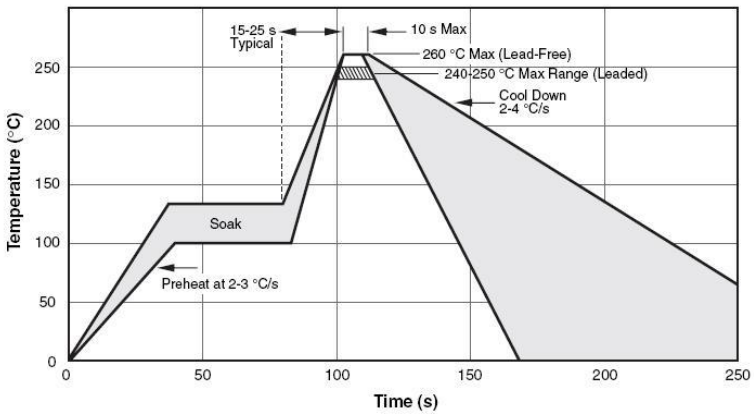


Pin	Connection
#1	Voltage Control EFC/NC
#7	Ground/Case
#8	Output
#14	Supply Voltage

■ Part Number Guide 产品编号

KO1409T	-	20.000	-	33	-	B	-	A2	-	NS
↓		↓		↓		↓		↓		↓
型号	-	标称频率	-	工作电压	-	工作温度	-	温度频差	-	特殊要求
'KO':温补系列 **'2013:**封装尺寸 20.3x13.2mm/DIP **'T'**:输出波形 HCMOS		(In MHz)		33=3.3V 50=5.0V 12=12.0V		A: -10~+60°C B: -20~+70°C C: -40~+85°C		B5 = ±0.05ppm=±50ppb A1 = ±0.1ppm = ±100ppb A2 = ±0.2ppm = ±200ppb A3 = ±0.3ppm = ±300ppb A5 = ±0.5ppm = ±500ppb		**'NS'**:特殊要求

■ Wave Solder Profile 波峰焊



Average Ramp-up Rate	升温速度	~200°C/Second
Heating Rate during preheat	预热速度	1~2°C/second typ.; 4°C/second max
Final Preheat Temperature Ts	最终预热温度	~130°C
Peak Temperature Tp	最高温度	260°C
Time within +0°C/-5°C of actual temperature tp	实际温度时间	10 seconds
Ramp-Down Rate	降温速度	5°C/second max