

恒温振荡器 Oven Controlled Crystal Oscillator: KO1409T

■ Feature 特征

- Compact 14x9mm SMD package for surface mounting 小尺寸贴片封装，适合表面贴装设计
- Voltage control function standards 内置标准压控功能
- Low phase noise and long-term aging performance 低相位噪声，长期老化性能优异
- HCMOS provide standard logic levels, fast switching, low power consumption HCMOS 特点有标准逻辑电平，快速切换，低功耗
- Ideal for precision timing in communication, instrumentation, and industrial control 应用于通信，测试仪器，工业控制中的高精度时钟



■ General Specifications 规格参考

PARAMETER	性能参数	KO1409T				
Supply Voltage	工作电压	+3.3V±5%; +5.0V±5%				
Output Waveform	输出波形	HCMOS				
Frequency Range	频率范围	10~50MHz				
Standard Frequency	通用频率	10, 12.8, 13, 19.2, 20, 25.6, 30.72, 38.88MHz				
Output Load	输出负载	15pF (50pF max)				
Output Logic	输出电平	High: ≥0.9Vdd Low: ≤0.1Vdd				
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	±5.0ppm min				
EFC Linearity	非线性误差	正向±10% max.				
Power Dissipation	功耗	1.5W max at steady-state@25°C; 2.5W max at turn-on				
Frequency Stability 频率稳定性						
Operating Temperature Range	温度范围	-10~+60°C		-20~+70°C		-40~+85°C
Frequency Stability	温度频差	±5~±30ppb		±10~±50ppb		±20~±200ppb
Load Change	负载变化	±5ppb max				
Voltage Change	电压变化	±5ppb max				
Warm-up Time	预热时间	5 minute max. within ±50ppb of its reference frequency.				
Aging	老化率	±3ppb per day; ±500ppb per year				
Duty Cycle	占空比	45~55%				
Rise & Fall Time	上升下降时间	7 ns max.				
Phase Noise @10MHz	相位噪声 Max (dBc/Hz)	-75	-100	-125	-150	-155
		1Hz	10Hz	100Hz	1KHz	>10KHz
Storage Temperature Range	储存温度范围	-55°C~+125°C				
Shock	冲击	2000 G's, 0.3ms 1/2sine				
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

KOAN
20.000MHZ
OCJ04Y5

15.4
10.4
6.6
14.3
2.5
6.4
6.4
7.4
1.0
φ1.0

Pin	Connection
#1	Voltage Control
#2	No Connected
#3	Ground
#4	Output
#5	No Connected
#6	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
‘1409’:封装尺寸
14.3x9.3mm/SMD
‘T’:输出波形 HCMOS

(In MHz)

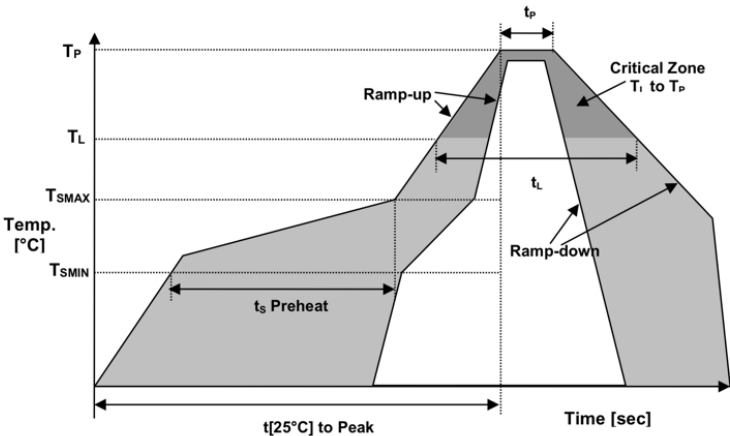
33=3.3V
50=5.0V

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

A1 = ±0.1ppm = ±100ppb
A2 = ±0.2ppm = ±200ppb
A3 = ±0.3ppm = ±300ppb
B1 = ±0.01ppm = ±10ppb
B2 = ±0.02ppm = ±20ppb
B3 = ±0.03ppm = ±30ppb
B5 = ±0.05ppm = ±50ppb
C3 = ±0.003ppm = ±3ppb
C5 = ±0.005ppm = ±10ppb

‘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	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
0	N/A	Initial issue	2021.01.22	JH