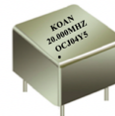


恒温振荡器 Oven Controlled Crystal Oscillator: KO2020T KO2020S

■ Feature 特征

- High Stability AT-cut or SC-cut Crystal, HCMOS or True Sine output Waveform; Voltage Control is standard 高稳定性(AT/SC 切晶片);有电压控制, 可选 HCMOS 或正弦波



■ General Specifications 规格参考

PARAMETER	性能参数	KO2020T			KO2020S		
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°C; 3.6W max at turn-on					
Frequency Stability 频率稳定性							
Temperature	温度	见下表					
Load Change	负载变化	±1~±15ppb					
Voltage Change	电压变化	±1~±15ppb					
Warm-up Time	预热时间	5 minute max. within ±50ppb of its reference frequency.					
Aging	老化率	±2~±10ppb per day; ±100~±500ppb per year					
Harmonic	谐波	-			<-30dBc		
Spurious	杂散抑制	-			<-75dBc		
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)	-70 → -100	-90 → -110	-120 → -140	-135 → -150	-145 → -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

Frequency Stability 温度频差 V.S. Operating Temperature Range 温度范围				
温度	系列	标准 Standard Series	高稳 High Stability	低相噪 Low Phase Noise
频率范围		5~50MHz	5~40MHz	10~160MHz
A: -10~60°C		±10~±50ppb	±1~±2ppb	±50~±100ppb
B: -20~70°C		±10~±100ppb	±2~±5ppb	±100~±200ppb
C: -40~85°C		±30~±100ppb	±5~±10ppb	±200~±500ppb
E: -55~105°C		±100~±500ppb	-	-

Outline Dimensions (Unit: mm) 外形尺寸

KO2020T
KO2020S

1 VCC

2 OUT

3 GND

4 EFC

5 NC

KOAN
20.000MHZ
OCJ04Y5

20.3±0.2

15.2±0.2

7.62

7.62

10.5

5.0

Pin

Connection

#1

Supply Voltage

#2

Output

#3

Ground/Case

#4

Voltage Control EFC / NC

#5

Reference Voltage Control / NC

Part Number Guide 产品编号

KO2020T	-	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

‘2020’:封装尺寸

20.3x20.3mm/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

E: -55~+105°C

A1 = ±0.1ppm = ±100ppb

A2 = ±0.2ppm = ±200ppb

A3 = ±0.3ppm = ±300ppb

B1 = ±0.01ppm = ±10ppb

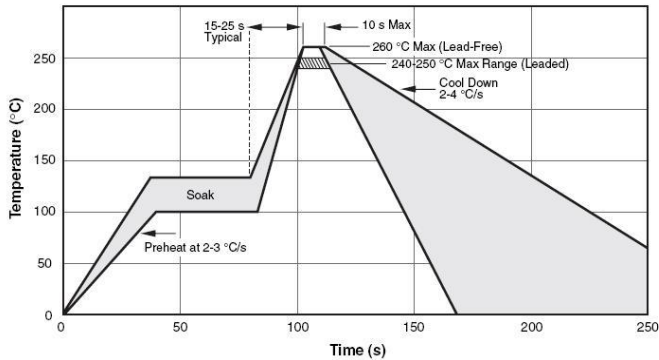
B2 = ±0.02ppm = ±20ppb

B3 = ±0.03ppm = ±30ppb

B5 = ±0.05ppm = ±50ppb

‘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

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