## 时钟振荡器 Clock Oscillator: KD508C KD708C

### ■ Feature 特征

- o Programmable differential output logic (CMOS, PECL, LVDS, CL, HCSL) 可编程差分输出逻辑
- o Wide frequency range up to 700MHz, ideal for high-speed digital systems 高达 700MHz 的高频输出，适用于高速数字系统和高速串行接口
- o Ultra-low phase jitter typical 150fs RMS, ensuring high timing precision 超低相位抖动
- o 8-pin layout ensure power and signal integrity at higher frequencies 8 引脚设计保证电源和信号完整性

### ■ General Specifications 规格参考

| PARAMETER | 性能参数 | KD508C  KD708C |
|---|---|---|
| Frequency Range | 频率范围 | 150MHz ~ 700MHz |
| Supply Voltage | 供给电压 | +1.8V/2.5V/3.3V (±10%) |
| Output Logic | 输出波形 | HCSL |
| Frequency Tolerance | 调整频差 | ±30ppm max. |
| Frequency Stability | 温度频差 | 见下表 |
| Operating Temperature Range | 温度范围 | 见下表 |
| Current Consumption (15pF load) | 工作电流 | 115mA max. |
| Output Load | 输出负载 | 50Ω to ground on each output |
| Start-up Time | 起振时间 | 10ms max. |
| Duty Cycle | 占空比 | 40~60% |
| Rise & Fall Time | 上升下降时间 | 0.8ns max. |
| Output Enable/Disable Time | 启动/禁用时间 | Enable: 2.5ms max.<br>Disable: 10μs max. |
| Output Logic High "1"<br>Output Logic Low "0" | 输出电平 高<br>输出电平 低 | 0.66V~1.15V<br>0.0V~0.15V |
| Output Voltage Swing | 输出电压波动 | 620~780mV |
| RMS Phase Jitter | 抖动 | 150 fs typ. 300fs max. [12KHz~20MHz] |
| Storage Temperature Range | 储存温度范围 | -55°C ~ +125°C |
| Aging Per Year | 年老化率 | ±3ppm ~ ±5ppm/year |

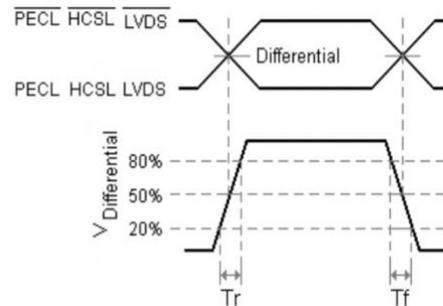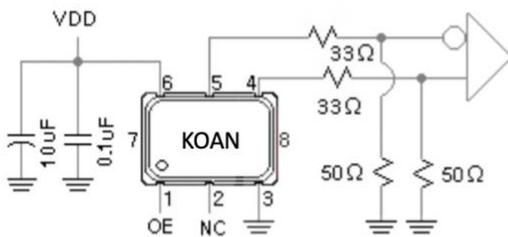| Frequency Stability 温度频差 VS Operating Temperature Range 温度范围 | | | | | | |
|---|---|---|---|---|---|---|
| Temp. Code | Temp.\ppm | ±20 | ±25 | ±30 | ±50 | ±100 |
| B | -20~70°C | ○ | ○ | ○ | ○ | ○ |
| C | -40~85°C | | ○ | ○ | ○ | ○ |
| E | -40~105°C | | | | ○ | ○ |
| F | -55~125°C | | | | | ○ |

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

| | |
|---|---|
| **KD508C** |  |
| **KD708C** |  |

| Pin | Connection |
|---|---|
| #1 | Output Enable (OE) |
| #2 | No Connection |
| #3 | Ground |
| #4 | Output |
| #5 | Complementary |
| #6 | Supply Voltage |
| #7 | Do not Connect |
| #8 | Do not Connect |

| Enable/Disable Function | |
|---|---|
| Input (#1) | Output (#4, #5) |
| Open | Enable |
| $V_{IH} \geq 80\% V_{dd}$ | Enable |
| $V_{IL} \leq 20\% V_{dd}$ | Disable |

## ■ Test Circuit and Output Waveforms 测试电路图及输出波形

■ **Part Number Guide 产品编号**

| KD508C | - | 622.080 | - | 33 | - | C | - | 30 | - | NS |
|--------|---|---------|---|----|---|---|---|----|----|----|
| ↓ | | ↓ | | ↓ | | ↓ | | ↓ | | ↓ |
| 型号 | - | 标称频率 | - | 工作电压 | - | 工作温度 | - | 温度频差 | - | 特殊要求 |

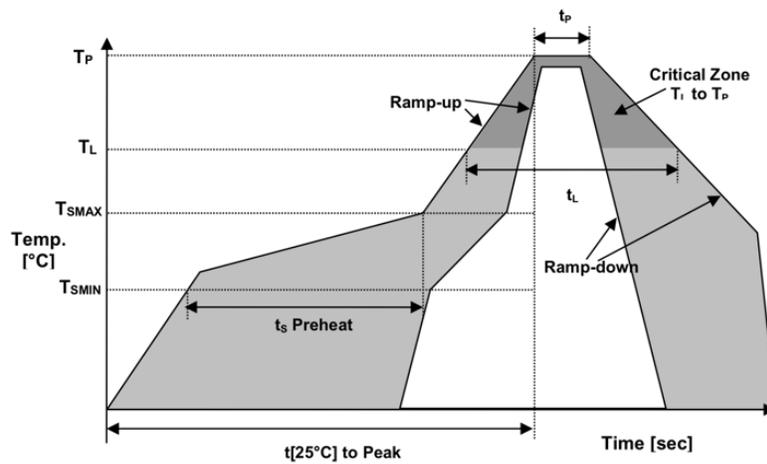| | | | | | |
|---|---|---|---|---|---|
| **'KD'**：差分晶振<br>**'508'**：封装尺寸<br>SMD 5.0x3.2mm 8 pad<br>**'C'**: 输出波形<br>HCSL | | (In MHz) | 18=1.8V<br>25=2.5V<br>33=3.3V | B: -20~+70°C<br>C: -40~+85°C<br>E: -40~+105°C<br>F: -55~+125°C | 10 = ±10ppm<br>20 = ±20ppm<br>30 = ±30ppm<br>50 = ±50ppm<br>100 = ±100ppm | **'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 |