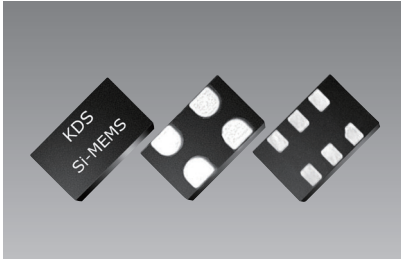


# 压控MEMS振荡器(VCMO)

## MO3807/MO3808/MO3809



### ■ 优点

- 频率公差:  $\pm 25 \times 10^{-6}$
- 频率可变范围:  $\pm 25 \sim \pm 1600 \times 10^{-6}$
- 外形尺寸:  
2.7×2.4 mm (4端子, compatible with 2.5×2.0 footprint),  
3.2×2.5 mm (4端子), 5.0×3.2 mm (6端子), 7.0×5.0 mm (6端子)

### ■ 用途

- Telecom clock synchronization, instrumentation
- Low bandwidth analog PLL, jitter cleaner, clock recovery, 音响
- 视频、宽带调制解调器、网络设备、3G/HD-SDI, FPGA



型号	频率范围 (MHz)	频率公差 ( $\times 10^{-6}$ )	电源电压 (V)	消耗电流 (mA Typ.)	尺寸 (mm)	输出
MO3807	30 standard frequencies	$\pm 25, \pm 50$	+1.71 to +1.89, +2.25 to +3.63	+29 to +36 (+10 $\mu$ A stby)	2.7×2.4×0.8, 3.2×2.5×0.8, 5.0×3.2×0.8, 7.0×5.0×1.0 (QFN)	LVCMOS
MO3808	1 to 80	$\pm 10, \pm 25, \pm 50$				
MO3809	80 to 220					

### ■ 一般规格(MO3808)

项目	符号	Min.	Typ.	Max.	单位	条件
输出频率范围	f	1	-	80	MHz	
电源电压	V <sub>dd</sub>	+1.71 +2.25 +2.52 +2.97	+1.8 +2.5 +2.8 +3.3	+1.89 +2.75 +3.08 +3.63	V	Additional supply voltages between +2.5V and +3.3V can be supported.
运行温度范围	T <sub>use</sub>	-20 -40	- -	+70 +85	°C	Extended Commercial Industrial
频率公差	F <sub>stab</sub>	-10 -25 -50	- - -	+10 +25 +50	$\times 10^{-6}$	包含 +25°C 时的初始频率偏差 [4]、温度特性、运行电源电压范围内的电源电压特性、负载特性。
长期老化 (10 年)	F <sub>aging10</sub>	-5.0	-	+5.0	$\times 10^{-6}$	10 years, T <sub>A</sub> = +25°C
消耗电流	I <sub>dd</sub>	- -	+31 +29	+33 +31	mA	No load condition, f = 20 MHz, V <sub>dd</sub> = +2.5V, +2.8V or +3.3V No load condition, f = 20 MHz, V <sub>dd</sub> = +1.8V
待机时电流	I <sub>std</sub>	- -	- -	+70 +10	$\mu$ A	V <sub>dd</sub> = +2.5V, +2.8V, +3.3V, ST = GND, Output is weakly pulled down V <sub>dd</sub> = +1.8V, ST = GND, Output is weakly pulled down
占空比	DC	45	-	55	%	All V <sub>dds</sub>
0 电平电压	V <sub>OL</sub>	-	-	V <sub>dd</sub> ×0.1	V	I <sub>OL</sub> = +7.0 mA (V <sub>dd</sub> = +3.0V or +3.3V) I <sub>OL</sub> = +4.0 mA (V <sub>dd</sub> = +2.8V or +2.5V) I <sub>OL</sub> = +2.0 mA (V <sub>dd</sub> = +1.8V)
1 电平电压	V <sub>OH</sub>	V <sub>dd</sub> ×0.9	-	-	V	I <sub>OH</sub> = -7.0 mA (V <sub>dd</sub> = +3.0V or +3.3V) I <sub>OH</sub> = -4.0 mA (V <sub>dd</sub> = +2.8V or +2.5V) I <sub>OH</sub> = -2.0 mA (V <sub>dd</sub> = +1.8V)
上升时间、下降时间	Tr, Tf	-	1.5	2.0	ns	V <sub>dd</sub> = +1.8V, +2.5V, +2.8V or +3.3V, 10% - 90% V <sub>dd</sub> level
频率可变范围 [5,6]	PR	$\pm 25, \pm 50, \pm 100, \pm 150, \pm 200, \pm 400, \pm 800, \pm 1600,$	-	-	$\times 10^{-6}$	See the Absolute Pull Range and APR table of datasheet
1 电平控制电压	VC <sub>U</sub>	+1.7 +2.4 +2.7 +3.2	- - - -	- - - -	V	V <sub>dd</sub> = +1.8V, Voltage at which maximum deviation is guaranteed. V <sub>dd</sub> = +2.5V, Voltage at which maximum deviation is guaranteed. V <sub>dd</sub> = +2.8V, Voltage at which maximum deviation is guaranteed. V <sub>dd</sub> = +3.3V, Voltage at which maximum deviation is guaranteed.
0 电平控制电压	VC <sub>L</sub>	-	-	+0.1	V	Voltage at which minimum deviation is guaranteed.
输入阻抗	Z <sub>in</sub>	100	-	-	k $\Omega$	
入力容量	C <sub>in</sub>	-	5.0	-	pF	
线性	Lin	-	0.1	1.0	%	
频率变化极性	-	Positive slope		-	-	
启动时间	T <sub>start</sub>	-	-	10	ms	
输出使能时间 输出禁用时间	T <sub>oe</sub>	-	-	180	ns	f = 40MHz, all V <sub>dds</sub> , For other freq., T <sub>oe</sub> = 100 ns + 3 clock periods
重启时间	T <sub>resume</sub>	-	7.0	10	ms	
RMS 周期抖动	T <sub>jitt</sub>	- -	1.5 2.0	2.0 3.0	ps	f = 20 MHz, V <sub>dd</sub> = +2.5V, +2.8V or +3.3V f = 20 MHz, V <sub>dd</sub> = +1.8V
RMS 相位抖动 (随机)	T <sub>phj</sub>	-	0.5	1.0	ps	f = 20 MHz, Integration bandwidth = 12 kHz to 20 MHz, All V <sub>dds</sub>
包装单位	1000pcs./reel ( $\phi$ 180) or 3000pcs./reel ( $\phi$ 180: 2724, 3225 package)					

[1]. 上述电气特性, 除指定外, 输出负载15pF, 通过全部电源电压规定  
 [2]. Typical值是在TA = +25 °C、电源电压为额定最大值时规定的。  
 [3]. 除指定外, 在Max/Min内的运行电源电压及运行温度保证  
 [4]. 初始频率偏差在Vin = V<sub>dd</sub>/2测量  
 [5]. 绝对频率可变范围(APR)根据运行电源电压范围及运行温度范围内的频率可变范围定义  
 [6]. APR = 频率可变范围(PR) - 频率公差 (F<sub>stab</sub>) - 长期老化 (F<sub>aging</sub>)