

OH-X8FXXXXX Series
HF/UHF OCXO Low Power SMD

Rev. A

Description: OH-X8FXXXXX Series of Oven Controlled Crystal Oscillators (OCXO) provides High and Ultra High Frequency with SC-cut stability performance, extremely low phase noise and power consumption, with variety of different output types in a miniature SMD package

Features

- Very Low Power Consumption
- Very Low Phase Noise
- Excellent SC-cut Frequency Stability
- Ultra High Frequency – up to 1 GHz
- CMOS, Sine-Wave, PECL, LVDS outputs available
- Stratum3E available



Creating a Part Number

OH - X 8F X X XX X

Package Code
OH 7 pad 25x22mm SMD

Supply Voltage

Code	Specification
0	5V ±5%
A	3.3V ±5%

OCXO/OCVCXO Option

Code	Specification
X	No V. Control
V	W/ V. Control

Output Type

Code	Specification
C	CMOS
S	Sine-wave
L	LVDS
P	PECL

Temperature Range

Code	Specification
A	0°C to 50°C
B	-10°C to 60°C
C	0°C to 70°C
D	-20°C to 70°C
E	-30°C to 70°C
F	-40°C to 80°C

Temperature Stability

Code	Specification
17	1x10 ⁻⁷
58	5x10 ⁻⁸
28	2x10 ⁻⁸
18	1x10 ⁻⁸
YZ	Yx10 ^{-Z}

CRYSTAL OSCILLATORS

Data Sheet 0635C

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Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
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Absolute Maximum Ratings

Input Break Down Voltage	V _{cc}		-0.5		5.5	V	
Storage temp.	T _s		-40		85	°C	
Contr. Voltage	V _c		-1		9	V	

Electrical

Frequency Range	F	CMOS Sine-wave PECL, LVDS	30 30 30		200 1,000 1,000	MHz		
Input Voltage	V _{cc}		3.135 4.75	3.30 5.0	3.465 5.25	V	3 5	
Input Current	I _{cc}	At room, steady state			90 160	mA	@ 100 MHz, 3.3V @ 622 MHz, 3.3V	
Frequency Stability	ΔF/F	vs. Temperature vs. V _{cc} aging		±50 ±2 ±0.1 ±0.5		ppb ppb/V ppm/year ppm	See chart First Year 15 years	
Calibration	ΔF/F	As shipped, 25°C		±0.1		ppm		
Load		CMOS Sine PECL LVDS	15pF/10KOhm Internally AC-coupled 50 Ohm 50 Ohm to V _{cc} -2V or Thevenin equivalent 100 Ohm between the outputs, receiving end					
Duty cycle		@50%	45	50	55	%	CMOS, PECL, LVDS	
Rise/Fall time	Tr/Tf	20 to 80 %		3 0.35		ns	CMOS PECL, LVDS	
Logic "1" level	V _{oh}	CMOS	0.9V _{cc}			V		
Logic "0" level	V _{ol}	CMOS			0.1V _{cc}	V		
Logic "1" level	V _{oh}	PECL	V _{cc} -0.96		V _{cc} -0.81	V	100K available	
Logic "0" level	V _{ol}	PECL	V _{cc} -1.85		V _{cc} -1.65	V	100K available	
Output Levels, LVDS	V _{od}	Differential amplitude	247	330	454	mV		
		Amplitude error			50	mV		
	V _{of}	Offset voltage	1.125	1.25	1.375	V		
		Offset error			50	mV		
Output power	P	Sinewave Into 50 Ohm	0 4	3 7		dBm	3.3V 5.0V	
Start up time	T _s			2	10	ms		
Phase jitter		1σ		0.4 0.2	1 0.4	ps	100 Hz to 20 MHz 12 KHz to 20 MHz	
Subharmonics		Sine, PECL, LVDS CMOS, Sine		-45	-40 none	dBc	F>250MHz F< 250 MHz	
Spurious					-60	dBc		
Harmonics		Sine-wave		-30	-25	dBc		
SSB Phase Noise		@ 10 Hz		-100		dBc/Hz	@ 100 MHz, CMOS, Sine	
		@ 100 Hz		-125				
		@ 1 KHz		-140				
		@ 10 KHz		-160				
		@ 100 KHz		-165				
SSB Phase Noise		@ 10 Hz		-80		dBc/Hz	@ 622 MHz; Sine/PECL, LVDS	
		@ 100 Hz		-100				
		@ 1 KHz		-120				
		@ 10 KHz		-145/-140				
		@ 100 KHz		-150/-145				
Input Impedance			> 10KOhm					
Control voltage	V _c		0		3.3	V		
Modulation bandwidth	MB		100 Hz				Contact Factory for wider MB	
Deviation		V _c =0V to 3.3V, 25°C	±0.5	±1.0		ppm		



**FREQUENCY
CONTROLS, INC.**

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Environmental and Mechanical

Operating temp. range	0°C to 70°C , -40°C to 85°C, see chart, page 1
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. E
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A
Vibration	Per MIL-STD-883, Method 2007, Cond. A
Soldering Conditions	260°C for 10 s leads only
Hermetic Seal	Leak rate less than 5×10^{-8} atm.cc/s of helium

Electrical Connections

Pin Out	Pin #1- Voltage Control ; Pin #2 – N/C ; Pin #3 – Vcc; Pin#4 – Output, CMOS or Sine; Pin#5 – PECL/LVDS Output; Pin#6 – PECL/LVDS Complementary Out; Pin #7 – GND
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Maximum solder reflow profile

