

**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 <sup>-7</sup>
58	5x10 <sup>-8</sup>
28	2x10 <sup>-8</sup>
18	1x10 <sup>-8</sup>
YZ	Yx10 <sup>-Z</sup>

# CRYSTAL OSCILLATORS

Data Sheet 0635C

OH-X8FXXXXX Series HF/UHF OCXO Low Power SMD

Rev. A

## Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
-----------	------	-----------	-----	-----	-----	------	------

### Absolute Maximum Ratings

Input Break Down Voltage	V <sub>cc</sub>		-0.5		5.5	V	
Storage temp.	T <sub>s</sub>		-40		85	°C	
Contr. Voltage	V <sub>c</sub>		-1		9	V	

### Electrical

Frequency Range	F	CMOS Sine-wave PECL, LVDS	30 30 30		200 1,000 1,000	MHz	
Input Voltage	V <sub>cc</sub>		3.135 4.75	3.30 5.0	3.465 5.25	V	3 5
Input Current	I <sub>cc</sub>	At room, steady state			90 160	mA	@ 100 MHz, 3.3V @ 622 MHz, 3.3V
Frequency Stability	ΔF/F	vs. Temperature vs. V <sub>cc</sub> 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 <sub>cc</sub> -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 <sub>oh</sub>	CMOS	0.9V <sub>cc</sub>			V	
Logic "0" level	V <sub>ol</sub>	CMOS			0.1V <sub>cc</sub>	V	
Logic "1" level	V <sub>oh</sub>	PECL	V <sub>cc</sub> -0.96		V <sub>cc</sub> -0.81	V	100K available
Logic "0" level	V <sub>ol</sub>	PECL	V <sub>cc</sub> -1.85		V <sub>cc</sub> -1.65	V	100K available
Output Levels, LVDS	V <sub>od</sub>	Differential amplitude	247	330	454	mV	
		Amplitude error			50	mV	
	V <sub>of</sub>	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 <sub>s</sub>			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 <sub>c</sub>		0		3.3	V	
Modulation bandwidth	MB		100 Hz				Contact Factory for wider MB
Deviation		V <sub>c</sub> =0V to 3.3V, 25°C	±0.5	±1.0		ppm	



**FREQUENCY  
CONTROLS, INC.**

357 Beloit Street, P.O. Box 457, Burlington, WI 53105-0457 U.S.A. Phone 262/763-3591 FAX 262/763-2881

Email: [nelsales@nelfc.com](mailto:nelsales@nelfc.com) www.nelfc.com

## OH-X8FXXXXX Series HF/UHF OCXO Low Power SMD

Rev. A

*Environmental and Mechanical*

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

*Electrical Connections*

<b>Pin Out</b>	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
----------------	--

### Maximum solder reflow profile

