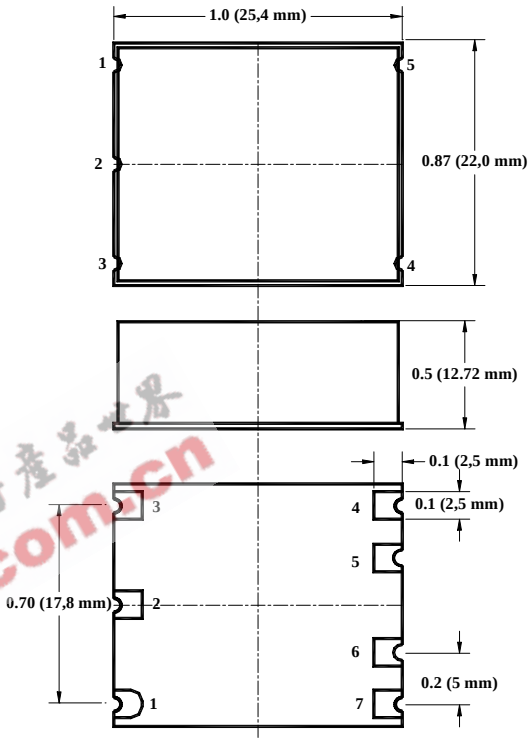
OH-X8FXXXXX Series
HF/UHF OCXO Low Power SMD

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 Stability

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

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

NEL FREQUENCY CONTROLS, INC.
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Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Absolute Maximum Ratings							
Input Break Down Voltage	Vcc		-0.5		5.5	V	
Storage temp.	Ts		-40		85	° C	
Contr. Voltage	Vc		-1		9	V	
Electrical							
Frequency Range	F	CMOS Sine-wave PECL, LVDS	30 30 30		200 1,000 1,000	MHz	
Input Voltage	Vcc		3.135 4.75	3.30 5.0	3.465 5.25	V	3 5
Input Current	Icc	At room, steady state			90 160	mA	@ 100 MHz, 3.3V @ 622 MHz, 3.3V
Frequency Stability	ΔF/F	vs. Temperature vs. Vcc aging		±50 ±2 ±0.1 ±0.5		ppb ppb/V ppm/year ppm	See chart First Year 15 years
Calibration	ΔF/F	As shipped, 25ºC		±0.1		ppm	
Load		CMOS Sine PECL LVDS	15pF/10KOhm Internally AC-coupled 50 Ohm 50 Ohm to Vcc-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	Voh	CMOS	0.9Vcc			V	
Logic "0" level	Vol	CMOS			0.1Vcc	V	
Logic "1" level	Voh	PECL	Vcc-0.96		Vcc-0.81	V	100K available
Logic "0" level	Vol	PECL	Vcc-1.85		Vcc-1.65	V	100K available
Output Levels, LVDS	Vod	Differential amplitude	247	330	454	mV	
		Amplitude error			50	mV	
	Vof	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	Ts			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 Hz @1 KHz @10 KHz @100 KHz		-100 -125 -140 -160 -165		dBc/Hz	@100 MHz, CMOS, Sine
SSB Phase Noise		@10 Hz @100 Hz @1 KHz @10 KHz @100 KHz		-80 -100 -120 -145/-140 -150/-145		dBc/Hz	@622 MHz; Sine/PECL,LVDS
Input Impedance			> 10KOhm				
Control voltage	Vc		0		3.3	V	
Modulation bandwidth	MB		100 Hz				Contact Factory for wider MB
Deviation		Vc=0V to 3.3V,25°C	±0.5	±1.0		ppm	

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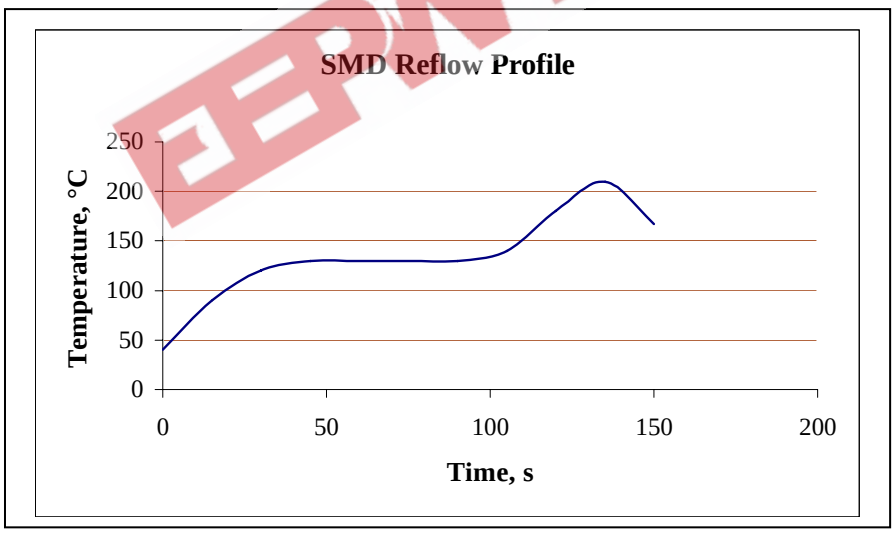
Environmental and Mechanical

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 $5x10^{-8}$ 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

Maximum solder reflow profile



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