Rev. P

O-CEGM-0XXXXXX-X
Low Phase Noise UHF OCXO in 36x27 mm "Europack"

Product Data Sheet

Description

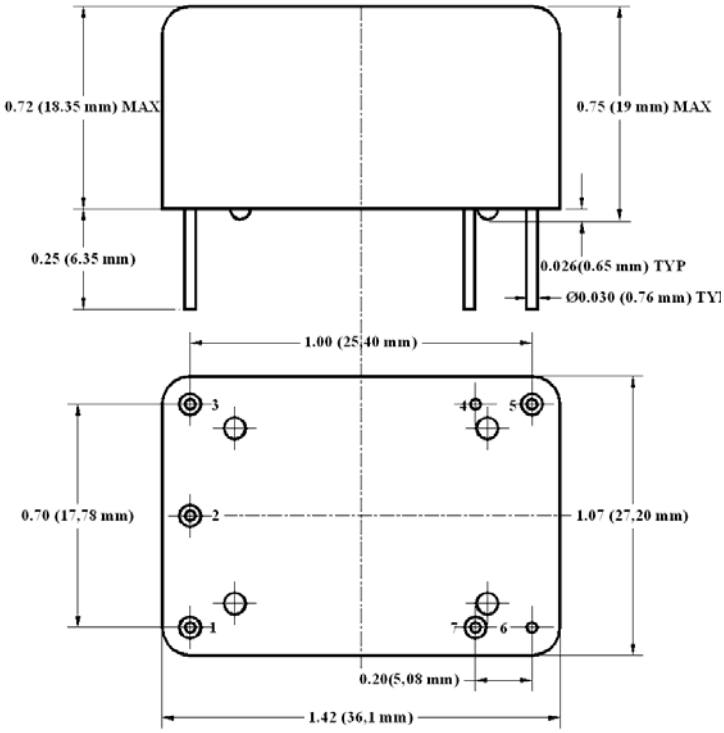
O-CEGM-0XXXXXX-X is based on lower frequency SC-cut OCXO with Low Noise analog multiplier to achieve frequency range of 500 MHz to 1,300 MHz

Features

- **UHF**
- **Ultra Low Phase Noise**
- **Low Spurious**
- **+12 dBm Sine Wave output**

Applications

- **Instrumentation**
- **Telecommunication Systems**
- **Radar**
- **GPS**
- **COTS/Dual use**



Note: 0.63"(16mm) height is available with lower grade units

NEL FREQUENCY CONTROLS, INC.

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OVEN-CONTROLLED CRYSTAL OSCILLATOR

Data Sheet 0907B

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Absolute Maximum Ratings							
Input Break Down Voltage	Vcc	5 V supply	-0.5		5.5	V	
Storage temper.	Ts		-40		85	°C	
Control Voltage	Vc		-1		5.5	V	
Electrical (1)							
Frequency	F		500	1,000	1,300	MHz	
Frequency stability	ΔF/F	vs. Temp.		±50		ppb	See chart below
		vs. Supply		2	3	ppb/10%Vcc	
Aging		per day first year 10 years		5E-9 3E-7	 2E-6		after 30 days
Allan Deviation		.1s to 10s		1E-10			
SSB Phase Noise	Lφ	10 Hz 100 Hz 1 KHz 10 KHz 100 KHz		-75 -105 -130 -145 -150	-70 -100 -128 -143 -147	dBc/Hz	1 GHz "P" grade
		10 Hz 100 Hz 1 KHz 10 KHz 100 KHz		-85 -115 -140 -158 -160	-82 -112 -138 -155 -158	dBc/Hz	1 GHz "E" grade, available with slope option "L" only. May require package height .75" (19 mm)
		10 Hz 100 Hz 1 KHz 10 KHz 100 KHz		-80 -110 -138 -155 -160			1.28 GHz "E" grade **PRELIMINARY**
Retrace		After 30 minutes		±100		ppb	24 Hours off *
G-sensitivity		worst direction			±0.5	ppb/G	
Input Voltage	Vcc		4.75	5.0	5.25	V	
Power consumption, Still air	P	steady state, 25°C start-up @ -30°C		1.3 2.5	1.50	W	
Spectral Purity		Sub-harmonics Spurious Harmonics		-50	 -80 -15	dBc	Please contact factory for actual sub-harmonic's frequencies. It may vary by requirements
Load	Internally AC-coupled 50 Ohm						
Warm-up time	τ	to 0.1ppm accuracy		3	5	minutes	
Output Waveform		Sine-wave					
Output Power			+9	+12		dBm	
Control voltage	Vc		0 0		4.5 10.0	V	Option "P" Option "L"
Input impedance	Zin	At Vc pin	10			KOhm	
Modulation bandwidth	Fm		DC		1	KHz	Note 2
Pull range		from nominal F		±3.0		ppm	
Absolute Pull Range (If used in PLL shows what reference instability it can tolerate to lock over life)	APR	Over all conditions, Including Temperature, Vcc, Load Variations and 10 years aging	± 0.5			ppm	
Deviation slope		Monotonic, positive		1.5 0.8		ppm/V	Option "P" Option "L"

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Setability	Vc0	@25°C, Fnom.	2.25±0.5 5±0.5			V	Option "P" Option "L"
Reference Voltage	Vref			4.5		V	

Notes:

*. Longer storage time, especially at low temperatures, may affect both retrace and setability parameters. It may require few days on power for re-stabilization.

1. All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal Vcc & Nominal Load.

Environmental and Mechanical

Operating temp. range	-40 to 75°C; operable -40 to 85°C. See table below to specify
Storage temperature range	-50 to 90 °C
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 2000 Hz
Soldering Conditions	260°C for 10s Max leads only

Electrical Connections

Pin Out	Pin #1-Vc ; Pin#2 –Vref; Pin #3 – Vcc; Pin #4- GND ; Pin #5- RF OUT; Pin#6 – GND, Pin#7 –N/C or not present

Creating a Part Number

O - C E G M - 0 XX XX X X – Frequency

OCXO

Conventional Power

Multiplied

Package Code

Europack 36x27mm

Extra GND pin

Supply Voltage

Code	Specification
0	5V ± 5%

Temperature Stability

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

Environmental

Code	Specification
R	RoHS compliant, not designed for reflow
L	Contains a level of lead that is in excess of RoHS directive and is not designed for reflow

Slope Option

Code	Specification
P	0 to 4.5 V
L	0 to 10 V

Phase Noise Grade

Code	Specification
P	Premium
E	Extraordinary

Temperature Range

Code	In 5ºC steps **
First letter	Lowest temperature from A = -40ºC
Second letter	Highest temperature to Z = 85ºC
Examples	
IW	0°C to 70°C

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Not all combinations are available. Consult Factory.

****Temperature Code Table**

Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C
A	-40	**F**	-15	**K**	10	**P**	35	**U**	60	**Z**	85
B	-35	**G**	-10	**L**	15	**Q**	40	**V**	65		
C	-30	**H**	-5	**M**	20	**R**	45	**W**	70		
D	-25	**I**	0	**N**	25	**S**	50	**X**	75		
E	-20	**J**	5	**O**	30	**T**	55	**Y**	80		

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