

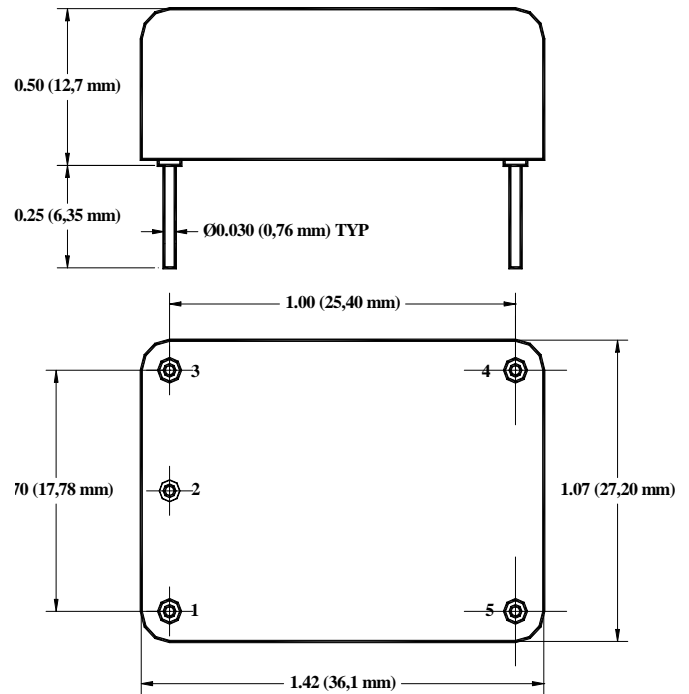
# OE-X8NXXXXXX-X

## Precision Ultra Low Phase Noise OCXO in 36x27 mm “Europack”

### Product Data Sheet

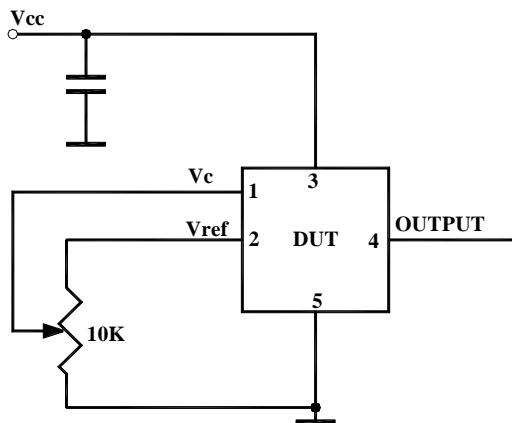
#### Features

- SC-cut crystal
- High Stability
- Low Aging
- Ultra Low Phase Noise Option:  
 Standard(L) -139dBc/Hz at 10Hz;  
                   -170dBc/Hz on the floor  
 Premium(P) -145dBc/Hz at 10Hz;  
                   -173dBc/Hz on the floor  
 Ultimate(U) -148dBc/Hz at 10Hz;  
                   -173dBc/Hz on the floor
- Sine Wave or HCMOS/TTL output



#### Applications

- Telecommunication Systems
- Data Communications
- GPS
- Instrumentation



## OE-X8NXXXXXX-X Series

Rev. C

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
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*Absolute Maximum Ratings*

<b>Input Break Down Voltage</b>	Vcc		-0.5		13.0	V	
<b>Storage temper.</b>	Ts		-40		85	°C	
<b>Control Voltage</b>	Vc		-1		9	V	

*Electrical*

<b>Frequency</b>	F		8	10.000	13	MHz			
<b>Frequency stability</b>	ΔF/F	vs. Temp.		±10		ppb	See chart below		
		vs. Supply		1	2	ppb/V			
<b>Aging</b>		per day per year		5E-10 1E-7			after 30 days See chart		
<b>Allan Variance</b>		.1s to 10s		1E-12					
<b>SSB Phase Noise (achieved after 10 minutes warm-up)</b>		1 Hz			-110	dBc/Hz	Standard version, option L		
		10 Hz			-139				
		100 Hz			-157				
				1 KHz			-162		
				10 KHz			-168		
				100 KHz			-170		
				1 Hz			-112		Premium version, option P
				10 Hz			-145		
				100 Hz			-158		
		1 KHz			-165				
		10 KHz			-170				
		100 KHz			-173				
		1 Hz			-115		Ultimate version, option U		
		10 Hz			-148				
		100 Hz			-158				
		1 KHz			-165				
		10 KHz			-170				
		100 KHz			-173				
<b>Retrace</b>		After 30 minutes			±10	ppb			
<b>G-sensitivity</b>		worst direction			±1.0	ppb/G			
<b>Input Voltage</b>	Vcc		4.75 11.4	5.0 12.0	5.25 12.6	V	See chart below to specify		
<b>Power consumption, Still air</b>	P	steady state, 25°C steady state, -30°C start-up @ -30°C		1.0 1.7 2.5	1.4 3.2	W	Standard Operating Temperature*		
<b>Spectral Purity</b>		Subharmonics Spurious Harmonics/Sine		none -35	-80 -30	dBc			
<b>Load</b>		10KOhm//15pF (HCMOS/TTL), 50 Ohm (Sinewave)							
<b>Warm-up time</b>	τ	to 0.1ppm accuracy		3	5	minutes			
<b>Output Waveform</b>		3.3V HCMOS/TTL compatible or Sinewave (+13± 3) dBm							
<b>Control voltage</b>	Vc		0		4.5	V			
<b>Pull range</b>		from nominal F	±0.3	±0.5		ppm			
<b>Deviation slope</b>		Monotonic, posit		0.2		ppm/V			
<b>Reference Voltage</b>	Vref			4.5		V			
<b>Setability</b>	Vc0	@25°C, Fnom.	1.5	2.25	3.0	V			

All parameters for 10 MHz

Note:

\* For high operating temperature higher than 70°C the power consumption will be higher (about 20% for 85°C).  
 Values listed are for test in still air environment, the values will go up while testing in the temperature chamber.



## OE-X8NXXXXXX-X Series

Rev. C

**Environmental and Mechanical**

<b>Operating temp. range</b>	-30°C to 70°C Standard, Other options – see chart below
<b>Mechanical Shock</b>	Per MIL-STD-202, 30G, 11ms
<b>Vibration</b>	Per MIL-STD-202, 5G to 2000 Hz
<b>Soldering Conditions</b>	260°C for 10s Max leads only

**Electrical Connections**

<b>Pin Out</b>	Pin #1-Vc ; Pin#2 – Vref; Pin #3 – Vcc; Pin #4- Output ; Pin #5- GND;
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### Creating a Part Number

**OE - X 8N X XX X X X - X - FREQ**

**Package Code**  
OE 5 pin 36x27mm

**Supply Voltage**

Code	Specification
0	5V ± 5%
F	12V ± 5%

**Output**

Code	Specification
T	TTL
S	Sinewave

**Temperature Stability**

Code	Specification
17	1x10 <sup>-7</sup>
58	5x10 <sup>-8</sup>
28	2x10 <sup>-8</sup>
18	1x10 <sup>-8</sup>
59	5x10 <sup>-9</sup>
YZ	Yx10 <sup>-Z</sup>

**Temperature Range**

Code	Specification
A	0°C to 50°C
B	0°C to 70°C
C	-20°C to 70°C
D	-40°C to 85°C
E	-10°C to 60°C
F	-40°C to 80°C
G	-30°C to 70°C

**Environmental**

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

**Phase Noise (See Table)**

Code	Specification
L	Standard
P	Premium
U	Ultimate

**Aging**

Code	Specification
L	1x10 <sup>-9</sup> /Day
S	5x10 <sup>-10</sup> /Day
P	2x10 <sup>-10</sup> /Day

Not all combinations are available. Consult Factory.

