



## Features and Benefits

Frequency range: 40-125MHz

Supply voltage: 5.0V

Steady current: 240mA Max

Output waveform: HCMOS or Sinewave

Frequency stability vs. operating temperature:  $\pm 50$ -200ppb

Aging:  $\pm 500$ ppb/year

Phase noise@10KHz: -175dBc/Hz

Operating temperature: -40°C --+85°C or -20°C --+70°C

Size: 20.7x13.1x8.5mm

## Typical Applications

Test & Measurement Equipment

Radar Systems

Instrumentation Reference

Satellite Communication

Avionics Systems

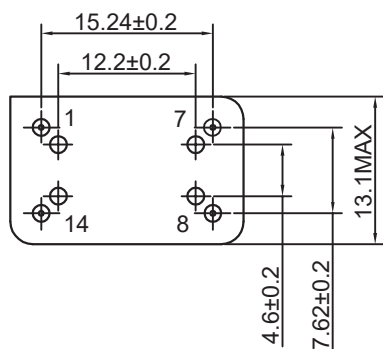
## Description

OCXO2013BJ-LN offers wide temperature operation from -40°C to +85°C with outstanding frequency stability and low phase noise performance.

## Mechanical Drawing & Pin Connections

Drawing No: MD220026-1

Bottom View



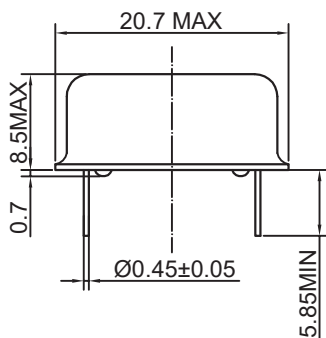
Pin Connections:

PIN #	CONNECTION
1	Control Voltage
7	Ground
8	RF Output
14	Supply Voltage

Unit in mm

1mm = 0.0394 inches

Side View





## Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F <sub>nom</sub>		40		125	MHz	
Output			HCMOS				
Output high level			3.6			V	
Output low level					0.4	V	
Output load			1K ohm // 10 pF				
Duty Cycle			40		60	%	
Rise/Fall time		20%-80%			3	nS	
Output			Sinewave				
Output load				50		ohm	
Output Power					+8	dBm	
Harmonic					-30	dBc	
Spurious					-80	dBc	
<b>Power Supply</b>							
Voltage	V <sub>cc</sub>	±5%		5.0		V	
Warm up time		within ± 0.1 ppm referred to final frequency after 1 hour			5	min	
Current Consumption		Steady			240	mA	
		Warm up			600	mA	
<b>Frequency Control</b>							
Frequency Control Range			±2.0			ppm	
Control voltage range	V <sub>c</sub>		0		+5.0	V	
Tuning Slope			positive				
Linearity					10	%	
<b>Frequency Stability</b>							
Versus temperature						ppb	See ordering information
Initial frequency tolerance		after 30 min power ON			±200	ppb	
Versus ±5% change in supply voltage					±30	ppb	
Versus ±5% change in load					±10	ppb	
Aging per day		after 30 days of continuous operation			±5.0	ppb	
Aging 1 <sup>st</sup> year					±500	ppb	
Aging 10 years					±1.7	ppm	
Phase Noise							See ordering information
Short term stability (Allan Deviation)		@ tau = 1 sec			5	e-11	
G-Sensitivity (worst axis)					1	ppb/g	
<b>Environmental Conditions</b>							
Storage temperature range		-45°C to +90°C					

Test conditions: V<sub>cc</sub> = +5 V, V<sub>c</sub> = +2.5 V; T<sub>a</sub> = +25 ± 3 °C unless otherwise stated



## Ordering Information

OCXO2013BJ-LN	-	100MHz	-	x	x	x	x
Group				01	02	03	04

For example, OCXO2013BJ-LN-100MHz-1-1-1-1 denotes the OCXO has the following specifications:

Temperature Range:	-20°C to +70°C
Stability Over Temperature:	±50ppb
Output:	HCMOS
Phase Noise:	-97dBc/Hz@10Hz
	-130dBc/Hz@100Hz
	-160dBc/Hz@1KHz
	-173dBc/Hz@10KHz
	-177dBc/Hz@100KHz
	-178dBc/Hz@1MHz

01	Temperature Range
Code	Specification
1	-20°C to +70°C
2	-40°C to +85°C

02	Frequency Stability
Code	Specification
1	±50ppb*
2	±100ppb
3	±200ppb

\*Note: Only for -20°C to +70°C

03	Output
Code	Specification
1	HCMOS
2	Sinewave

04	Phase Noise @100MHz	
Code	Specification	
1	10Hz	<=-97dBc/Hz
	100Hz	<=-130dBc/Hz
	1KHz	<=-160dBc/Hz
	10KHz	<=-173dBc/Hz
	100KHz	<=-177dBc/Hz
	1MHz	<=-178dBc/Hz
2	10Hz	<=-102dBc/Hz
	100Hz	<=-135dBc/Hz
	1KHz	<=-162dBc/Hz
	10KHz	<=-175dBc/Hz
	100KHz	<=-177dBc/Hz
	1MHz	<=-178dBc/Hz