



### Features and Benefits

Frequency range: 10-120MHz  
Supply voltage: 3.3/5.0V  
Steady state: 1.5W Typ  
Output waveform: Sinewave or CMOS/TTL  
Frequency stability vs. operating temperature:  $\pm 20.0$ ppb  
Aging:  $\pm 100$ ppb per year  
Phase noise@1KHz: -145dBc/Hz  
Operating temperature: -40°C to +85°C  
Size:20.6x20.6x12.7mm

### Typical Applications

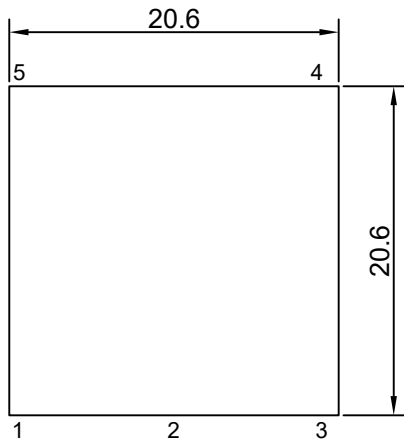
Cellular Base Stations  
Instrumentation  
Microwave Applications  
Radar reference

### Description

The OCXO2021AX is designed for applications where exceptional frequency stability and timing is required. It has both excellent temperature performance and short-term stability. These characteristics make it an excellent choice for timing applications.

### Mechanical Drawing & Pin Connections

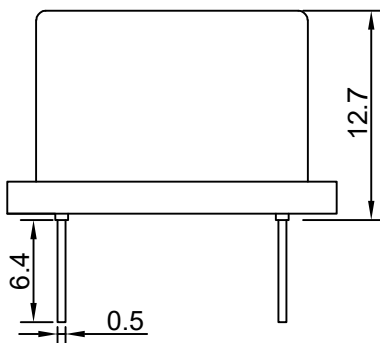
**Drawing No:** MD240009-1



#### Pin Connections

Pin	Function
1	Supply Voltage
2	Output
3	GND
4	Control Voltage/N.C.
5	N.C.

Unit in mm  
1mm = 0.0394 inches





**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range	F <sub>nom</sub>		10		120	MHz	
<b>RF Output</b>							
Signal Waveform			CMOS/TTL				
Load	R <sub>L</sub>			15		pF	
H-Level Voltage	V <sub>H</sub>		90%V <sub>cc</sub>			V	
L- Level Voltage	V <sub>L</sub>				10%V <sub>cc</sub>	V	
Duty Cycle			45	50	55	%	
Rise/Fall time					5	ns	
Signal Waveform			Sinewave				
Level				+9		dBm	
Load			45	50	55	ohm	
Harmonics					-30	dBc	
Spurious					-70	dBc	
<b>Power Supply</b>							
Supply Voltage	V <sub>cc</sub>			3.3/5.0		V	
Warm-up Time	T <sub>up</sub>	To initial tolerance			3	min	
Power Consumption		Steady state, +25°C		1.5		W	
		Warm-up			3.5	W	
<b>Frequency Adjustment Range</b>							
Electronic Frequency Control (EFC)			±0.5 or ±1.0			ppm	
EFC voltage	V <sub>c</sub>		0	V <sub>cc</sub> /2	V <sub>cc</sub>	V	
Input Impedance				100		kΩ	
Linearity				10		%	
EFC Slope				positive			
<b>Frequency Stability</b>							
Versus Operating Temperature Range		Max-Min/2		±20, ±50 or ±100		ppb	
Initial Tolerance		+25°C±1 °C			±100	ppb	
Versus supply voltage		±5% change		±2		ppb	
Versus load		±5% change		±2		ppb	
Aging Per Day		after 30 days of operation			±1.0	ppb	
Aging 1 <sup>st</sup> Year						±100	ppb
Allan Variance		1s		5		e-11	
SSB Phase noise (10MHz) (Typical value)				Sine	CMOS		@+25°C
		10Hz		-120	-120	dBc/Hz	
		100Hz		-140	-140	dBc/Hz	
		1kHz		-145	-145	dBc/Hz	
		10kHz		-155	-150	dBc/Hz	
SSB Phase noise (100MHz) (Typical value)				Sine	CMOS		@+25°C
		10Hz		-90	-90	dBc/Hz	
		100Hz		-120	-120	dBc/Hz	
		1kHz		-145	-140	dBc/Hz	
		10kHz		-155	-145	dBc/Hz	
	100kHz		-155	-150	dBc/Hz		
<b>Environmental, Mechanical Conditions</b>							
Operating temperature range	0°C to +70°C, -20°C to +70°C, -40°C to +85°C						
Storage temperature range	-55°C to +100°C						
Mechanical shock	MIL-STD-202 Method 213 Test Condition C						
Seal	MIL-STD-202 Method 112 Test Condition D						
Vibration	MIL-STD-202 Method 201						
Acceleration Sensitivity	10MHz output, Vibration profile: 0.001G <sup>2</sup> /Hz 10Hz to 2kHz. Value is 1.0 ppb/g						