



# Dynamic Engineers Inc.

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**OCXO3309**  
Ultra-low Power Fast Warm-Up OCXO

## Features and Benefits

- Low Power ( 0.15W at 25°C )
- Very small package
- Fast Warm-up ( 15 to 60 seconds depending on maximum ambient temperature required )
- Excellent temperature stability

## Typical Applications

- Portable and low Power Wireless
- Mobile Test Equipment
- Battery powered applications
- Beacons and Rescue Systems

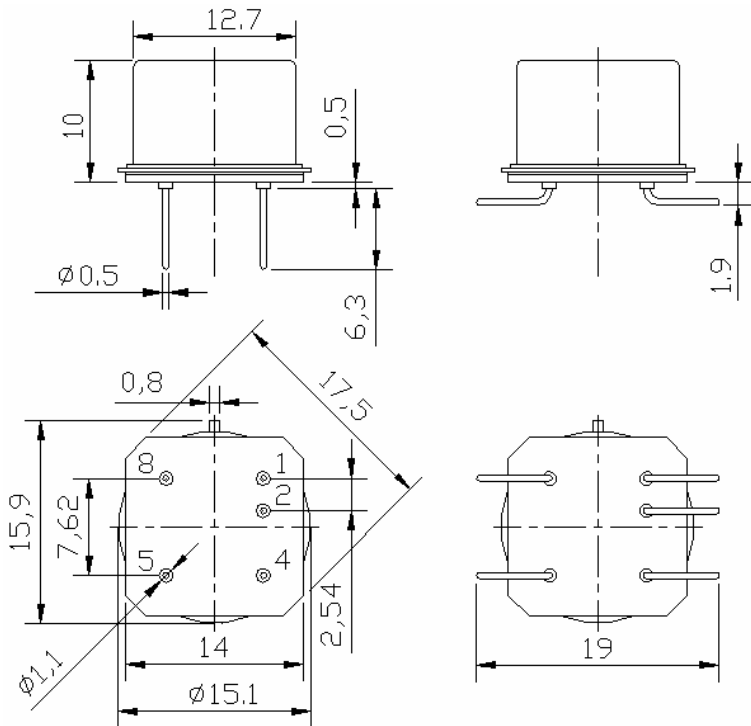
## Description

The OCXO3309 ovenized oscillator employs a directly heated crystal process which delivers very fast warm-up, SC-cut phase noise and frequency long term stability in a very small industry-standard package.

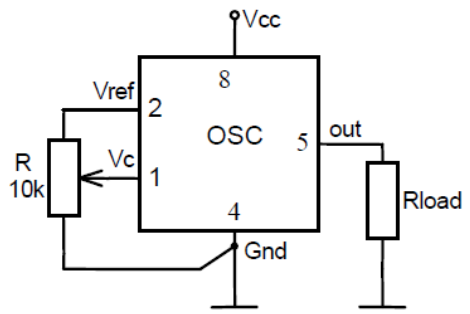
## Mechanical Drawing & Pin Connections

Drawing No: n/a

## Picture of Part



Pin	Signal
1	Electrical tuning
2	Reference voltage
3	GND
4	RF Out
5	+V Supply





**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note	
			Min.	Typ.	Max.			
Operational Frequency Range	$f_0$		5		50	MHz		
HCMOS/ TTL compatible option  N/A	Load				15	pF	In parallel with 10 kOhm	
	H - level voltage	$V_H$	3.9			V		
	L - level voltage	$V_L$			0.4	V		
	Rise & Fall time				10	ns		
	Duty cycle			45	50	55	%	
Sine-wave option	Level	L	NO sine wave option				dBm	
	Load	$R_L$					Ohm	
	Harmonics						dBc	
Subharmonics						dBc		
<b>Power Supply</b>								
Voltage	$V_{cc}$		4.75	5.0	5.25	V	3.3 volt option available	
Power consumption		Warm-up		0.7		W		
		Steady-state, +25°C		0.15		W		
Warm-up Time:	$t_{up}$	To within $\pm 1e-7$ , at +25°C	15		60	sec	ref. frequency after 10 min.	
<b>Frequency Control*</b>								
Control voltage range	$V_c$	5V supply	0		4.3	V	Tuning Slope Positive	
		3.3V supply	0		2.8	V		
Tuning range			$\pm 0.5$		$\pm 1.0$	ppm	For 10 MHz	
Reference voltage Output	$V_{ref}$	5V supply	4.19	4.30	4.41	V		
		3.3V supply	2.73	2.80	2.87	V		
<b>Frequency Stability</b>								
Versus temperature		-30°C to +70°C, ref 25°C		$\pm 50$		ppb	Standard selection	
Versus 5% change in supply voltage		ref $V_{cc}$ typ.		$\pm 2$		ppb		
Versus acceleration		Worst direction			1.0	ppb/G		
Aging Per Day		Projected aging after 30 days operation			$\pm 0.5$	ppb	For 10 MHz	
Aging Per Year					$\pm 0.05$	ppm		
SSB Phase noise		1 Hz		-90		dBc/Hz	For 10 MHz	
		10 Hz		-125				
		100 Hz		-145				
		1000 Hz		-155				
		10 KHz		-165				
<b>Environmental Conditions</b>								
Operating temperature range	-40°C to +85°C maximum range available that is standard							
Storage temperature range	-60°C to +90°C							
Humidity	Non-condensing 95%							
Mechanical shock	Per MIL-STD 202 30G half sine pulse, 11 ms							
Vibration	Per MIL-STD 202 10G swept sine 10 to 2000 Hz							
Soldering Condition	+260°C for 10 seconds							