



Features and Benefits

Frequency range: 40MHz
Supply voltage: 5.0V
Steady current: 50mA Max.
Output waveform: CMOS
Frequency stability vs. operating temperature: ± 50 ppb
Aging: ± 0.15 ppm first year
Phase noise@100KHz: -163dBc/Hz
Operating temperature: -40°C to +85°C
Size: 16x15.3x9.5mm

Typical Applications

Portable and Low Power Wireless
Mobile Test Equipment
Battery Powered Applications
Beacons and Rescue Systems

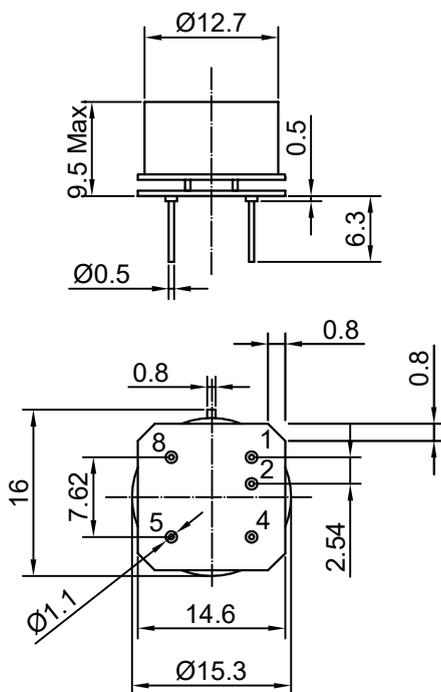
Description

The OCXO3309-40MHz-A-V 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.

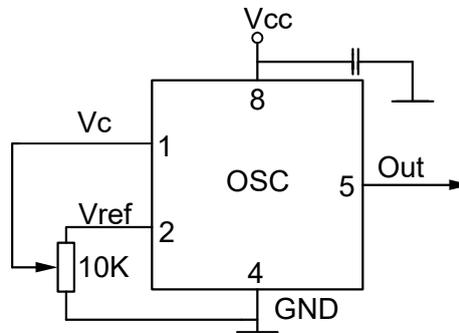
Mechanical Drawing & Pin Connections

Drawing No: MD170001-3

Physical dimensions



Schematic connections



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

Unit in mm
1mm = 0.0394 inch



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	f_0			40		MHz	
Initial Tolerance	$(f-f_0)/f_0$	@+25°C, $V_c=V_{c0}$	-0.1		0.1	ppm	+
RF Output							
Waveform			CMOS				
Load	R_L		10			KOhm	
	C_L				10	pF	
High-Voltage	V_H		3.8			V	
Low-Voltage	V_L				0.4	V	
Duty Cycle	T_s		45	50	55	%	
Frequency Control							
Input Impedance	R_{in}			11		KOhm	
Preset Control Voltage	V_{c0}	Disconnected V_c Pin	2.0	2.1	2.2	V	
Control Voltage Range	V_c		0		4.2	V	
Tuning Range	$(f_L-f)/f$	$V_c=0V$			-1	ppm	+
	$(f-f)/f$	$V_c=V_{c0}$		0		ppm	
	$(f_H-f)/f$	$V_c=V_{ref}$	1			ppm	+
Slope			positive				
Reference Voltage	V_{ref}		4.1	4.2	4.3	V	
Power Supply							
Voltage	V_{cc}		4.75	5.0	5.25	V	
Power Consumption		Warm-up			220	mA	$V_{cc}=5V$
		Steady state, @+25°C			50	mA	$V_{cc}=5V$
Warm-up Time:	T_F	@+25°C, to $df/f=1e-7$		60	90	s	ref.at 15 min
Frequency Stability							
Versus Temperature		ref 25°C			±50	ppb	+
Versus Supply Voltage		Ref V_{cc} typ.			±2	ppb	
Aging	Per day	After 30 days of operation			±1.5	ppb	
	First Year				±0.15	ppm	
Allan Variance	0.1s	0.1s. 100KHz BW		20		e-12	
SSB Phase noise (Static Values are for reference only and are subject to change)		10 Hz		-110		dBc/Hz	
		100 Hz		-140			
		1 KHz		-155			
		10 KHz		-163			
		100 KHz		-163			
Environmental Conditions							
Operating Temperature Range		-40°C to +85°C					
Storage Temperature range		-60°C to +85 °C					
Air Flow Velocity		0.5m/s maximum					
Humidity		Non-condensing 95%					
Mechanical Shock		Per MIL-STD-202, 30G, 11ms					
Vibration		Per MIL-STD-202, 5G to 2000 Hz					
Soldering Conditions		Hand solder only – not reflow compatible 260°C 10s (on pins)					
Washing Conditions		Washing with water or alcohol based detergent allowed only with final enough drying stage					

Note: * included in the test data