



Features and Benefits

- Wide frequency range up to 3 decimals from 8MHz to 150MHz
- Special Extended temperature operation to -55°C or -60°C
- High stability: up to ±2ppb from -40°C to +85°C
- As low as ±20ppb stability at extreme cold limits
- Very Low Power Consumption: 0.18W at +25°C
- Low Phase Noise: -172dBc/Hz floor
- Fast Warm-up: 60s–typical, 30s–optional
- Low Aging: 0.1ppb/day, 15pp/year
- Available SMD or 14DIP compatible 9.5mm Height Packaging

Typical Applications

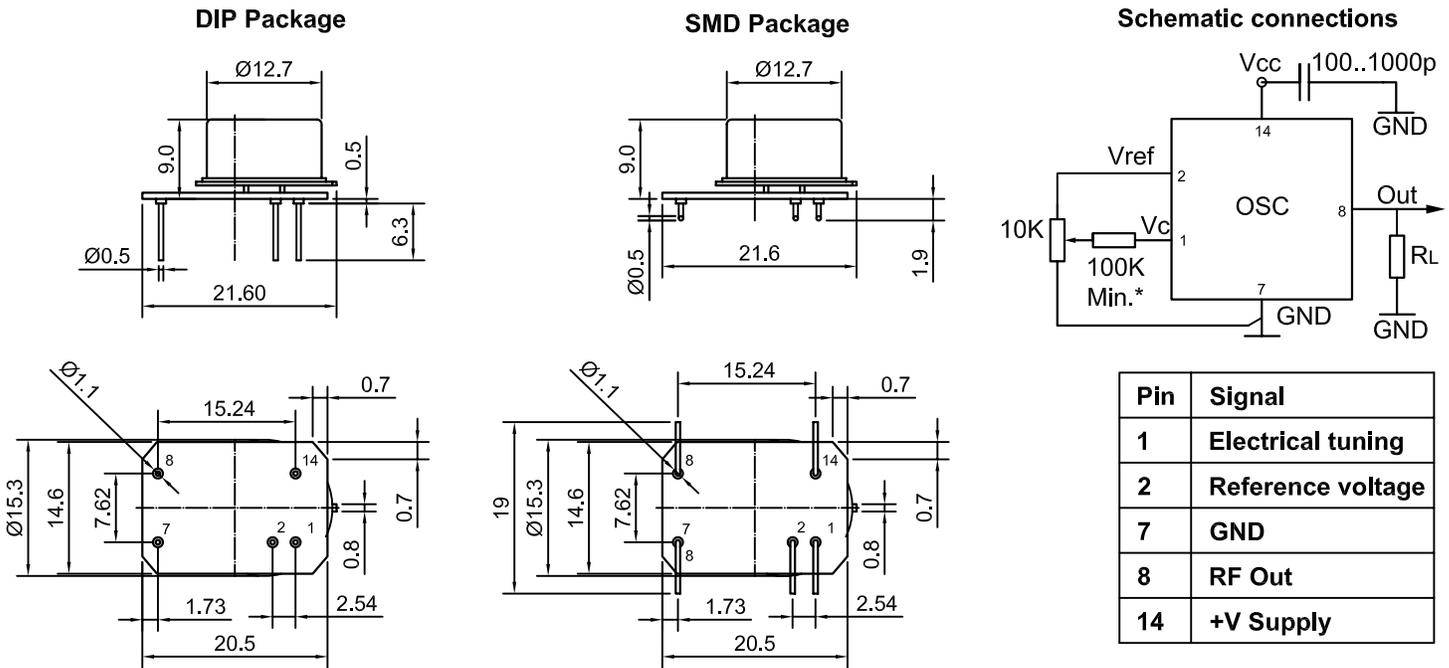
- Synthesizers
- Portable Wireless Communication
- Battery Powered Applications
- Mobile Test Equipment

Description

OCXO3307C-ET series utilizes the internal heating resonator (IHR) technology incorporating the whole oven system together with the crystal plate inside the vacuum holder. Such OCXO concept results in radical reduction of its volume, power consumption and warm-up time. The OCXO3307C-ET incorporates improved oscillator circuitry providing essentially better temperature stability at the same miniature sizes, extremely low power consumption and low phase-noise level.

Mechanical Drawing & Pin Connections

Drawing No:MD140076-3



Pin	Signal
1	Electrical tuning
2	Reference voltage
7	GND
8	RF Out
14	+V Supply

Unit : mm
 1mm=0.0394inch



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ	Max.		
Frequency Range	F ₀		8.000		150.000	MHz	
RF Output							
Output Wave Form			Sine wave				
Sine-Wave Option	Level	V _{CC} =5V V _{CC} =3.3V	+7 +4			dBm	
	Load	R _L		50		Ohm	
	Harmonics level				-25	dBc	
Sub-Harmonics level			none			dBc	
Power Supply							
Voltage	V _{CC}		4.75 3.15	5.00 3.3	5.25 3.45	V	
Power Consumption		Warm-up state Steady-state+25°C		180	1200	mW	10 MHz -40°C to 85°C
Warm-up time	t _{up}	@+25°C to Δf/f=1e-8 @+25°C to Δf/f=1e-7	30	120 60		s	Ref. to freq. after 15 min. work
Frequency Control							
Control Voltage	V _c	V _{CC} =5V V _{CC} =3.3V	0		4.3 3.0	V	
Tuning Voltage		Compliance with 10 years of aging	±0.3	±1.0		ppm	positive slope
Reference Voltage	V _{ref}	V _{CC} =5V V _{CC} =3.3V	4.0 2.5		4.3 3.1	V	
Frequency Stability							
VS. Tolerance	(f-f ₀)/f ₀	+25°C, V _C =0.5*V _{ref}		±0.1		ppm	
VS. Temperature		Ref. +25°C	±2			ppb	See ordering codes
VS Supply voltage		Ref V _{CC} typ		±2		ppb	
VS.Acceleration		Worst direction	±0.3	±1.0		ppb/G	
Retrace		24h work after 24h off			±10	ppb	10 MHz
Phase Noise							
Phase noise		1Hz	-105/----		-90/----	dBc/Hz	10/100 MHz V _{CC} =5V
		10 Hz	-135/-100		-120/-90		
		100 Hz	-155/-130		-145/-120		
		1 kHz	-165/-155		-155/-150		
		10 kHz	-170/-170		-165/-165		
	100 kHz	-172/-172		-165/-165			
Allan Variance		1 s	3		40	e-12	10 MHz
Aging	Per day First year	See Order Options for Aging as Function of Operating Frequency.					



Specifications

Environmental Conditions	
Parameter	Reference Std.
Operating temperature range	Please refer to the ordering options information below
Storage temperature range	-60°C to +85°C
Power Voltage	-0.5V to V _{CC} +20%
Control Voltage	-0.5V to 6V
Humidity	Non-condensing 95%
Mechanical Shock	Per MIL-STD-202, 30G half sine pulse, 11ms
Vibration	Per MIL-STD-202, 10G swept sine 10 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

Ordering Options Codes		
Part Number: OCXO3307C-ET-xxx.yyyMHz-Z-W-S-A		
Codes	Description	Ordering Options
xxx.yyy	Operating Frequency up to 3 decimals	8.000 to 150.000
Z	Power Supply	1 = 5V 2 = 3.3V
W	Operating Temperature Range	1 = -40°C to +85°C 2 = -55°C to +85°C 3 = -60°C to +85°C
S	Stability over Operating Temperature	20 = ±20 ppb 30 = ±30 ppb 50 = ±50 ppb 100 = ±100 ppb
A	Yearly Aging based on operating frequency	1 = ≤10 MHz; less than ±30 ppb/year 2 = ≤20 MHz; less than ±50 ppb/year 3 = ≤40 MHz; less than ±100 ppb/year 4 = ≤100 MHz; less than ±200 ppb/year 5 = ≤150 MHz; less than ±500 ppb/year
SMD or DIP	Packaging	Either SMD or DIP added to the end of part number at the time of order placement
Example : OCXO3307C-ET-149.152MHz-1-3-100-5 with SMD package		
Code	Description	Value
149.152	Operating Frequency	149.152 MHz
1	Power Supply	+5V
3	Operating Temperature Range	-60°C to +85°C
100	Stability over Operating Temperature	±100 ppb
5	Yearly Aging based on operating frequency	≤500 ppb per year
With SMD	Packaging style	SMD package