

OVEN-CONTROLLED CRYSTAL OSCILLATOR

Data Sheet 2343C

Rev A

O-CEGM-0175Z10-CS-HTX

Low Phase Noise 1.280 GHz OCXO in 36x27 mm “Europack”

Product Data Sheet

Description

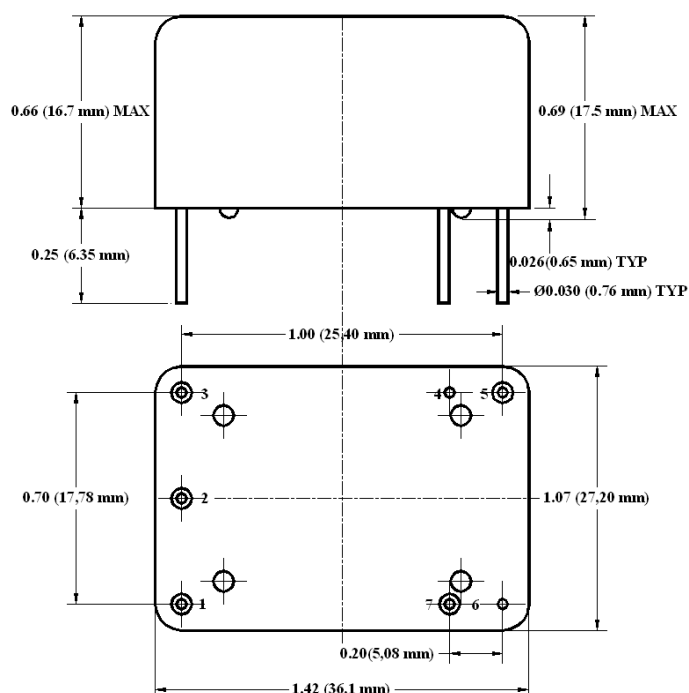
O-CEGM-0175Z10-CS-HTX is based on lower frequency SC-cut OCXO with Low Noise analog multiplier to achieve 1.280 GHz output frequency.

Features

- 1.280 GHz
- Very Low Phase Noise
- Low Spurious
- +10 dBm Sine Wave output

Applications

- Instrumentation
- Telecommunication Systems
- Radar
- GPS
- COTS/Dual use



**FREQUENCY
CONTROLS**

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Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Absolute Maximum Ratings							
Input Break Down Voltage	V _{cc}	5 V supply	-0.5		5.5	V	
Storage temper.	T _s		-55		105	°C	
Control Voltage	V _c		-1		5.5	V	
Electrical (1)							
Frequency	F			1,280		MHz	
Frequency stability	$\Delta F/F$	vs. Temp.		±100		ppb	See chart below *
		vs. Supply		2	3	ppb/10%V _{cc}	
Aging		per day first year 10 years		5E-9 3E-7	2E-6		after 30 days
Allan Deviation		.1s to 10s		1E-10			
SSB Phase Noise	S _φ	10 Hz		-80	-76	dBc/Hz	
		100 Hz		-112	-109		
		1 KHz		-137	-135		
		10 KHz		-153	-151		
		100 KHz		-157	-154		
Retrace		After 30 minutes		±100		ppb	24 Hours off * See Note 1
G-sensitivity		worst direction			±0.7	ppb/G	
V _{cc} Ripple rejection				TBD			
Input Voltage	V _{cc}		4.75	5.0	5.25	V	
Power consumption, Still air	P	steady state, 25°C		1.5	1.60	W	
		start-up @ -30°C		3.5	4.0		
Spectral Purity		Sub-harmonics		-50	-45	dBc	128 MHz and multiples
		Spurious		-80			
		Harmonics			-45		
Load		Internally AC-coupled 50 Ohm					
Warm-up time	τ	to 0.1ppm accuracy		3	5	minutes	
Output Waveform		Sine-wave					
Output Power			+10			dBm	
Control voltage	V _c		0		4.5	V	
Input impedance	Z _{in}	At V _c pin	10			KOhm	
Modulation bandwidth	F _m		150			Hz	
Pull range		from nominal F		±2.5		ppm	
Absolute Pull Range	APR	Note 2	± 0.5			ppm	See Note 2
Deviation slope		Monotonic, positive		1.2		ppm/V	
Setability	V _{c0}	@25°C, F _{nom} .		2.25±0.5		V	
Reference Voltage	V _{ref}			4.5		V	
Start-up Time		To the output power level of 5dBm			1	S	At -54°C

Notes:

1. Longer storage time, especially at low temperatures, may affect both retrace and setability parameters. It may require few days on power for re-stabilization.
2. If used in a PLL application, this specification shows what reference instability it can tolerate to lock over life, over all conditions including temperature, V_{cc}, load variations, and 10 years aging.
3. All parameters, unless otherwise specified, are at nominal conditions, i.e.: T=25°C, Nominal V_{cc} & Nominal Load.
4. The device internally employs **hermetically sealed multiplier**.
5. The device internally employs **thermal transfer tape** instead of silicone epoxy for TO5 crystal mounting.



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Environmental and Mechanical

Operating temp. range	-40°C to 70°C (Operable -54°C to 85°C)
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 2000 Hz
Soldering Conditions	260°C for 10s Max leads only

Electrical Connections

Pin Out	Pin #1-Vc; Pin#2 -Vref; Pin #3 – Vcc; Pin #4- GND ; Pin #5- RF OUT; Pin#6 – GND, Pin#7 –N/C or not present
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Creating a Part Number

OCXO **C** **E** **G** **M** **-** **0** **17** **5Z** **10** **-** **CS** **-** **H** **T**^{2*} **X** **-** **1.280 GHz**

Conventional Power **Multiplied** **Environmental**

Package Code **Extra GND pin**

Supply Voltage

Code	Specification
0	5V ± 5%

Temperature Stability

Code	Specification
17	1x10 ⁻⁷ *

Cold Start

APR

Insert Value in 1E-7	
Examples	
10	1 ppm

Temperature Range

Code	In 5°C steps **
First letter	Lowest temperature from A = -40°C
Second letter	Highest temperature to Z = 85°C
5Z	-54°C to 85°C *

* Temperature stability of ±100ppb for operating range of -40°C to 70°C only.
Stability -54°C to -40°C and from 70°C to 85°C is ±1ppm
Operable -54°C to +85°C

2* T reflects the internal construction using thermal transfer tape for TO5 crystal mounting instead of silicone epoxy.



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