

# OVEN-CONTROLLED CRYSTAL OSCILLATOR

Data Sheet 2343C

## O-CEGM-0175Z10-CS-HTX Low Phase Noise 1.280 GHz OCXO in 36x27 mm “Europack”

Rev A

### Product Data Sheet

#### Description

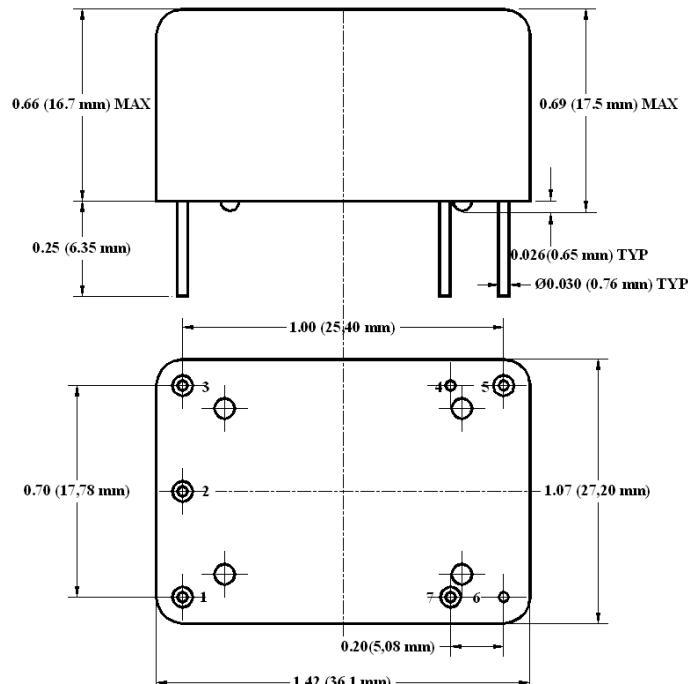
O-CEGM-0175Z10-CS-HTX is based on lower frequency SC-cut OCXO with Low Noise analog multiplier to achieve 1.280 GHz output frequency.

#### 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
<i>Absolute Maximum Ratings</i>							
<b>Input Break Down Voltage</b>	Vcc	5 V supply	-0.5		5.5	V	
<b>Storage temper.</b>	Ts		-55		105	°C	
<b>Control Voltage</b>	Vc		-1		5.5	V	
<i>Electrical (1)</i>							
<b>Frequency</b>	F			1,280		MHz	
<b>Frequency stability</b>	ΔF/F	vs. Temp.		±100		ppb	See chart below *
		vs. Supply		2	3	ppb/10%Vcc	
<b>Aging</b>		per day first year 10 years		5E-9 3E-7	2E-6		after 30 days
<b>Allan Deviation</b>		.1s to 10s		1E-10			
<b>SSB Phase Noise</b>	Sφ	10 Hz 100 Hz 1 KHz 10 KHz 100 KHz		-80 -112 -137 -153 -157	-76 -109 -135 -151 -154	dBc/Hz	
<b>Retrace</b>		After 30 minutes		±100		ppb	24 Hours off * See Note 1
<b>G-sensitivity</b>		worst direction			±0.7	ppb/G	
<b>Vcc Ripple rejection</b>				TBD			
<b>Input Voltage</b>	Vcc		4.75	5.0	5.25	V	
<b>Power consumption, Still air</b>	P	steady state, 25°C start-up @ -30°C		1.5 3.5	1.60 4.0	W	
<b>Spectral Purity</b>		Sub-harmonics Spurious Harmonics		-50 -80	-45	dBc	128 MHz and multiples
<b>Load</b>	Internally AC-coupled 50 Ohm						
<b>Warm-up time</b>	τ	to 0.1ppm accuracy		3	5	minutes	
<b>Output Waveform</b>							
Sine-wave							
<b>Output Power</b>			+10			dBm	
<b>Control voltage</b>	Vc		0		4.5	V	
<b>Input impedance</b>	Zin	At Vc pin	10			KOhm	
<b>Modulation bandwidth</b>	Fm		150			Hz	
<b>Pull range</b>		from nominal F		±2.5		ppm	
<b>Absolute Pull Range</b>	APR	Note 2	± 0.5			ppm	See Note 2
<b>Deviation slope</b>		Monotonic, positive		1.2		ppm/V	
<b>Setability</b>	Vc0	@25°C, Fnom.		2.25±0.5		V	
<b>Reference Voltage</b>	Vref			4.5		V	
<b>Start-up Time</b>		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, Vcc, load variations, and 10 years aging.
3. All parameters, unless otherwise specified, are at nominal conditions, i.e.: T=25°C, Nominal Vcc & 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

**O - C E G M - 0 17 5Z 10 - CS -H T<sup>2</sup>\*X - 1.280 GHz**

**Conventional Power**      **Environmental**  
**Package Code**      **Code**      **Specification**  
 Europack 36x27mm      R      RoHS compliant, not designed for reflow  
**Supply Voltage**      L      Contains a level of lead that is in excess of RoHS directive and is not designed for reflow

Code	Specification
0	5V ± 5%

## Temperature Stability

Code	Specification
17	1x10 <sup>-7</sup> *

## 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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