Vectron™ a **Microchip** company

Helping Customers Innovate, Improve & Grow

OX-080

Features

- Ultra Low g-Sensitivity
- Low Phase Noise
- High Stability
- Frequency Range: 8 MHZ to 15 MHZ
- Standard Frequency 10 MHz
- Vibration Compensation

Applications

- Military Avionics
- Airborne Radar
- Test Equipment
- Frequency Synthesizers
- Position Location
- Satellite Communications
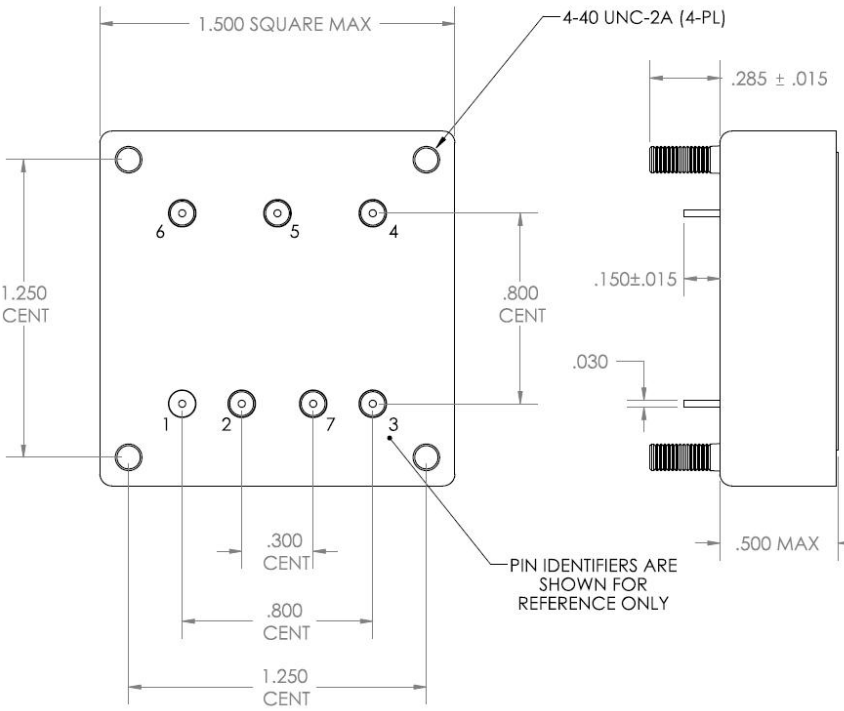
Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
Available Frequencies					
Frequency Range	8		15	MHz	
G-Sensitivity Performance					
Standard crystal			1	ppb/g	
G Sensitivity w\ Low g-Crystal			0.2	ppb/g	
G Sensitivity w\ Low g-Crystal & Vibration compensation			0.02	ppb/g	Degrades to 0.2 ppb/g above 250 Hz
(No mechanical resonances out to 2KHz)					G sensitivity specified per axis
For oscillators with 0.1 ppb/g out to 2 KHz contact factory.					
Frequency Stabilities[1] (Stabilities listed for 10 MHz. For Stabilities above 10 MHz values may degrade. Please contact factory.)					
vs. Operating Temperature Range (referenced to +25°C)	-30		+30	ppb	-40… +85°C
	-20		+20	ppb	-40… +70°C
	-10		+10	ppb	-20… +70°C
	-5		+5	ppb	0… +70°C
Initial Tolerance	-50		+50	ppb	at time of shipment, nominal EFC
vs. Supply Voltage Change	-2.0		+2.0	ppb	Vs ± 5%
vs. Load Change	-2.0		+2.0	ppb	Load ± 5%
vs. Aging / Daily	-0.5		+0.5	ppb	after 72 hours of operation
vs. Aging / 1st Year	-40		+40	ppb	after 72 hours of operation
vs. Aging / Year (following years)	-30		+30	ppb	
Retrace[2]	-20		+20	ppb	

Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
Supply Voltage (Vs)					
Supply voltage	11.4	12.0	12.6	VDC	
Oven Power Consumption			10..0	Watts	during warm-up all temperatures
			3.0	Watts	steady state @ +25°C
			7.0	Watts	steady state @ -40°C
			1.0	Watts	steady state @ +70°C
RF Output					
Start Time		1	2	s	time required to achieve 90% of amplitude
Signal		Sinewave			
Load		50		Ohm	
Output Power	+6.0	+7.0	+8.0	dBm	
Harmonics			-30	dBc	
Frequency Tuning (EFC)					
Tuning Range	±0.5	±0.8	±2.0	ppm	Electronic frequency control
Linearity			20	%	
Tuning Slope		Positive			
Control Voltage Range	0.0	+4.0	+8.0	VDC	
Input Impredance	20			kOhm	
Modulation Bandwidth	150			Hz	
Phase Noise					
Phase Noise[3] standard(@ 10 MHZ) (under static conditions - no vibration)		-100	-95	dBc/Hz	1 Hz
		-130	-127	dBc/Hz	10 Hz
		-155	-152	dBc/Hz	100 Hz
		-166	-163	dBc/Hz	1 KHz
		-168	-165	dBc/Hz	10 KHz

Parameter	Min	Typ	Max	Units	Condition
Additional Parameters[1]					
Weight			100	g	
Absolute Maximum Ratings					
Supply voltage (Vs)			28	V	
Output Load	25		open	ohm	
Operable Temperature Range	-55		+85	°C	
Environmental Specifications					
Shock (Operating)	MIL-STD-202, Method 213, Condition J, 30G, 11ms, half sine				
Shock (Endurance)	Mil-STD-202, Method 213, Condition C, 100G, 6ms, half sine				
Sine Vibration (Operating)	Mil-STD-202, Method 204, Condition C, 10 G				
Sine Vibration (Endurance)	Mil-STD-202, Method 204, Condition D, 20 G				
Random Vibration (Operating)	Mil-STD-202, Method 214, Condition I-C, 9.26 Grms (without vibe comp) Mil-STD-202, Method 214, Condition I-A, 5.35 Grms (with vibe comp)				
Random Vibration (Endurance)	Mil-STD-202, Method 214, Condition I-H, 29.28 Grms				
Seal	Mil-STD-202, Method 112, Condition D				
Humidity	MIL-STD-202, Method 103, Condition B, 90% rh				
Altitude	MIL-STD-202, Method 105, sea level to 30,000 ft				
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition A,B,C				
RoHS	not RoHS compliant				
Terminal Strength	MIL-STD-202, Method 211, Condition C (5 bends at 45°, 2 lbs)				
Moisture Sensitivity Level	1				
Storage Temperature Range	-55		+125	°C	

1.500 SQUARE MAX

4-40 UNC-2A (4-PL)

.285 ± .015

Dimensions in inches

1.250 CENT

.800 CENT

.150±.015

.030

.300 CENT

.800 CENT

1.250 CENT

.500 MAX

PIN IDENTIFIERS ARE SHOWN FOR REFERENCE ONLY

Package configuration A		
ordering code	Height "H"	
0	0.50	

Pin Connections	
1	Ground (Case)
2	RF Output
3	Electronic Frequency Control (EFC)
4	Supply Voltage
5	Vectron Internal Use Only / NC
6	Supply Voltage
7	Vectron Internal Use Only / NC

Ordering Information[4]

OX - 080 0 - A E T-509 0 - 10M0000000

Product Family
OX: OCXO

Package
38x38 mm

Mounting Style
0: Type A

Supply Voltage
B: 12 Vdc

RF Output Code
E: Sinewave

Temperature Range / Stability Code
E-308: -40°C to +85°C, ±30 ppb
D-208: -40°C to +70°C, ±20 ppb
J-108: -20°C to +70°C, ±10 ppb
T-509: 0°C to +70°C, ±5 ppb

Platform Code
Low G, Compensation option, Phase noise
0: Standard Crystal
1: Low G Crystal
3: Low G-Crystal, w\vibe comp

Frequency
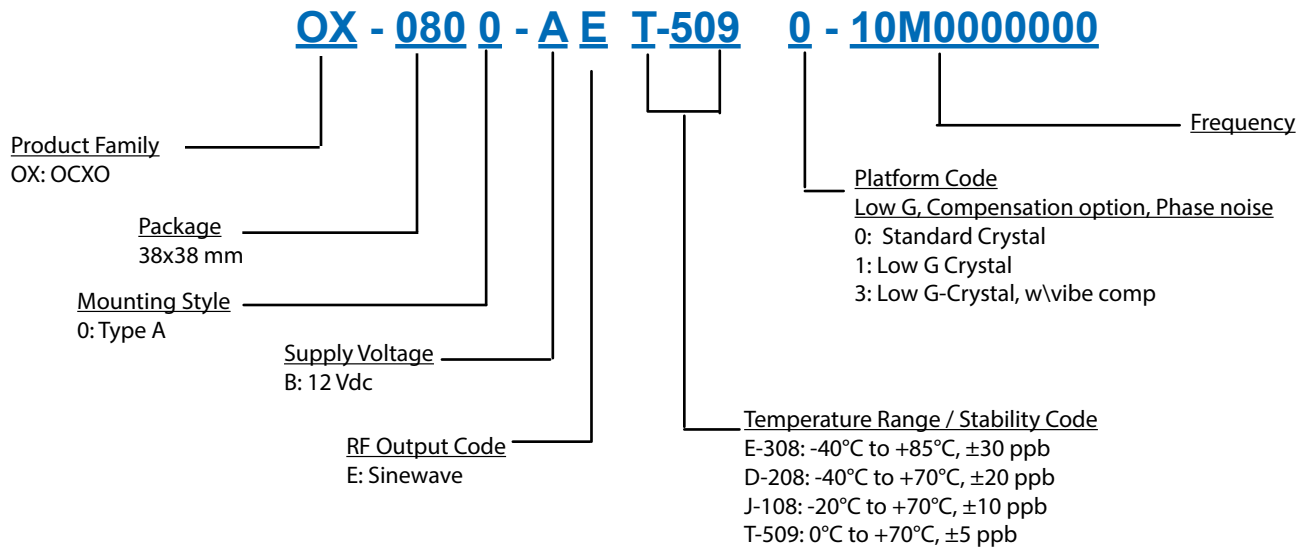
Additional Ordering Options

Additional ordering options available include custom temperature ranges, custom temperature stabilities, custom phase noise requirements, custom height, custom supply voltage, and improved g-sensitvity. These modifications require a custom dash number - please contact the factory for additional information.

Design Tools

Vectron stocks the following items for small orders and prototype development:
None
Vectron stocks the following evaluation board for this product:
None
Application Notes:
None

Notes:
1. Unless otherwise stated, all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, and temperature (25°C).
2. Retrace is defined as the frequency difference between the end of two 24 hour on power periods with a 24 hour off period in between while at a constant temperature.
3. Phase noise degrades with increasing output frequency.
4. Not all options and codes avaialble at all frequencies.

Contact Information

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