Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA
TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

TCXO7500Z-40MHz-A-V
High accurate, analogue Temperature Compensated CMOS SMD VC-TCXO

Features and Benefits

Less than ±0.5 ppm stability over operating temperature
7.0 mm x 5.0 mm SMD package
CMOS output
3.3V supply

Typical Applications

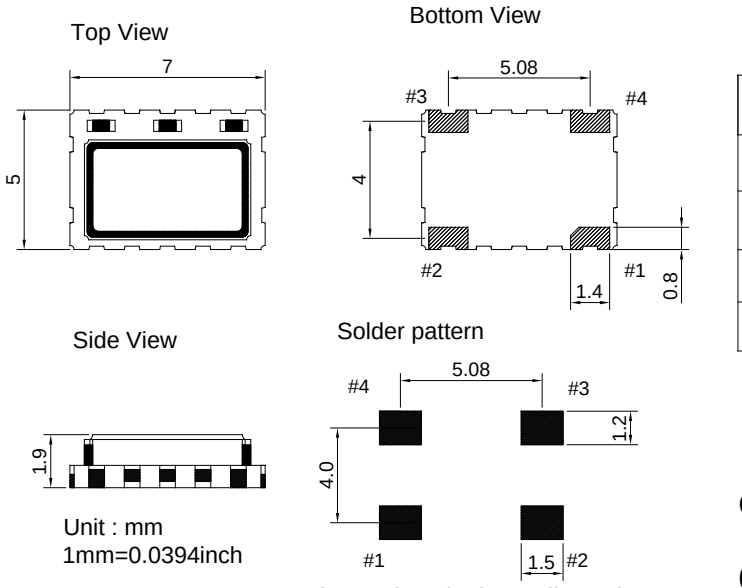
Point to Point (P2P) radio and microcells
Base Stations, Femtocell
Mobile phone

Description

A contemporary high stability temperature compensated crystal oscillators with the latest integrated circuit topologies.

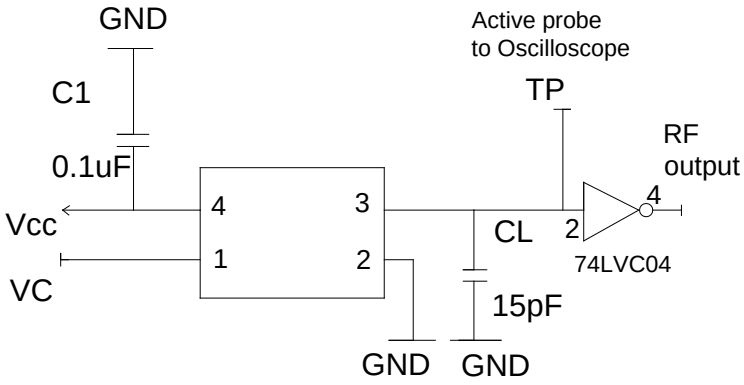
Mechanical Drawing & Pin Connections

Drawing No:MD150015-4



Pin	Function
#1	Vc Voltage control(EFC)
#2	GND
#3	Output
#4	Vcc

Test Circut



1) Total CL incl. test-jig and active probe

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Specifications

General Specifications					
Parameter	Min.	Typ.	Min.	Units	Note
Nominal Frequency		40		MHz	
Frequency Stability					
Vs. temperature Reference (FMAX+FMIN) / 2		≤ ±0.50		ppm	Over -40°C to +85°C
Vs supply voltage changes Reference to frequency at nominal supply		≤ ±0.05		ppm	±5%
Vs. load changes Reference to frequency at nominal load		≤ ±0.10		ppm	±10%
Vs. aging		≤ ±1.00		ppm	1st year
Frequency Slope		<0.03		ppm/°C	Over operating temperature
Short Term Stability ADEV		$< 5 \times 10^{-11}$			T = 1 sec
Frequency Tolerance Ex-works		≤ ±0.50		ppm	
Supply Voltage		+3.3V			±5%
Current Consumption			6	mA	
Output Waveform		CMOS			$V_{OH} \geq 2.1$ / $V_{OL} \leq 0.9V$
Output Load			15	pF	
Symmetry		45% - 55%			@ ½ Vdc
Rise / Fall Time		< 4		ns	
Electronic Frequency Control Range		> ±8		ppm	Positive slope
EFC Voltage (V_C)		+1.5		V	±1.0V
Phase Noise @ 40MHz					
@ 10 Hz		-85		dBc/Hz	
@ 100 Hz		-115			
@ 1 kHz		-140			
@ 10 kHz		-150			
@ 100 kHz		-155			

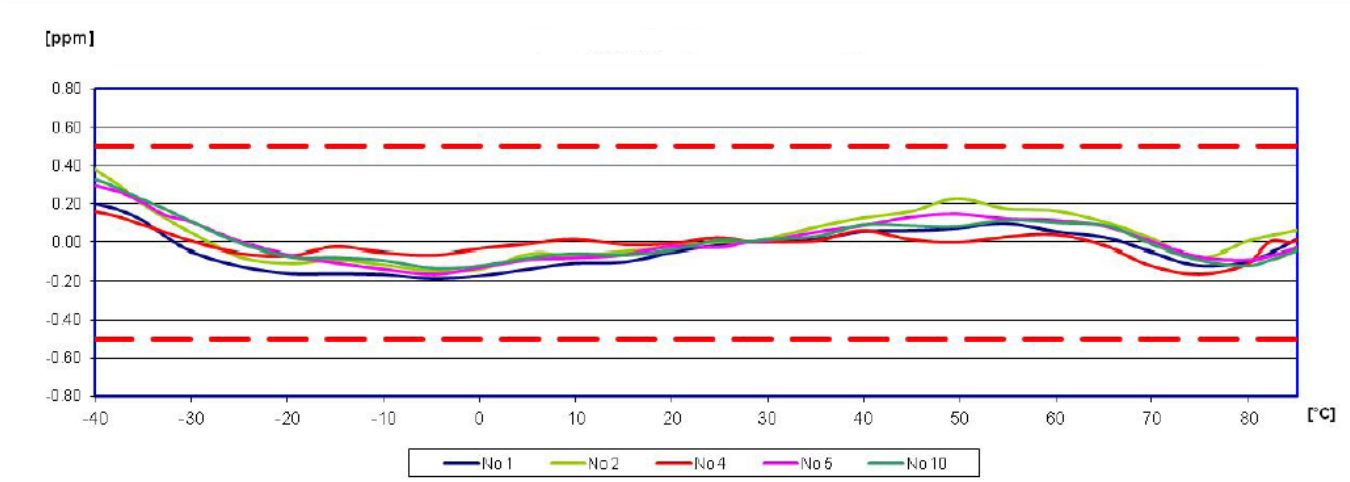
Environment and Packaging	
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range	-55°C to +105°C
Reflow Profiles as per IPC/JEDEC J-STD-020C	≤ 260°C over 10 sec. Max.
Moisture Sensitivity	Level 1 (unlimited)
Packaging Units	Tape & reel in 500 or 1000 pieces

Environmental Test Conditions						
Test	IEC 60068 Part	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test Conditions (IEC)
Sealing Tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc Fine lead: Test Qk
Solderability Resistance to soldering head	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta (235 ±5)°C Method 1 Test Tb method 1 A, 5 s
Shock*	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axes 100 g, 6 ms half-sine pulse
Vibration sinusoidal*	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axes 10 Hz – 55 Hz 0, 75mm, 55 – 2 kHz, 10g
Vibration random*	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test F db
Endurance tests - aging - extended aging		5.7.1 5.7.2	108A		4.8.35	30 days 1000 h, 2000 h, 8000 h @ +85°C

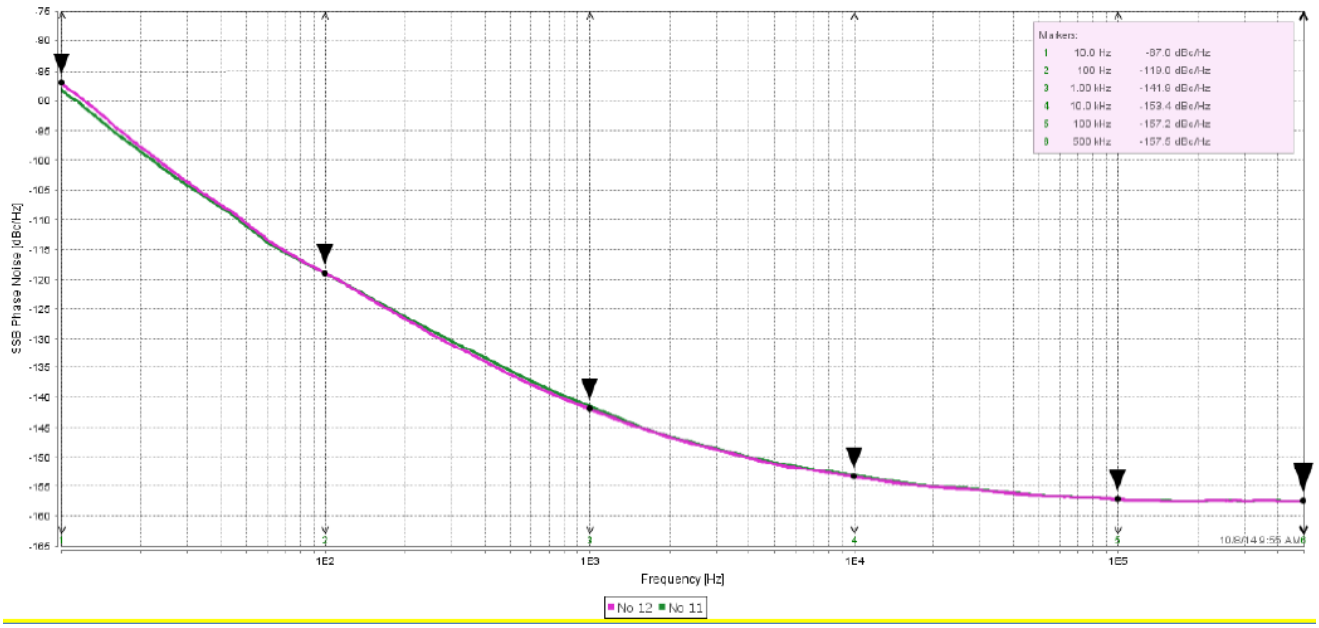
Customized Environmental test conditions available on request. Please contact Dynamic Engineers Inc. for further details.

Final inspection test data

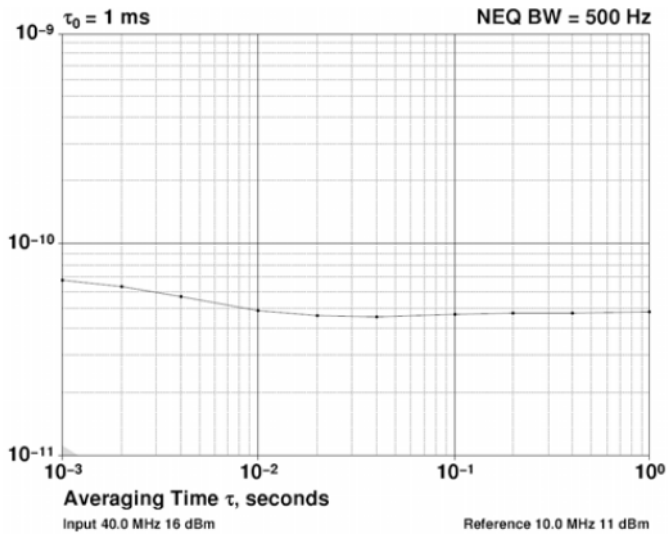
1. Frequency deviation vs. temperature, measured over -40 to +85 °C

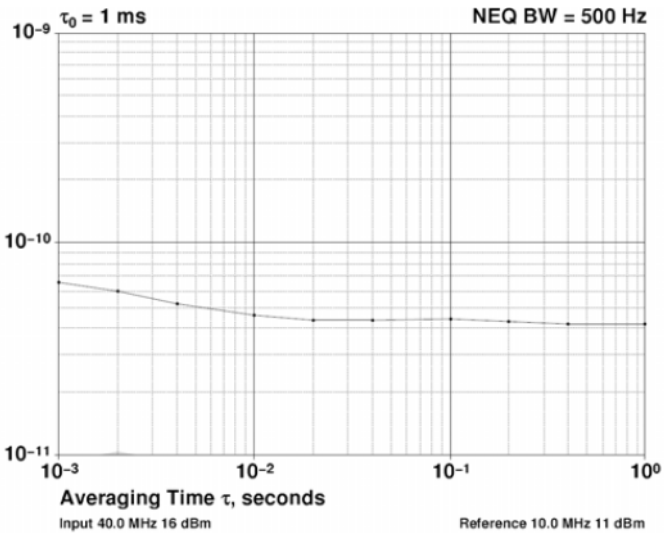


2. Phase noise



3. Short term stability, Allan deviation (ADEV)





4. Wave shape