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

TCXO5300Z-UHS-10.0MHz
Ultra-High Stability TCXO

Features and Benefits

Ultra-High Stability (UHS) ±100 ppb
Less than 0.1 ppb Alla deviation

Typical Applications

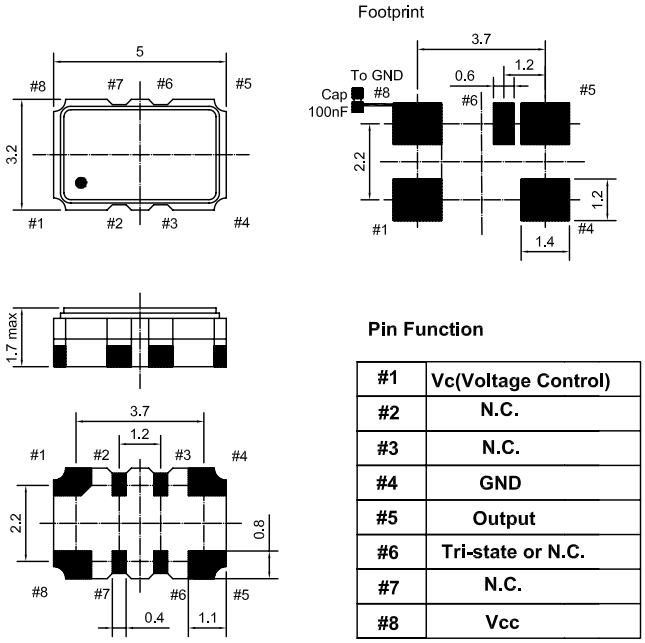
High reliability manpack and hand-held VHF-UHF mobile radio systems
Small cell mobile communications such as WCDMA, TD-SCDMA, CMDA2000, WiMax, and LTE cell systems standards

Description

Next generation compensation IC technology used in conjunction with precision resonator designand processing techniques.

Mechanical Drawing & Pin Connections

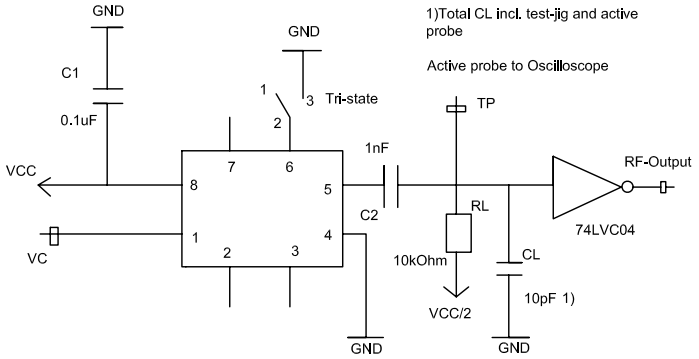
Drawing No:MD150017-4



Pin Function

#1	Vc(Voltage Control)
#2	N.C.
#3	N.C.
#4	GND
#5	Output
#6	Tri-state or N.C.
#7	N.C.
#8	Vcc

Unit : mm
1mm=0.039inch



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

TCXO5300Z-UHS-10.0MHz
Ultra-High Stability TCXO

Specifications

Oscillator Specification	Sym	Condition	Value			Unit
			Min.	Typ.	Max.	
Nominal Frequency	F_0			10.0		MHz
Output Wave Form				Clipped Sine wave		
Output Load		±5%		10/10		kΩ//pF
Output Level		Vp-p		>1.0		
Supply Voltage	V_{cc}			+3.3		V
Current Consumption				<2.0		mA
Electronic Frequency Control (EFC) Range	ΔF	Positive slope		>±5.0		ppm
EFC Voltage	V_C	±1.0V		+1.5		V
EFC Input Impedance				>100		kΩ
Start Up Time				< 2.0		mA
Tri-State Function		Pin #5 > oscillation Pin #5 > high impedance		Pin #6 ≥ 2.1 Pin #6 ≤ 0.9		V or open V or GND
VS. Tolerance ex. factory		@25°C	0.0		1.0	ppm
VS. Temperature	$(F_{MAX}+F_{MIN})/2$	Over -40°C to +85°C		≤±0.10		ppm
VS ±5% change in supply voltage		Reference to frequency at nominal supply		≤±0.05		ppm
VS. ±10% change in load		Reference to frequency at nominal load		≤±0.05		ppm
VS. Aging		1^{st} year		≤±0.80		ppm
Frequency slope vs. temperature		Over operating temperature		≤0.05		ppm/°C
Short Term Stability ADEV		T = 1 sec		$<1 \times 10^{-10}$		
Phase noise @ 10.0 MHz		@ 1kHz @ 10kHz @100 kHz		<-140 <-150 <-155		dBc/Hz

Environmental Conditions		
Parameter	**Condition**	
Operating temperature range		-40°C to +85°C
Storage temperature range		-55°C to +105°C
Moisture Sensitivity	Unlimited	Level 1
Reflow Conditions per JEDEC J-STD-020	During 10 seconds max	260°C max
Packing Units	Tape or Reel	500 or 1,000 pcs

Environmental 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 lead: Test Oc Fine Leak: Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta, Method 1 Test Td1, Method 2 Test Td2, Method 2
Shock	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axes 100g. 6ms 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, 1 oct/min 10 Hz – 55 Hz, 0, 75 mm, 55 Hz – 2 kHz, 10 g
Vibration random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance Tests -Aging -Extended Aging		5.7.1 5.7.2	108A		4.8.35	30 days @ 85°C 1000 h,2000 h, 8000 h @ 85°C

Handling Precautions
Flux Residue Resistance Analog circuit performance can be affected by unclean board. Be aware if the circuit has very high resistances – even in the low MΩ – special attention may need to be paid to cleaning. A finished assembly may be adversely affected by flux or cleansing residue. The electronics industry in the past few years has joined the rest of the world in becoming environmentally responsible. Hazardous chemicals are being removed from the manufacturing process – including flux that has to be cleaned with organic solvents. Water-soluble fluxes are becoming more common, but water itself can become contaminated easily with impurities. These impurities will lower the insulation characteristics of the PCB substrate. It is vitally important to clean with freshly distilled water every time a high-impedance circuit is cleaned. There are applications that may call for the older organic fluxes and solvents, such as very low power battery powered equipment with resistors in the 10s of MΩ range. Nothing can beat a good vapor defluxing machine for ensuring that the board is clean.