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

TCXO5300Z-ET-25MHz-A-V
Extended Temperature SMD TCXO

Features and Benefits

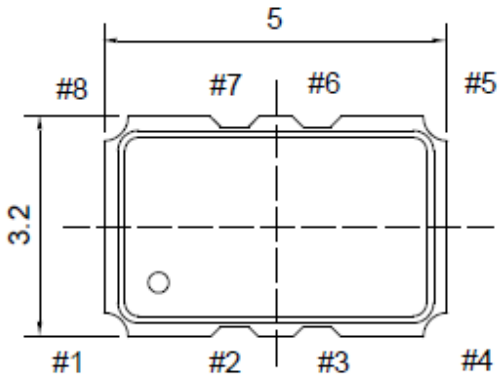
Better than ±0.2ppm from -40°C to +85°C
3.3V supply; 10mA maximum
Less than -155dBc/Hz @ 100KHz

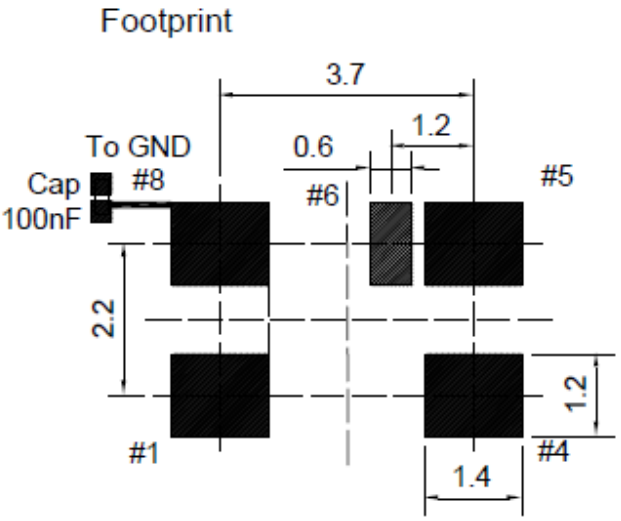
Typical Applications

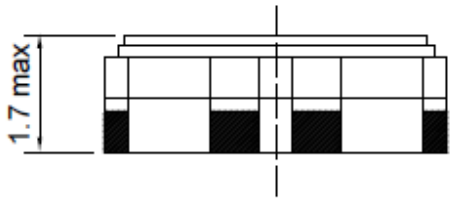
Mobile Radio
Communication Equipment

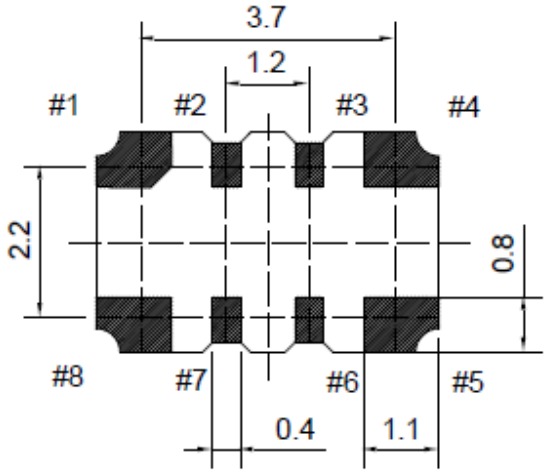
Mechanical Drawing & Pin Connections

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

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Specifications

Oscillator Specification	Sym	Condition	Value Min.	Value Typ.	Value Max.	Unit	Note
Frequency Range	F_0			25.00		MHz	
RF Output							
Output Wave Form	Vp-p			Clipped Sine wave			> 1.0
Load		10 pF		10		kohm	±5%
Start Up Time				< 2		ms	
Tri-state Functions Pin #5 -> oscillation Pin #5 -> high impedance		 Pin #6 Pin #6		 ≥ 2.1 ≤ 0.9		 V V	 open GND
Power Supply							
Voltage	V_{cc}			3.3		V	
Power Consumption				<3		mA	
Frequency Control							
Electronic Frequency Control (EFC) Range	ΔF	Positive slope		> ±5		ppm	
EFC Voltage	V_C			+1.5		V	±1.0V
EFC Input Impedance				> 100		kohm	
Frequency Stability							
VS. Tolerance (ex-factory)		@25°C	0		1.00	ppm	
VS. Temperature $(F_{MAX} + F_{MIN}) / 2$		Over -40°C to +85°C Over +85°C to +95°C			≤±0.20 ≤±0.50	ppm	
VS ±5% change in supply voltage					≤±0.05	ppm	
VS. ±10% change in load					≤±0.05	ppm	
Aging					≤±1.00	ppm	First year
Frequency slope vs. temperature Over operating temperature					≤±0.05	ppm/°C	
Short term stability ADEV		t = 1 sec			< 1 x 10^{-10}		
Phase Noise							
Phase noise @ 25.0 MHz		1 KHz		<-135		dBc/Hz	
		10 KHz		< -145			
		100 KHz		< -155			

Environmental Conditions	
Parameter	**Reference Std.**
Operating temperature range	-40°C to +95°C
Storage temperature range	-55°C to +105°C
Reflow conditions per JEDEC J-STD-020	260°C maximum (during 10 sec. max.)
Moisture sensitivity	Level 1 (unlimited)
Packaging Units	Tape and Reel (500 or 1000 pcs)

Pin Function	
#1	V_C (Voltage Control)
#2	Do not connect
#3	Do not connect
#4	GND
#5	OUTPUT
#6	Tri-state or do not connect
#7	Do not connect
#8	V_{CC}

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 leak: Test Qc Fine lead: TstQk
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 Td_1, method 2 Test Td_2, method 2
Shock*	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 2 x per axis 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 F_C, 30 min per axis, 1 oct/min 10 Hz – 55 Hz 0.75mm; 55 Hz – 2 kHz, 10g
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

Other environmental conditions on request

Handling Precautions

Flux Residue Resistance
Yes, even an unclean board can affect analog circuit performance Be aware that 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 influxes 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 the board is clean.