



Features and Benefits

Frequency range: 10MHz
 Supply voltage: 3.3V
 Steady current: 2-10mA
 Output waveform: CMOS
 Frequency stability vs. operating temperature:0.25ppm
 Aging: 1ppm per year
 Phase noise@100KHz: -152dBc/Hz
 Operating temperature: -40°C to 85°C
 Size: 5x3.2x1.7mm

Typical Applications

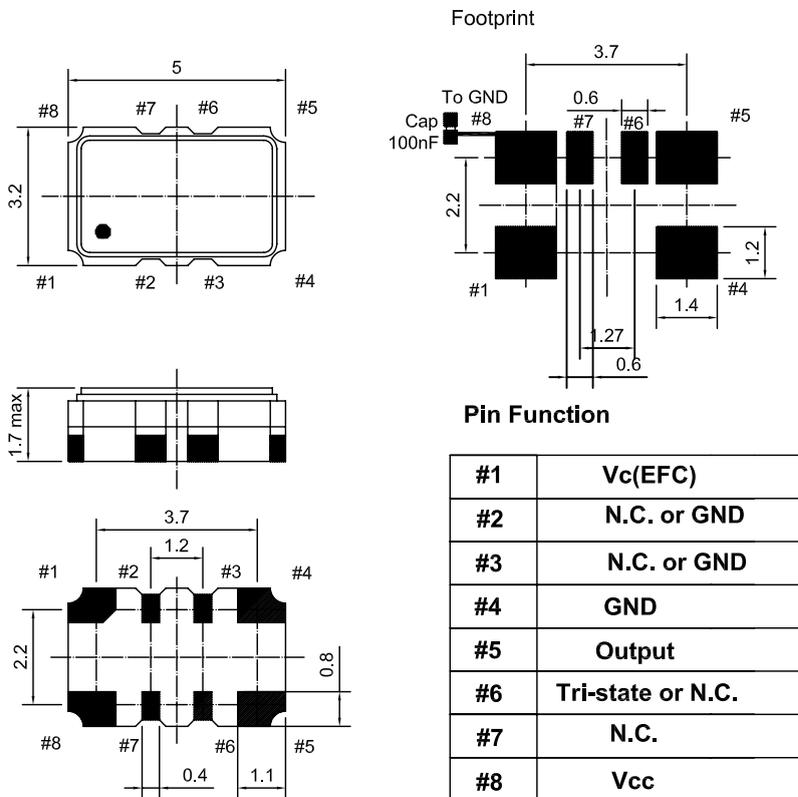
UHF Synthesizers
 SATCOM System
 Portable Microwave Applications

Description

TCXO5300BT-10MHz-A-V offers wide temperature operation from -40°C to +85°C with outstanding frequency stability and low phase noise performance.

Mechanical Drawing & Pin Connections

Drawing No: MD150017-8



Pin Function

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

Unit : mm
 1mm = 0.039 inches



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			10		MHz	
Output			CMOS				
Output Level			V _{OH} ≥ 0.9 x V _{cc} V _{OL} ≤ 0.1 x V _{cc}				
Output load					15	pF	
Power Supply							
Voltage	V _{cc}			3.3		V	
Current Consumption			2		10	mA	
Frequency Control*							
Control voltage range	V _c		0.5		2.5	V	
Tuning range			±5		±10	ppm	Tuning Slope Positive
EFC input impedance			100			kohm	
Tri-state function			pin #6 high or open pin #5 oscillation pin #6 low or GND pin #5 high impedance				
Frequency Stability							
Versus temperature		-40°C to 85°C, ref to (f _{max} +f _{min})/2	-0.25		+0.25	ppm	
Tolerance at 25°C			0		+1.0	ppm	
Versus ±5% change in supply voltage		Ref to frequency at nominal supply	-0.1		+0.1	ppm	
Versus ±5% change in load		Ref to frequency at nominal load	-0.1		+0.1	ppm	
First Year Aging		@+40°C	-1.0		+1.0	ppm	
G-sensitivity		per axis			2.0	ppb/g	
Phase noise		10Hz			-83	dBc/Hz	
		100 Hz			-110		
		1000 Hz			-135		
		10 KHz			-148		
		100 KHz			-152		
Environmental Conditions							
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 maximum during 10 sec. Max					
Moisture sensitivity		Level 1(unlimited)					

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 leak: Test Qk
Solderability	2-20	5.6.3	208H		3.6.52	Test Ta method 1
Resistance to soldering heat	2-58		210F		3.6.48	Test Td ₁ method 2 Test Td ₂ method 2
Shock	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 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 Fc, 30 min per axis, 1 oct / min 10 Hz – 55 Hz 0, 75 mm; 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			108A			
- Aging		5.7.1			4.8.35	30 days @ +85°C, 1000 h, 2000 h, 8000 h @ +85°C
- Extended aging		5.7.2				