



Features and Benefits

High frequency stability (up to ± 0.28 ppm over -40°C to $+85^{\circ}\text{C}$)
 CMOS Output
 SMD Miniature package

Typical Applications

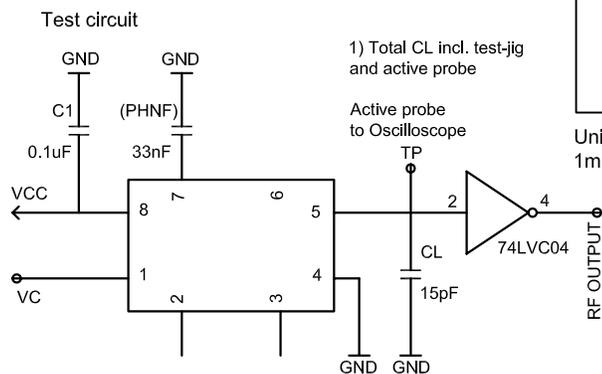
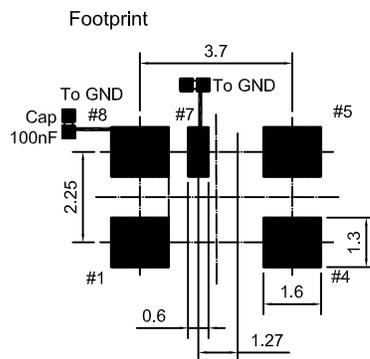
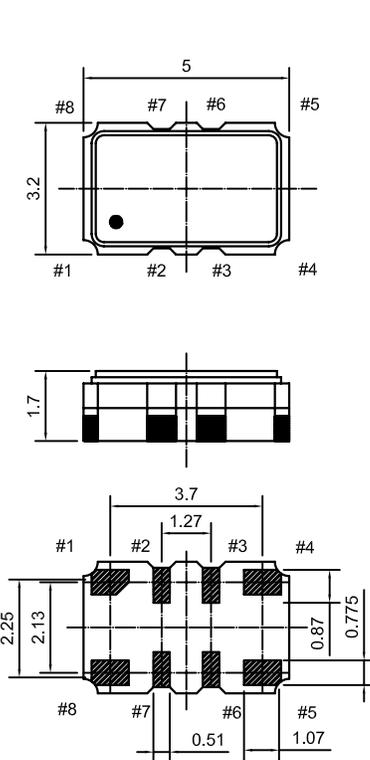
UHF Synthesizers
 SATCOM System
 Portable Microwave Applications

Description

TCXO5300BT-25MHz-A-V offers wide temperature operation from -40°C to $+85^{\circ}\text{C}$ with outstanding frequency stability and low phase noise performance.

Mechanical Drawing & Pin Connections

Drawing No: MD150017-7



Pin function

#1	GND/N.C.
#2	Do not connect
#3	Do not connect
#4	GND
#5	OUTPUT
#6	Do not connect
#7	Do not connect optional 33nF to the GND
#8	VCC
Phase noise reduction (optional on request)	
#7	Phase noise filter (PHNF) with external capacitor Cap = 33nF

Unit in mm
 1mm = 0.0394 inches



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			25		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}			3.30		V	
Current Consumption					4.0	mA	
Frequency Control*							
Control voltage range	V _c		0.5		2.5	V	
Tuning range			-5		+5	ppm	Tuning Slope Positive
Frequency Slope		Over operating temperature			0.05	ppm/°C	
Frequency Stability							
Versus temperature		-40°C to 85°C, ref to (f _{max} +f _{min})/2	-0.28.		+0.28	ppm	
		-55°C to -40°C	-1.5		+1.5	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 ±10% change in load		Ref to frequency at nominal load	-0.05		+0.05	ppm	
First Year Aging			-1.0		+1.0	ppm	
Phase noise		100 Hz		-120		dBc/Hz	
		1000 Hz		-145			
		10 KHz		-155			
		100 KHz		-157			
Short-Term Stability	ADEV	Tau = 1 second			1.0	E-10	
Environmental Conditions							
Operating temperature range	-55°C to 85°C						
Storage temperature range	-55°C to 105°C						
Reflow per JEDEC J-STD-020	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 kHz10g
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, OCXO @ +25°C
- Extended aging		5.7.2				1000 h, 2000 h, 8000 h @ +85°C