

Features and Benefits

- Frequency 10.000000MHz
- Sine wave waveform output
- +/-20 ppb from -40°C to 85°C
- +12V Supply voltage
- 2.3W steady state power
- Less than -110dBc/Hz @1Hz offset
- Less than -170dBc/Hz @10KHz offset

Description

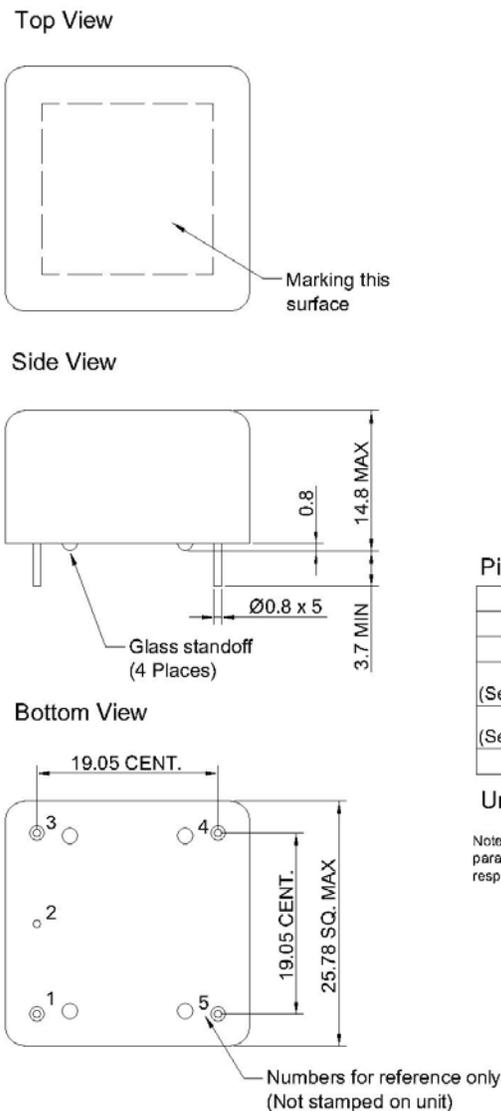
Ultra-Low Noise Design Platform

Typical Applications

- Digital Switching Systems
- Battery Operated Systems
- Radio Transceiver

Mechanical Drawing & Pin Connections

Drawing No: MD150031-1



Pin connections

PIN	Function
1	RF Output
2	0 Volts & Case
3	V _{CO} Input or Not Connected
4	Reference Voltage or Not Connected
5	+V _{DC}

Unit : mm

Note 1. If the specification does not specify parameters for either PIN3 or PIN4 then that respective PIN is not internally connected

Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	F_{nom}			10.000000		MHz	
Output Waveform			Sine Wave				
Initial Accuracy		@25°C±1°C After turn on power 60 minutes ≤90 days following date code V_{CO} input voltage @+5.0V±0.001V	-0.1		+0.1	ppm	
Level			+8	+10	+12	dBm	
Load				50		Ohm	
Harmonic					-30	dBc	
Spurious		10Hz to 1MHz from carrier			-80	dBc	
Power Supply							
Voltage	V_{CC}			+12		V	
Current		@Turn on			500	mA	
Steady State		@25°C±1°C			2.3	W	
Electrical Frequency Adjust							
Control voltage range	V_{CO}		+0.5	+5.0	+9.5	V	
Pulling range		V_{CO} @0.5V, Reference to frequency at nominal			-0.4	ppm	
		V_{CO} @9.5, Center voltage	+0.4			ppm	
Slope			Positive				
Linearity			-10		+10	%	
Reference Voltage			+9.25	+9.5	+9.75	V	
Source Resistance					100	Ohm	
Output Resistance of V_{ref}			10			KOhm	
Frequency Stability							
VS. Temperature		-40°C to 85°C, Reference to 25°C	-20		+20	ppb	
VS. Supply Voltage		+/-5% Change	-1.0		+1.0	ppb	
VS. Load		+/-10% Change	-1.0		+1.0	ppb	
Short Term		Root Allan variance			0.01	ppb/s	
Warm-up		In 5 minutes @+25°C±1°C, Referenced to 1 hour	-50		+50	ppb	
Aging	Per Day	At time of shipment	-0.5		+0.5	ppb	
	Daily	After 30 days	-0.5		+0.5	ppb	
	Yearly		-50		+50	ppb	
	10 Years		-0.3		+0.3	ppm	
SSB Phase Noise							
Phase noise		@ 1 Hz			-110	dBc/Hz	
		@ 10 Hz			-140		
		@ 100 Hz			-155		
		@ 1 KHz			-165		
		@ 10 KHz			-170		
		@ 100 KHz			-170		
		@ 1 MHz			-170		
Environmental Conditions							
Operating Temperature Range		-40°C to +85°C					
Storage Temperature Range		-50°C to +95°C					
Humidity		MIL-STD-202, Method 103, Test condition A					
Vibration (Non-operating)		MIL-STD-202, Method 201					
Shock (Non-operating)		MIL-STD-202, Method 213, Test condition J					