

Features

Frequency Range 0.625 to 320 MHz
 HCMOS or 50 ohm sine wave
 Best in class Frequency Stability over temperature as low as +/- 50 ppb
 Surface mount package design

Typical Applications

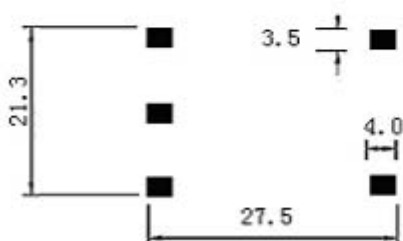
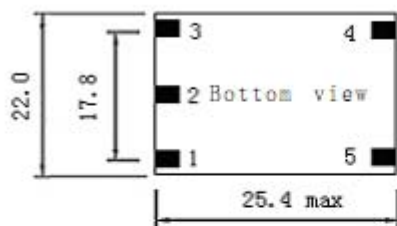
Cellular base stations Satellite Communications
 Land mobile radio Automatic Meter Reading
 Wireless local loop Test and Measurement
 Telecommunication Networks

Description

The MTCXO1005 represents a special class of electronic compensated designs. With its' proprietary compensation hardware and software techniques, the MTCXO1005 can achieve sub 0.1 ppm stabilities over a wide operating temperature range with very high operating frequencies.

Physical Dimension & Pin Connections

Solder pad layout



PIN NO	CONNECTION
#1	VC/NC
#2	VC/NC
#3	Vcc
#4	OUTPUT
#5	GND

Specification

TCXO Specification	Sym.	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	f_0		0.625		320	MHz	
HCMOS compatible option	Load				15	pF	Available to 160 MHz
	H - level voltage	V_H				V	
	L - level voltage	V_L				V	
	Rise & Fall time				10	ns	
	Duty cycle			45	50	55	%
50 ohm Sine-wave option	Level	dBm	0			dBm	
	Load	RL		50		ohm	
	Harmonics			-20		dBc	
Power supply							
Voltage	V_{CC}		4.75	5.0	5.25	V	3.3 and 12 volt option available
Current consumption	I_{CC}			10	25	mA	Max. current a function Of frequency
Frequency control*							
Control voltage range	V_C		0.5	1.5	2.5	V	Positive tuning slope
Tuning range				+/- 8.0		ppm	
Reference voltage Output							
Frequency stability							
vs. temperature		-40°C to +85°C, ref 25°C	-100		+100	ppb	
vs. 5% change in supply voltage		ref V_{CC} typ.	-50		+50	ppb	
25C calibration tolerance			-300		+300	ppb	
SSB Phase noise For 10 MHz HCMOS Typical		10 Hz				dBc/Hz	for 10 MHz 50 ohm sine wave Typical
		100 Hz					
		1 kHz		-135			
		10 kHz					
		100 kHz					
Allan variance		1 s				e-12	
Aging		Projected aging after 30 days operation					
	Per Year				+/-0.5	ppm	
Environmental, mechanical conditions.							
Operating temperature range		-40°C to +85°C maximum range available that is standard					
Storage temperature range		-50°C to +90°C					
Humidity							
Mechanical shock							
Sine Vibration							
Random Vibration							

Ordering Information

MTCXO1005-XXX.XXXXXX-W-Y-Z

1. Field " XXX.XXXXXX " is the Output Frequency to six decimals in MHz
2. Field " W " is Operating Temperature Range and Freq. Stability :
 - a. " 0 " for -20°C to +70°C and +/- 50 ppb
 - b. " 1 " for -40°C to +85°C and +/- 100 ppb
 - c. " 2 " for -20°C to +70°C and +/- 280 ppb
 - d. " 3 " for -40°C to +85°C and +/- 50 ppb
3. Field " Y " is Power Supply Option :
 - a. " 0 " for 3.3 V +/- 5%
 - b. " 1 " for 5.0 V +/- 5%
 - c. " 2 " for 12.0 V +/- 5%
4. Field " Z " is clipped sine wave output versus square wave output
 - a. " 0 " for 50 ohm sine wave output
 - b. " 1 " for square wave output (to 160 MHz operating frequency)

Part Number Example

MTCXO1005-10.000000-1-1-0

10.000000 MHz Operating Frequency

Operating Temperature of -40°C to +85°C

+/- 100 ppb Frequency Stability

5.0 volt supply

50 ohm sine wave output