

MTCXO1000

VHF TCXOs

Features

Frequency Range 0.625 to 320 MHz
HCMOS or clipped sinewave output
Best in class Frequency Stability over temperature as low as ± 50 ppb
Rugged package design

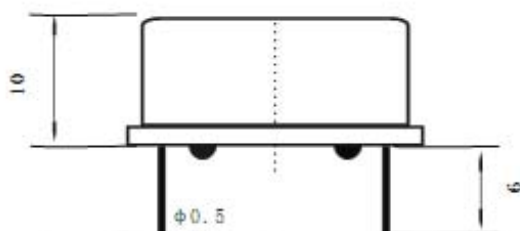
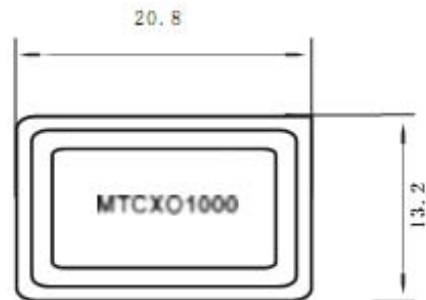
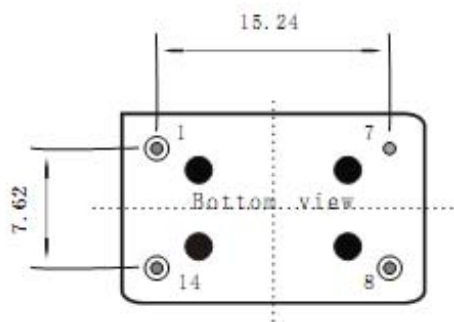
Typical Applications

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

Description

The MTCXO1000 represents a special class of electronic compensated designs. With its' proprietary compensation hardware and software techniques, the MTCXO1000 can achieve sub 0.1 ppm stabilities over a wide operating temperature range with very high operating frequencies.

Physical Dimensions & Pin Connections



PIN NO	CONNECTION
#1	NC/VC
#7	GND
#8	OUTPUT
#14	Vcc

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	
	H - level voltage	V _H					V	
	L - level voltage	V _L					V	
	Rise & Fall time					10	ns	
	Duty cycle			45	50	55	%	
Clipped Sine-wave option	Level	L					pk-pk	
	Load	RL			10		Kohm	
	Load	CL			10		pF	
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.	-100		+100	ppb	
SSB Phase noise For 10 MHz HCMOS Typical			10 Hz				dBc/Hz	for 10 MHz HCMOS Typical
			100 Hz					
			1 kHz		-130			
			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

MTCXO1000-XXX.XXXXXXX-W-Y-Z

1. Field “XXX.XXXXXXX” 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 +/- 280 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 clipped sine wave output
 - b. “1” for square wave output

Part Number Example

MTCXO1000-10.000000-1-1-0

10.000000 MHz Operating Frequency

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

+/- 100 ppb Frequency Stability

5.0 volt supply

Clipped sine wave output