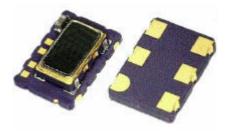
### **Picture of Part**

12.00 to 800 MHz 7.0 mm x 5.0 mm x 2.3 mm ceramic SMD Compact and lightweight Differential LVDS 3.3v supply



### **APPLICATIONS**

**Features** 

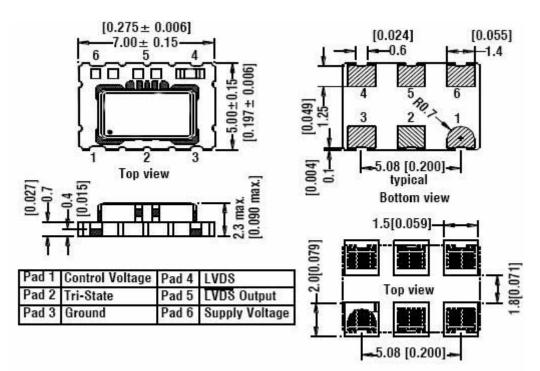
1X, 2X, 4X Fibre Channel, WLAN, 10 GE, GigE, SONET, ATM., 3G, ADSL, SDH, Airborne, Mobile, Server, Base Station

### **Description**

The TCXO7500L features the use of high frequency fundamental crystals in non-PLL based circuitry to achieve the lowest possible jitter and phase noise performance. Differential LVDS outputs meet the requirements for SONET, XDSL, and other telecommunication standards for PLL circuits where the VCTCXO must lock to a more stable clock reference signal.

### **Physical Dimensions**

#### **Pin Connections**



Rounded pad is pad No. 1. Count counter-clockwise when looking at top view. Count clockwise when looking at bottom view. Decoupling capacitor is not built-in.

### TCXO7500L Ultra-low Noise VHF OCXOs

# **Specification**

	LVDS		Condition	Value			Unit	Note
VCTCXO Frequency Range		f <sub>0</sub>		Min.	Typ.	Max. 800	MHz	
				12	1,10.			
	Output High Voltage				1.400	1.600	V	
LVDS Outputs	Output Low Voltage			0.900	1.100		V	
	Offset Voltage			1.125	1.2000	1.375	V	
	Output Differential		Voltage	247	355	454	MV	millivolts
	Duty Cycle		Measured at 50% of waveform	45	50	55	%	
	Rise / Fall Time				0.70	1.00	ns	**measured at 20 to 80% of the
								waveform
			Start up Time			5.0	mS	
<b>D</b>								
Power sup Voltage	ply	Vcc		3.150	3.300	3.450	V	
Current consumption		Icc	Current Drain is a function of frequency		52		mA	
Pad 2 Enal	ble Function			T		T		
			Voltage applied to pad 2	1.52			volts	In the disabled mode, both output are enabled when Pad 2 is taken
								To at least 1.52 V or higher
Pad 2 Disa	able Function			1	1	1.40	1.	
			Voltage applied to pad 2 Oscillator circuit is always on.			1.42	volts	Both outputs are disabled when
			Only buffer circuit is turned OFF	-		-		Pad 2 is taken below 1.42 V
			-					Referenced to ground
Typical Phase Noise as a Function of Operating Frequency With control voltage line			Freq. OFFSET	1KHz	10KHz	100KHz	1MHz	_
			77.76 MHz	-112	-115	-117	-120	_
			100.00 MHz	-110	-115	-117	-120	_
grounded			311.04 MHz	-115	-125	-123	-125	_
								<u>]</u>
			1					1
	ain Jitter and Integrate	d Phase						
OPERATIN	NG FREQUENCY		PERIOD JITTER (RMS 1-SIGN		K TO PEAI S typical	K PERIOD	JITTER	PHASE JITTER (12K to 20MHz
77.76 MHz			5.7 PS typical		5.8 PS typical			
100.00 MHz			3.5 PS typical		3.6 PS typical			
311.04 MHz 622.08 MHz			4.5 PS typical		2.6 PS typical			
			5.0 PS typical		S typical S typical			2.7 PS typical

## TCXO7500L

Ultra-low Noise VHF OCXOs

	LVDS		Sym. Condition	Value			Unit	Note			
VCTCXO				Min.	Typ.	Max.					
Frequency Stability		$f_0$				111111					
			-40°C to +85°C, ref 25°C	2.000		10.000	DD14	** Standard Stability available			
Frequency Versus			$-40^{\circ}$ C to $+85^{\circ}$ C, ref 25°C	-2.000		+2.000	PPM	*** Standard Stability available			
versus Operating											
Temperature											
remperature											
			Frequency vs. Room Calibration	-2.0		+2.0	PPM				
			Frequency versus Reflow	-1.0		+1.0	PPM	**measured 24 hrs after reflow			
Frequency	Supply, load		Frequency vs. 5% Vcc change	-0.3		+0.3	PPM				
Versus	Time, and reflow		Frequency vs. 10% Load change	-0.3		+0.3	PPM				
	,		Frequency versus Time PER YR	-1.0		+1.0	PPM				
			1 0								
			1	r			1	1			
								1			
Frequency v	s. Control Voltage		Linearity		6	10	%				
PAD 1			Control Voltage	0.5	1.5	2.5	volts				
Increase voltage to Increase frequency			Frequency Change	+/- 5.0	110	210	PPM Mohm				
			Input Impedance	1.0							
								<u> </u>			
	ntal, mechanical con	ditions.									
Operating temperature range			-40°C to +85°C maximum range available that is standard								
Storage temp	perature range		-55°C to 125°C								
Humidity			85% RH; 85C; 48 hours of exposure								
Vibration			Mil-Std 202F, Method 204, 35G's, 50 to 2000 Hz								
Shock			Mil-Std 202F, Method 213B, test condition E, 1000 GG half sine wave								
Reflow			+260°C for 10 seconds								

## **Ordering Information**

### TCXO7500L-XXX.XXXXXZ-Z

- 1. Field "XXX.XXXXXX " is the Output Frequency to six decimals in MHz
- 2. Field "Z" is VCTCXO or TCXO (Clock)
  - a. " 0 " for VCTCXO
  - b. "1" for TCXO (clock)

## **Part Number Example**

TCXO7500L-155.520000-0 155.520000 MHz Operating Frequency VCTCXO (Voltage-controlled)

# **Application Circuit**

