

TCXO7500L

Ultra-low Noise VHF OCXOs

Specification

| LVDS VCTCXO | | Sym. | Condition | Value | | | Unit | Note |
|---|---------------------|-------------------------------|--|----------------------------|--------|-------------------------------|-------|---|
| | | | | Min. | Typ. | Max. | | |
| Frequency Range | | f_0 | | 12 | | 800 | MHz | |
| LVDS Outputs | Output High Voltage | | | | 1.400 | 1.600 | V | |
| | 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 | |
| Power supply | | | | | | | | |
| Voltage | | Vcc | | 3.150 | 3.300 | 3.450 | V | |
| Current consumption | | Icc | Current Drain is a function of frequency | | 52 | | mA | |
| Pad 2 Enable Function | | | | | | | | |
| | | | Voltage applied to pad 2 | 1.52 | | | volts | In the disabled mode, both outputs are enabled when Pad 2 is taken To at least 1.52 V or higher |
| Pad 2 Disable Function | | | | | | | | |
| | | | Voltage applied to pad 2 | | | 1.42 | volts | Both outputs are disabled when Pad 2 is taken below 1.42 V |
| | | | Oscillator circuit is always on. | | | | | Referenced to ground |
| | | | Only buffer circuit is turned OFF | | | | | |
| Typical Phase Noise as a Function of Operating Frequency With control voltage line grounded | | | Freq. OFFSET | 1KHz | 10KHz | 100KHz | 1MHz | |
| | | | 77.76 MHz | -112 | -115 | -117 | -120 | |
| | | | 100.00 MHz | -110 | -115 | -117 | -120 | |
| | | | 311.04 MHz | -115 | -125 | -123 | -125 | |
| Time Domain Jitter and Integrated Phase Jitter | | | | | | | | |
| OPERATING FREQUENCY | | PERIOD JITTER (RMS 1-SIGMA) | | PEAK TO PEAK PERIOD JITTER | | PHASE JITTER (12K to 20MHz) | | |
| 77.76 MHz | | 5.7 PS typical | | 25 PS typical | | 5.8 PS typical | | |
| 100.00 MHz | | 3.5 PS typical | | 35 PS typical | | 3.6 PS typical | | |
| 311.04 MHz | | 4.5 PS typical | | 40 PS typical | | 2.6 PS typical | | |
| 622.08 MHz | | 5.0 PS typical | | 50 PS typical | | 2.7 PS typical | | |

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| | | | Min. | Typ. | Max. | | |
| Frequency Stability | | | | | | | |
| | f ₀ | | | | | | |
| Frequency Versus Operating Temperature | | -40°C to +85°C, ref 25°C | -2.000 | | +2.000 | PPM | ** Standard Stability available |
| | | | | | | | |
| | | Frequency vs. Room Calibration | -2.0 | | +2.0 | PPM | |
| | | Frequency versus Reflow | -1.0 | | +1.0 | PPM | **measured 24 hrs after reflow |
| Frequency Versus | Supply, load | Frequency vs. 5% Vcc change | -0.3 | | +0.3 | PPM | |
| | Time, and reflow | Frequency vs. 10% Load change | -0.3 | | +0.3 | PPM | |
| | | Frequency versus Time PER YR | -1.0 | | +1.0 | PPM | |
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| Frequency vs. Control Voltage PAD 1 Increase voltage to Increase frequency | | Linearity | | 6 | 10 | % volts PPM Mohm | |
| | | Control Voltage | 0.5 | 1.5 | 2.5 | | |
| | | Frequency Change | +/- 5.0 | | | | |
| | | Input Impedance | 1.0 | | | | |
| | | | | | | | |
| | | | | | | | |
| Environmental, mechanical conditions. | | | | | | | |
| Operating temperature range | | -40°C to +85°C maximum range available that is standard | | | | | |
| Storage temperature 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.XXXXXX-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)

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Application Circuit

