3.3V Surface Mount 5x7mm Stratum 3 HCMOS TCXO T501



2111 Comprehensive Drive

Aurora, Illinois 60505

The Connor-Winfield T501 is a 5x7mm Surface Mount, Temperature Compensated Crystal

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www.conwin.com

Mount, Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the T501 will maintain ±4.6ppm frequency tolerance over 20 years. The T501 is offered for applications where small size and Stratum 3 performance are required.

Features:
3.3V Operation
Low Jitter <1 pS RMS
Overall Frequency Tolerance:
±4.6ppm over 20 Years
Hold Over Stability: 0.28ppm
Temperature Range: 0 to 70°C
Tri-State Enable / Disable
Surface Mount Package

performance are required.			ape and Reel	•	
	Absolute N	laximum Ra	•	0 0	
Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	125	°C	
Supply Voltage (Vcc)	-0.5	-	7.0	Vdc	
Enable / Disable Voltage	-0.5	-	7.0	Vdc	
	Operating	g Specificati	ons		
Parameter	Minimum	Nominal	Maximum	Units	Notes
Frequency Range (Fo)	12.8	-	20.0	MHz	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	
Supply Current (Icc)	-	-	6	mA	
Jitter: (BW=10 Hz to 20 MHz) (BW=12 kHz to 20 MHz)	-	- -	5 1	ps RMS	
SSB Phase Noise at: 10 Hz offset 100 Hz offset 1 kHz offset ≥ 10 kHz offset	- - - -	-85 -110 -125 -135	- - - -	dBc/Hz	
	Hold C	ver Stability	/		
Parameter	Minimum	Nominal	Maximum	Units	Notes
Hold Over Stability ±([Fmax-Fmin]/2*Fo)	-0.28	-	+0.28	ppm	
Temperature Range	0	-	70	°C	
Total Hold Over Stability	-0.32	-	+0.32	ppm	1
	Free R	un Accuracy	/		
Parameter	Minimum	Nominal	Maximum	Units	Notes
Total Frequency Tolerance	-4.6	-	+4.6	ppm	2
Temperature Range	0	-	70	°C	
	Input C	haracteristic	S		
Parameter	Minimum	Nominal	Maximum	Units	Notes
Enable Voltage (High) or open circuit (Vih)	≥ 0.6	-	-	Vdc	3
Disable Voltage (Low) Output Tri-stated ((Vil)	-	-	≤ 0.2	Vdc	
	HCMOS Out	put Characte	eristics		
Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	-	15	pf	
Voltage: High (Voh) Low (Vol)	≥ 0.9 *Vcc	-	≤ 0.1 *Vcc	Vdc	
Duty Cycle at 50% of Vcc	45	50	55	%	
D' / F- T' 400/ - 000/					

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Rise / Fall Time 10% to 90%

Notes:

Inclusive of Hold Over stability, supply voltage change (±5%), aging, 24 hours Inclusive of calibration @ 25°C frequency vs. change in temperature, change in supply voltage (±5%), load change (±5%), reflow soldering process and 20 years aging. Leave Pad 8 unconnected if enable / disable function is not required. When tri-stated, the output stage is disabled but the oscillator and compensation circuit are still active (current consumption ≤ 1 mA).

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Ordering Information

T501 - 20.00 MHz

FREQUENCY



Aurora, Illinois 60505 Phone: 630-851-4722

Fax: 630-851-5040

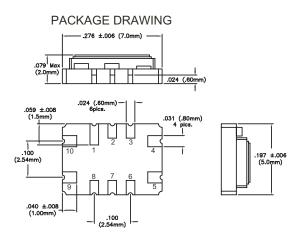
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Package Characteristics

Package	Ceramic Surface Mount Package
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Environmental Characteristics

Vibration	IEC 60068-2-6 Test Fc Procedure B4, 10-60 Hz 1.5mm displacement, at 98.1 ms-2, 30 minutes in each mutually perpendicular axes at 1 octave per minute.
Shock	IEC 60068-2-27 Test Ea, 980ms-2 acceleration for 6ms duration, 3 shocks in each direction along three mutually perpendicular.
Soldering	SMD product suitable for Convection Reflow soldering. Peak temperature 260°C Maximum time above 220°C, 60 seconds.
Solderability	v: MIL-STD-202. Method 208. Category 3

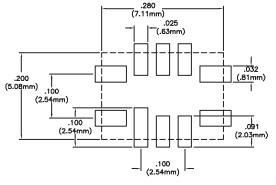


Pin Function

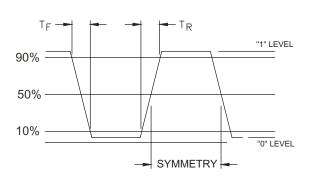
- 1 Do not connect
- 2 N/C
- 3 Do not connect
- 4 Ground
- 5 Output
- 6 N/C
- 7 N/C
- 8 Tri-state Control
- 9 Supply, Vcc
- 10 Do not connect, Or connect to Ground

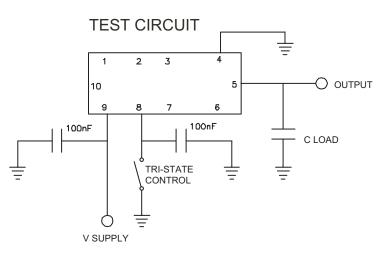
Dimensional Tolerance: ±005 (.127mm)

SUGGESTED PAD LAYOUT



OUTPUT WAVEFORM





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