

3.3V 5.0mm x 7mm LVDS Surface Mount High Frequency Oscillator V902

CONNOR WINFIELD



VCXO

The Connor-Winfield, RoHS compliant, V902 is a 3.3V Surface Mount 5.0 x 7.5mm, Voltage Controlled Crystal Oscillator (VCXO) with LVDS differential outputs and enable/disable function. The V902 is designed for use with applications utilizing a PLL system requiring low jitter and tight frequency stability. No multiplication schemes are used in this oscillator design. The surface mount package is designed for high-density mounting and is optimum for mass production.

Features:

- RoHS Compliant
- 65 to 200MHz
- 3.3V Operation
- Low Jitter <1pS RMS
- Absolute Pull Range (APR): ± 50 ppm
- Temperature Range: 0° to 70°C
- Differential LVDS Outputs
- Enable / Disable Function
- Surface Mount Package
- Tape and Reel Packaging

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Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-40	-	85	°C	
Supply Voltage (Vcc)	-0.5	-	7.0	Vdc	
Control Voltage (Vc)	-0.5	-	Vcc+0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency (Fo)	65	-	200	MHz	
Operating Temperature Range	0	-	70	°C	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	
Supply Current (Icc)	-	-	40	mA	
Jitter: (BW=10Hz to 20 MHz)	-	-	5	ps RMS	
(BW=12kHz to 20 MHz)	-	-	1		
SSB Phase Noise at 10Hz offset	-	-75	-		
at 100Hz offset	-	-95	-		
at 1kHz offset	-	-125	-	dBc/Hz	
at 10kHz offset	-	-140	-		
at 100kHz offset	-	-145	-		

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage Range (Vc)	0.3	1.65	3.0	Vdc	
Frequency Pullability (APR)	± 50	-	-	ppm	1
Monotonic Linearity	-10	-	10	%	
Input Impedance	-	60K	-	Ohm	
Modulation Bandwidth (3dB)	25	-	-	kHz	
Enable Input Voltage - Low (Vil)	-	-	0.3 Vcc	Vdc	2
Disable Input Voltage - High (Vih)	0.7Vcc	-	-		

LVDS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	-	100	Ohms	3
Output Differential Voltage (Vod)	250	-	450	mV	
Duty Cycle at 50% Level	45	50	55	%	
Rise / Fall Time 20% to 80%	-	0.6	1.0	nS	

Package Characteristics

Package Hermetically sealed, ceramic package with grounded metal cover.

Notes:

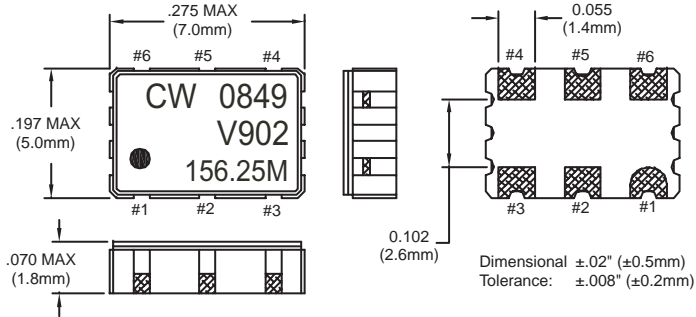
1. Absolute pull range (APR) is the minimum guaranteed pull range of the VCXO under all conditions over the lifetime operation. Including calibration @ 25°C, frequency vs. change in temperature, frequency vs. change in supply voltage, frequency vs. change in load, shock and vibration and aging for ten years. The APR is referenced to Fo. Positive Transfer Function.
2. Outputs are enabled with no connection on pad 2. When oscillator is disabled both outputs are in high impedance state
3. Vod measured with 100 ohm resistor between the true output and the complimentary output.

Specifications subject to change without notice. All dimensions in inches. © Copyright 1998 The Connor-Winfield Corporation



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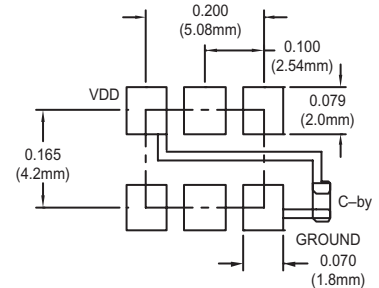
Dimensions



Pin Function

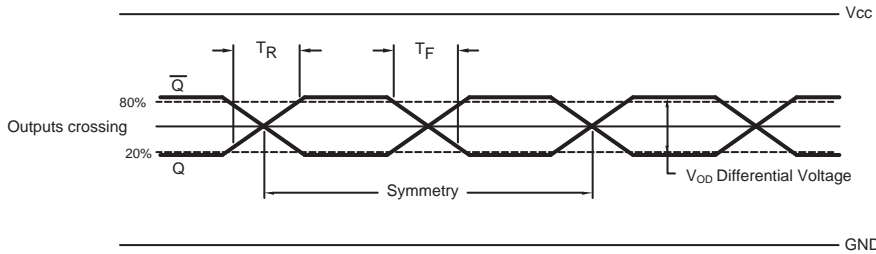
- 1: Control Voltage
- 2: Enable / Disable
- 3: Ground (Case)
- 4: Output Q
- 5: Output Q
- 6: Vcc

Suggested Pad Layout

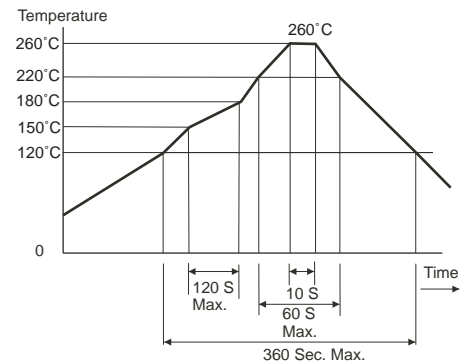


Bypass capacitor, C-by, should be ceramic capacitor $\geq .01\mu\text{f}$.

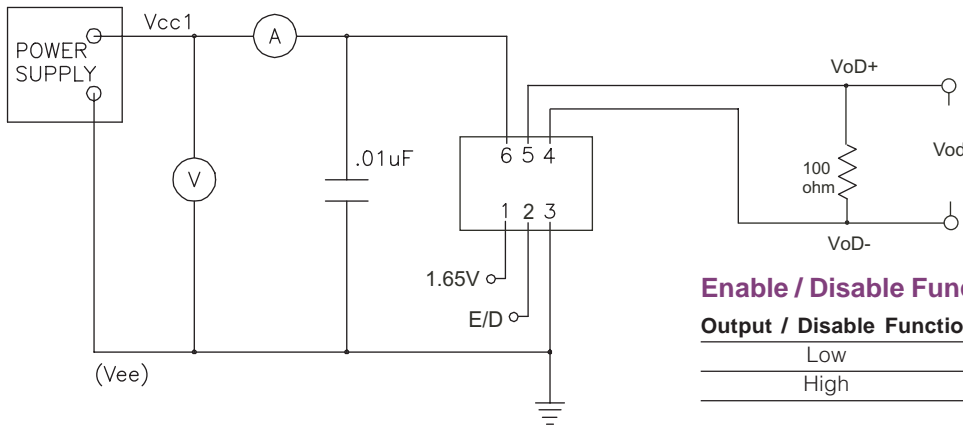
Timing Circuit



Solder Profile



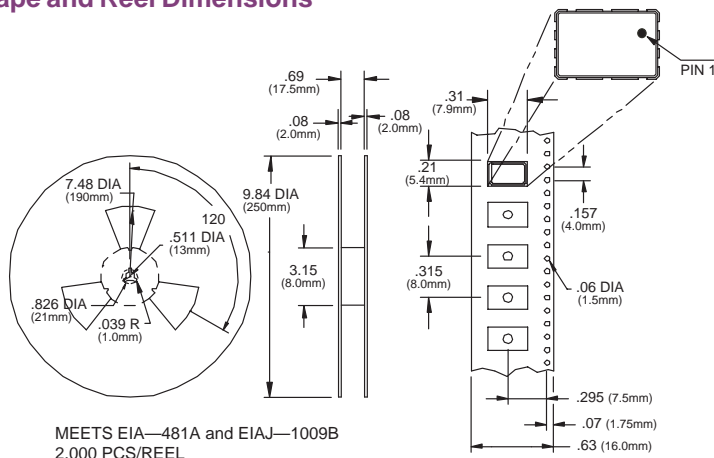
Test Circuit



Enable / Disable Function

Output / Disable Function (Pad 2)	Output
Low	Enable
High	Disable (High Impedance)

Tape and Reel Dimensions



MEETS EIA-481A and EIAJ-1009B
2,000 PCS/REEL

Ordering Information

V902 - 156.25 M

VXCO
SERIES

CENTER
FREQUENCY

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