

5.0V Surface Mount 3.2mm x 5.0mm Oscillators V7125 & V7135 Series

CONNOR WINFIELD



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VCXO

The Connor-Winfield, RoHS compliant, V7125 and V7135 are hermetically sealed, Surface Mount, 5.0V Voltage Controlled Crystal Oscillators (VCXO) with Tri-State Enable/Disable function on pad 6. The V7125 and V7135 are designed for phased lock loop applications requiring low jitter and tight stability.

Features:

RoHS Compliant
5.0V Operation
Small Surface Mount Package:
5.0mm x 3.2mm x 1.2mm
Overall Frequency Tolerance:
V7125: ± 50 ppm
V7135: ± 100 ppm
Low Jitter <1pS RMS
Temperature Range -10° to 70°C
Enable / Disable Pad 6
Tape and Reel Packaging

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	125	°C	
Supply Voltage (Vcc)	-0.5	-	7.0	Vdc	
Control Voltage (Vc)	-0.5	-	Vcc	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Frequency Range (Fo)	2.0	-	52	MHz	
Frequency Tolerance Model V7125 Model V7135	-50 -100	- -	50 100	ppm	1
Operating Temperature Range	-10	-	70	°C	
Supply Voltage (Vcc)	4.75	5.0	5.25	Vdc	
Supply Current (Icc) 1.0 to 29.999 MHz 30 to 52 MHz	- -	- -	15 25	mA	
Jitter: (BW=12kHz to 20 MHz) (BW=10Hz to 20 MHz)	- -	- -	1 5	ps RMS	

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage Range (Vc)	0.5	2.5	4.5	Vdc	
Frequency Pullability @ 25°C	± 100	-	-	ppm	
Monotonic Linearity	-10	-	10	%	
Input Impedance	-	50K	-	Ohm	
Modulation Bandwidth (3dB)	10	-	-	KHz	
Enable Input Voltage - High (Vih) Disable Input Voltage - Low (Vil)	2.7 -	- -	- 0.3	Vdc	2

HCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	-	15	pf	
Voltage High (Voh) Low (Vol)	4.5 -	- -	- 0.5	Vdc	
Current High (Ioh) Low (Iol)	-4 -	- -	- 16	mA	
Duty Cycle at 50% of Vcc	40	50	60	%	
Rise / Fall Time 20% to 80%	-	-	5	nS	
Start-up Time	-	-	10	mS	

Notes:

1. Referenced to (Fo) measured with control voltage @ 2.5Vdc. Inclusive of frequency vs. temperature stability, supply voltage, load change, shock and vibration, 15 years aging.
2. The Output is enabled with no connection on the enable pin. Output is at high impedance when disabled.

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



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Package Characteristics

Package	Hermetically sealed, ceramic leadless package.
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Environmental Characteristics

Temperature Cycle	The specimen shall meet electrical characteristics after tested 5 cycles of -55°C / 30 minutes and +125°C / 30 minutes
Hermetical	No bubbles appear in Flourinert (FC-43) at 125°C ±5°C for 5 minutes
Solvent Resistance	Marking will withstand immersion in Isopropyl Alcohol or Trichloroethylene

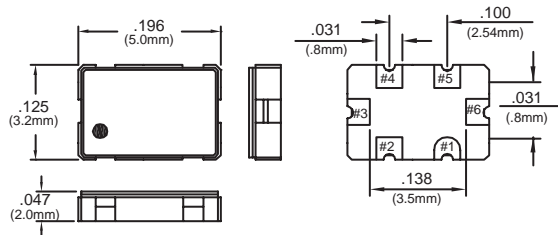
Soldering

General Conditions	260°C max x 10 sec max x 2 times max or 230°C max x 180 sec max x 1 time
Typical Operation Data (Vapor phase reflow)	20 to 100 sec up to 215°C, 50 sec at 215°C, then down to room temperature per 1 to 5°C / sec

Mechanical Characteristics

Free Drop	The specimen shall meet electrical characteristics after tested 3 times, Free Drop testing on the hard wooden board from a height of 75 cm.
Vibration	The specimen shall meet electrical characteristics after tested by the following conditions: 10-55Hz 1.5mm Amplitude, 55-2000 Hz 20 G's, 2 hours for each plane
Thermal Shock	After applied Thermal Shock of 245°C max x 10 sec max x 2 times, or 215°C max x 180 sec max, the specimen shall meet electrical characteristics
Solderability	(EIAJ-RCX-0102/101 Condition 1a) 1) Flux: MIL-F-14256 (WW Rosin=25%, Isopropyl Alcohol = 75%) 2) Solder: QQ-S-571 (Sn = 63%, Pb = 37%) 3) Solder bath temperature: 235°C ±5°C 4) Depth of immersion: Up to electrical terminal 5) Immersing time: Within 2 sec ±0.5 sec into solder bath

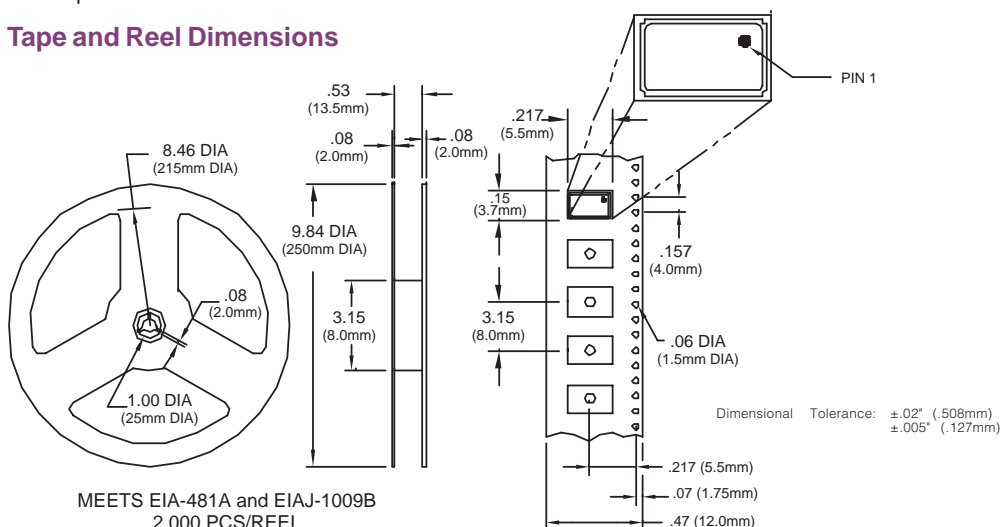
After performing the above procedures, a newly soldered coverage shall be greater than 90%



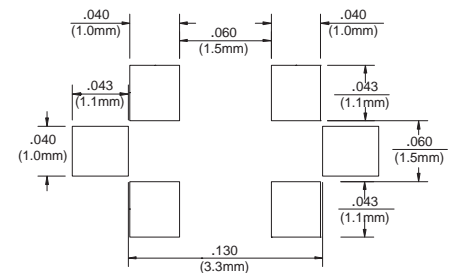
Pin Function

- 1: Control Voltage
- 2: Ground
- 3: Ground
- 4: Output
- 5: Vcc
- 6: Tri-State Enable/Disable

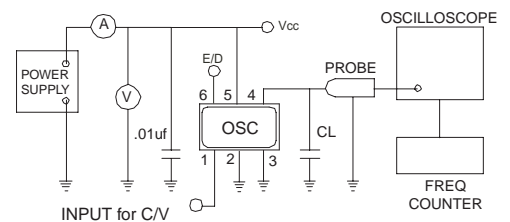
Tape and Reel Dimensions



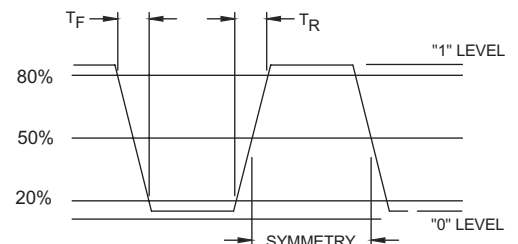
Suggested Pad Layout



Test Circuit



Output Waveform



Ordering Information

V7125 - 19.44 MHz

VCXO SERIES

CENTER FREQUENCY

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