3.3V Surface Mount 3.2mm x 5.0mm Oscillators V7223 & V7233 Series

CONNOR WINFIELD

VCXO

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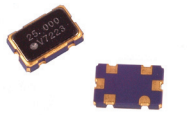
Description

The Connor-Winfield, RoHS compliant, V7223 and V7233 are hermetically sealed, Surface Mount, 3.3V Voltage Controlled Crystal Oscillators (VCXO) with Tri-State Enable/ Disable function on pad 6. The V7223 and V7233 are designed for phased lock loop applications requiring low jitter and tight stability over the industrial temperature range.



Features:

- RoHS Compliant ✓RoHS
- 3.3V Operation
- Small Surface Mount Package:
  5.0mm x 3.2mm x 1.2mm
- Overall Frequency Tolerance:
  V7223: ±50ppm
  V7233: ±100ppm
- Low Jitter <1pS RMS
- Temperature Range -40° to 85°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 V7223	-50	-	50	ppm	1
Model V7233	-100	-	100		
Operating Temperature Range	-40	-	85	°C	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	
Supply Current (Icc)					
1.0 to 29.999 MHz	-	-	15	mA	
30 to 52 MHz	-	-	25		
Jitter:					
(BW=12kHz to 20 MHz)	-	-	1	ps RMS	
(BW=10Hz to 20 MHz)	-	-	5		

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage Range (Vc)	0.15	1.65	3.15	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)	2.7	-	-	Vdc	2
Disable Input Voltage - Low (Vil)	-	-	0.3		

LVCMOS Output Characteristics

Parameter		Minimum	Nominal	Maximum	Units	Notes
Load		-	-	15	pf	
Voltage	High (Voh)	2.7	-	-	Vdc	
	Low (Vol)	-	-	0.33		
Current	High (Ioh)	-1	-	-	mA	
	Low (Iol)	-	-	4		
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.*

RoHS COMPLIANT

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Package Characteristics

Package	Hermetically sealed, ceramic leadless package.

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

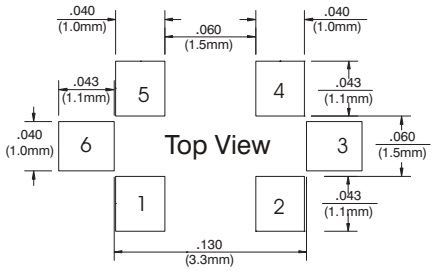
General Conditions	260°C max x 10 sec max x 2 times max or 230°C max x 180 sec max x 1 time
Typical Operation Data (Vapor phase reflow)	20 to 100 sec up to 215°C, 50 sec at 215°C, then down to room temperature per 1 to 5°C / sec

Mechanical Characteristics

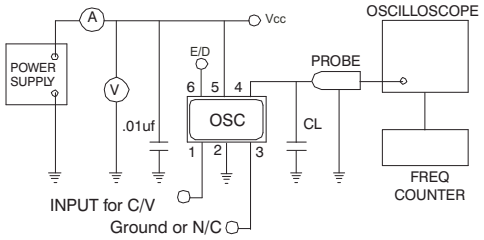
Free Drop	The specimen shall meet electrical characteristics after tested 3 times, Free Drop testing on the hard wooden board from a height of 75 cm.
Vibration	The specimen shall meet electrical characteristics after tested by the following conditions: 10-55Hz 1.5mm Amplitude, 55-2000 Hz 20 G's, 2 hours 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%

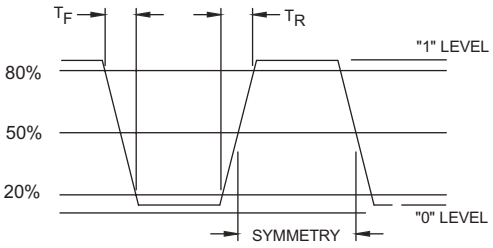
Suggested Pad Layout

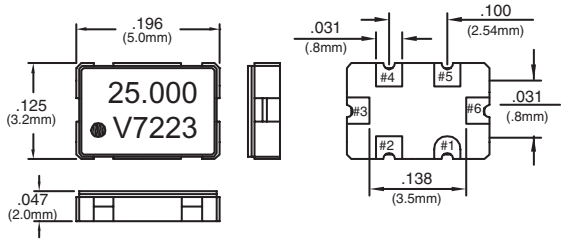


Test Circuit



Output Waveform

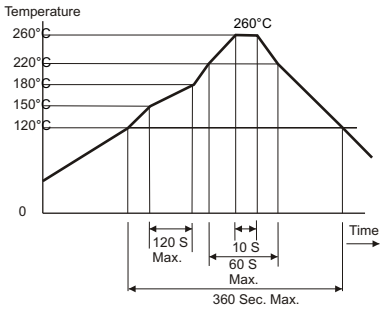




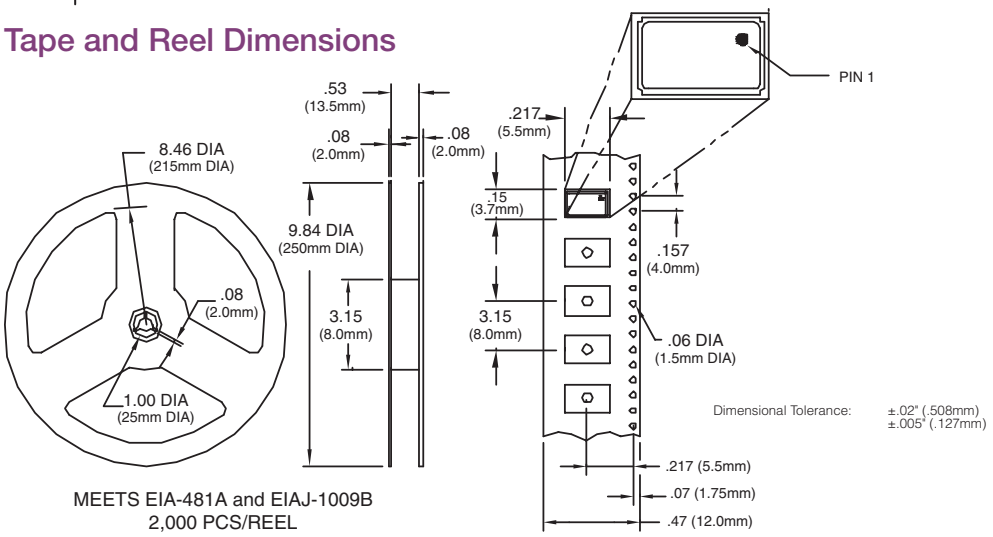
Pin Function

1: Control Voltage
2: Ground
3: Ground or No Connection
4: Output
5: Vcc
6: Tri-State Enable/Disable

Solder Profile



Tape and Reel Dimensions



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

Ordering Information

V7223 - 25.0 MHz

VCXO SERIES — CENTER FREQUENCY

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Date	30 June 2015