

# High Frequency Clock Oscillator

# CONNOR WINFIELD



2111 Comprehensive Drive

Aurora, Illinois 60505

Phone: 630-851-4722

Fax: 630-851-5040

www.conwin.com

US Headquarters

630-851-4722:

European Headquarters:

+353-61-472221

## Description

The Connor Winfield model P234 is a 3.3V, Surface Mount 5.0x7.0mm, Crystal Controlled Oscillator (XO) with LVPECL differential outputs and a enable/ disable function. The P234 is designed for use with applications requiring very high frequency, low jitter and low phase noise. The surface mount package is designed for high-density mounting and is optimum for mass production.



## Features

**Model: P234**

3.3V Operation

Total Frequency Tolerance : +/-100ppm

Temperature Range: -40 to 85°C

Differential LVPECL Outputs

Low Jitter 0.5pS RMS Typical

Enable / Disable Function Pin 2

5.0x7.0mm Surface Mount Package

Tape and Reel Packaging

RoHS Compliant / Lead Free

## Specifications

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	4.6	Vdc	
Input Voltage		-0.5	-	Vcc+0.5	Vdc	

### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	65	-	200	MHz	
Total Frequency Tolerance		-100	-	100	ppm	1
Operating Temperature Range		-40	-	85	°C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)	-	-	60	mA	
Jitter (BW= 10Hz to 20MHz)		-	-	5	pS RMS	
Jitter (BW= 12kHz to 20MHz)		-	-	1	pS RMS	
SSB Phase Noise at 10Hz offset		-	-60	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-90	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-125	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-140	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-145	-	dBc/Hz	
Startup Time		-	-	10	ms	

### INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Disable Input Voltage (Low)	(Vil)	-	-	30% Vcc	Vdc	2
Enable Input Voltage (High)	(Vih)	70% Vcc	-	-	Vdc	2

### LVPECL OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	Ohms	3
Voltage (High)	(Voh)	2.275	-	-	Vdc	
(Low)	(Vol)	-	-	1.68	Vdc	
Duty Cycle		45	50	55	%	4
Rise / Fall Time 20% to 80%		-	0.5	1	nS	

### PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Hermetically sealed ceramic package and metal cover.
Soldering Process	RoHS compliant, see solder profile on page 2.

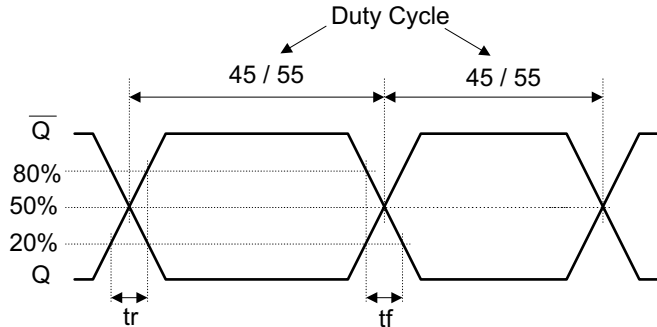
### Notes

- 1) Includes initial tolerance, deviation over temperature, supply and load variations, shock, vibration and 20 years aging.
- 2) When the oscillator is disabled, the outputs are at High Impedance. Output is enabled with no connection on pad 2.
- 3) Output must be terminated into 50 ohms to Vcc - 2V or Thevenin equivalent.
- 4) Duty Cycle measured at 50% of output swing.

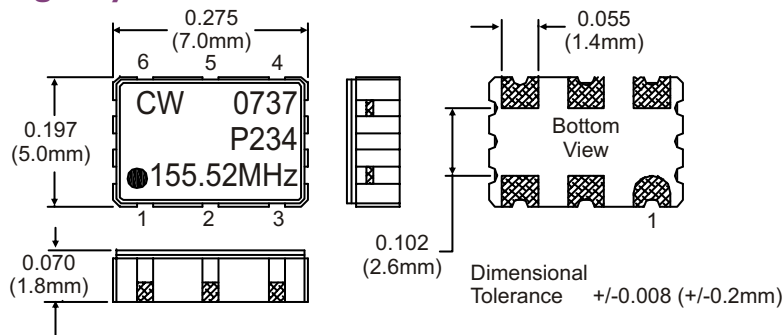


Bulletin	Ec256
Page	1 of 2
Revision	00
Date	11 Sep 2007

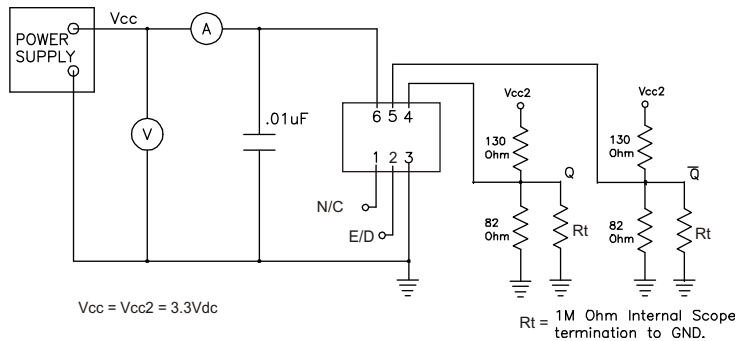
## Output Waveform



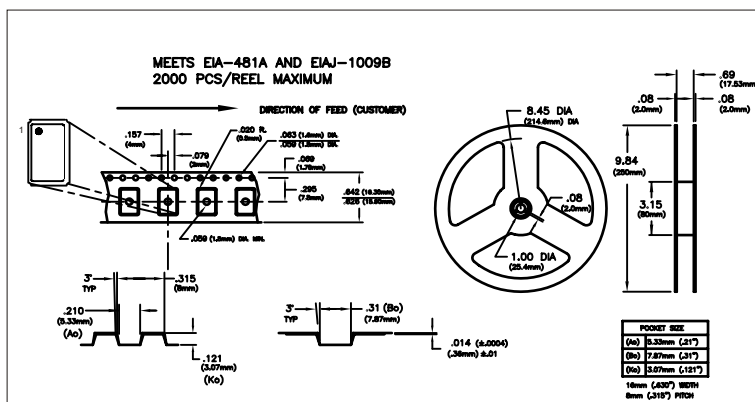
## Package Layout



## Test Circuit



## Tape and Reel Information



Specifications subject to change without notice. All dimensions in inches. © Copyright 2007 The Connor-Winfield Corporation

## Enable / Disable Function

TABLE 6.0

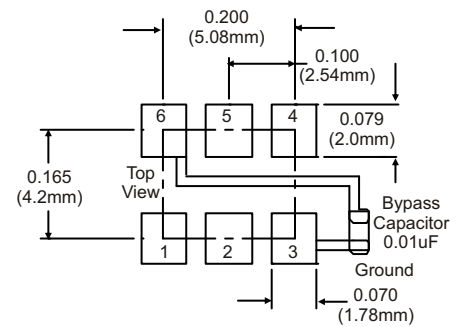
Enable / Disable Function (Pad 2)	Output
No Connection	Enable
High	Enable
Low	Disable (High Impedance)

## Pad Connections

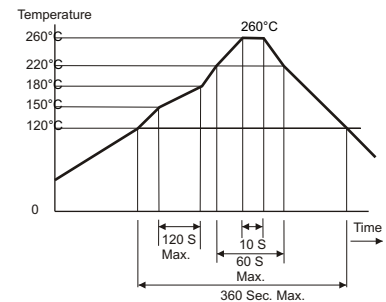
TABLE 7.0

Pad	Pad Connection
1	N/C
2	Enable / Disable
3	Ground (Case)
4	Output Q
5	Output $\bar{Q}$
6	Vcc

## Suggested Pad Layout



## Solder Profile



## Ordering Information

P234 - 155.52M

VCXO SERIES

CENTER FREQUENCY

US Headquarters:  
630-851-4722  
European Headquarters:  
+353-61-472221

Bulletin	Ec256
Page	2 of 2
Revision	00
Date	11 Sep 2007