

CRYSTAL CONTROLLED OSCILLATORS

5.0V SURFACE MOUNT PECL CLOCK



FPHA514

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7.0	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	44.736	-	200	MHz	
Total Frequency Tolerance		-25	-	25	ppm	1
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.0	5.25	Vdc	
Supply Current	(Icc)	-	-	70	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		-	-100	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-125	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-135	-	dBc/Hz	

INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Disable Input Voltage (High)	(Vih)	3.96	-	-	Vdc	2
Enable Input Voltage (Low)	(Vil)	-	-	3.40	Vdc	2

PECL OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	Ohms	3
Voltage (High)	(Voh)	3.96	-	-	Vdc	
Voltage (Low)	(Vol)	-	-	3.40	Vdc	
Duty Cycle		45	50	55	%	4
Rise / Fall Time 20% to 80%		-	-	1	nS	

PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Non-hermetic package consisting of an FR4 substrate with grounded metal cover.
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PROCESS RECOMMENDATIONS

TABLE 6.0

Soldering Process	See solder profile page 2.
Wash	Ultrasonic cleaning is not recommended.

Notes

- Includes initial tolerance, deviation over temperature, supply and load variations, shock, vibration and 10 years aging.
- Output is enabled with no connection on pin 2. When the oscillator is disabled, the true output is in a low state (Vol) and the complementary output is in the high state (Voh).
- Output must be terminated into 50 ohms to Vcc - 2V or Thevenin equivalent.
- Duty Cycle measured at 3.67V

DESCRIPTION

The Connor-Winfield FPHA514 is a fixed frequency surface mount Crystal Controlled Oscillator (XO) designed for applications requiring low jitter and tight frequency stability. Operating at 5.0V supply voltage, the FPHA514 provides PECL Differential Outputs with an enable/disable function.

FEATURES

5.0V OPERATION

LOW JITTER <1ps RMS

OVERALL FREQUENCY TOLERANCE: ±25ppm

TEMPERATURE RANGE: 0 to 70°C

PECL DIFFERENTIAL OUTPUTS

ENABLE / DISABLE

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

FPHA514 - 155.52M

PECL
SERIES

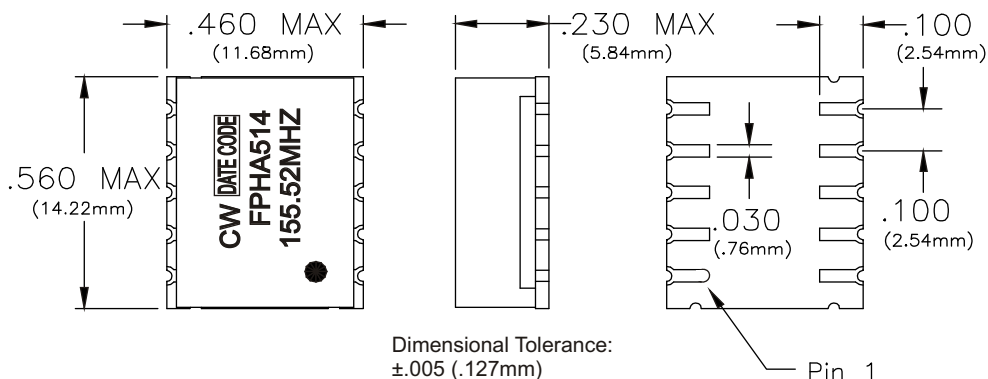
CENTER
FREQUENCY

Specifications subject to change without notice.

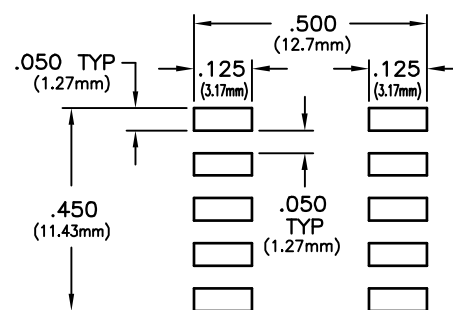
PRODUCT DATA SHEET

CRYSTAL CONTROLLED OSCILLATORS

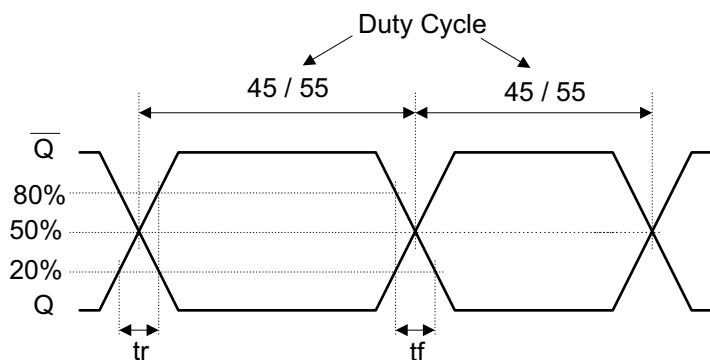
Package Layout



Suggested Pad Layout



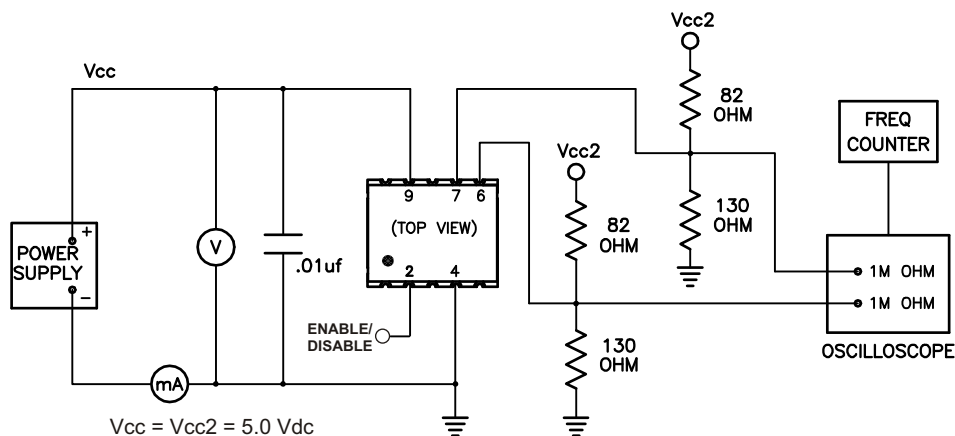
Output Waveform



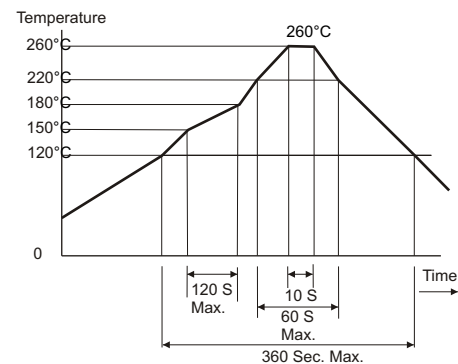
Pin Connections

Pin	Connection
1	N/C
2	Enable / Disable
3	N/C
4	Ground
5	N/C
6	\bar{Q} Output
7	Q Output
8	N/C
9	Vcc
10	N/C

Test Circuit



Solder Profile



Specifications subject to change without notice.