

# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 5.0V PECL CLOCK



FPHA552

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°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		-15		15	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	
(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

Solder Reflow	The component solder used internal to this device has a melting point of 221°C. The peak temperature inside the device should be less than or equal to 220°C for a maximum of 10 seconds
Wash	Ultrasonic cleaning is not recommended.

#### Notes

- 1) Includes initial tolerance, deviation over temperature, supply and load variations, shock, vibration and 10 years aging.
- 2) When the oscillator is disabled, the true output is in a low state (Vol).
- 3) Output must be terminated into 50 ohms to Vcc - 2V or Thevenin equivalent.
- 4) Duty Cycle measured at 3.67V

### DESCRIPTION

The Connor-Winfield FPHA552 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 FPHA552 provides a PECL compatible output with an enable/disable function.

### FEATURES

- 5.0V OPERATION
- ENABLE/DISABLE
- LOW JITTER <1ps RMS
- OVERALL FREQUENCY TOLERANCE: ±15ppm
- TEMPERATURE RANGE: 0 to 70°C
- SINGLE-ENDED PECL OUTPUT
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

### ORDERING INFORMATION

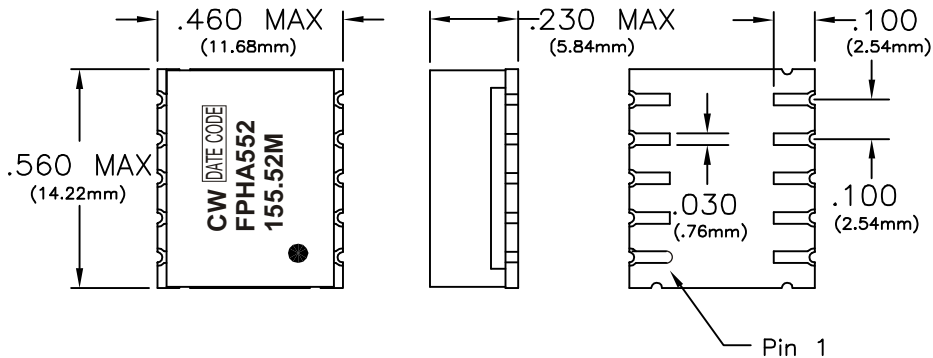
FPHA552 - 155.52MHz

ECL  
SERIES

CENTER  
FREQUENCY

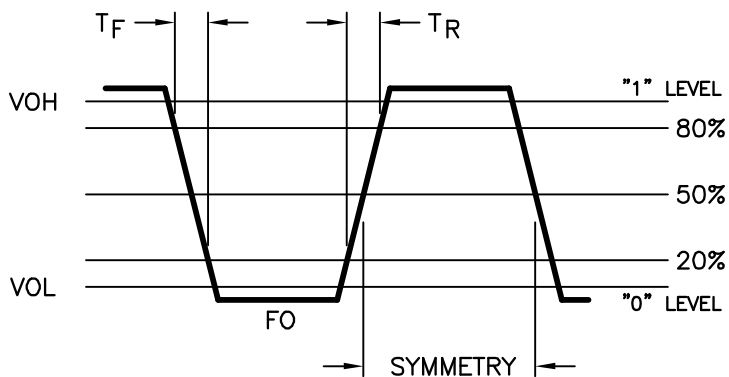
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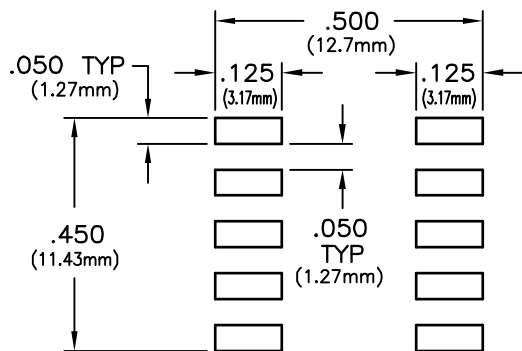


Pin	Connection
1	N/C
2	Enable / Disable
3	N/C
4	Ground
5	N/C
6	N/C
7	Q Output
8	N/C
9	Vcc
10	N/C

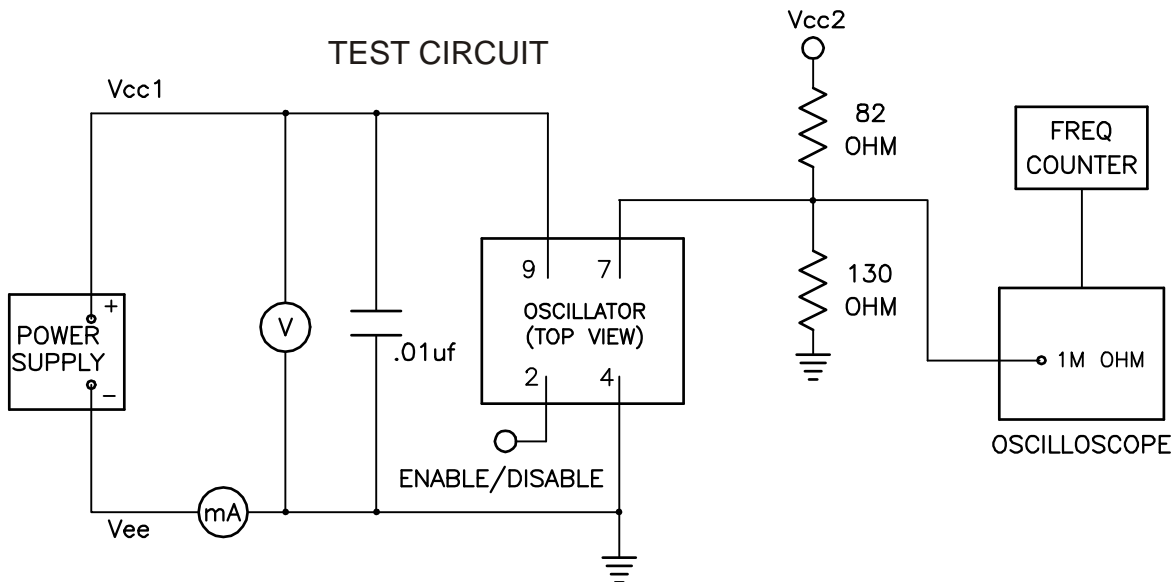
OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT



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