

CRYSTAL CONTROLLED OSCILLATORS

SURFACE MOUNT 5.0V PECL CLOCK



FPHA554

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	
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

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

- Includes initial tolerance, deviation over temperature, supply and load variations, shock, vibrati on and 10 years aging.
- 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 FPHA554 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 FPHA554 provides PECL Differential Outputs with an enable/disable function.

FEATURES

5.0V OPERATION

LOW JITTER <1ps RMS

OVERALL FREQUENCY TOLERANCE: ±15ppm

TEMPERATURE RANGE: 0 to 70°C

PECL DIFFERENTIAL OUTPUTS

ENABLE / DISABLE

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

ORDERING INFORMATION

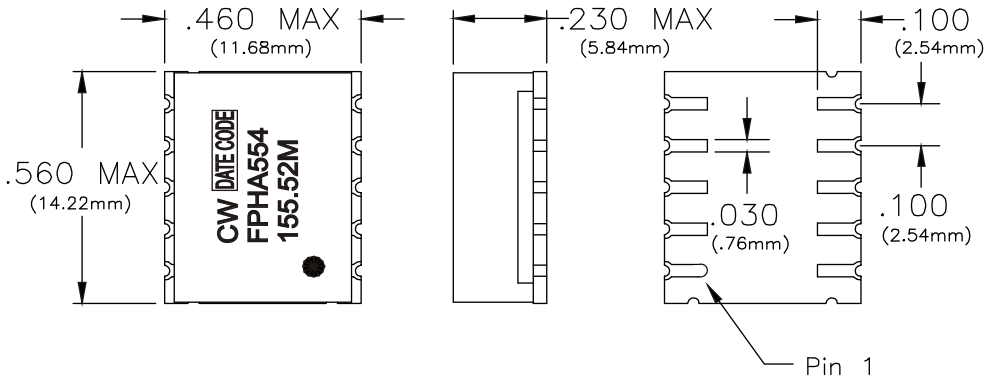
FPHA554 - 155.52MHz

ECL
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

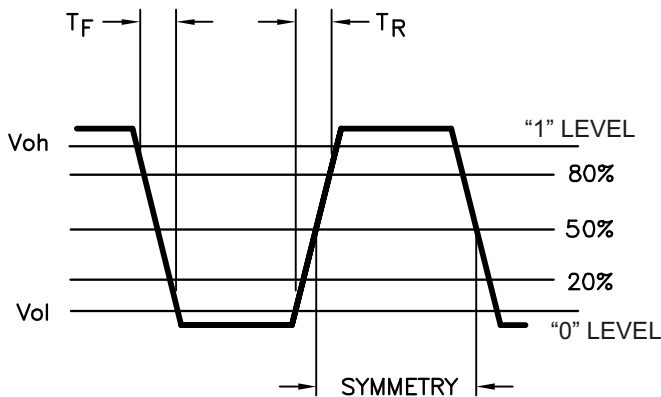
CRYSTAL CONTROLLED OSCILLATORS



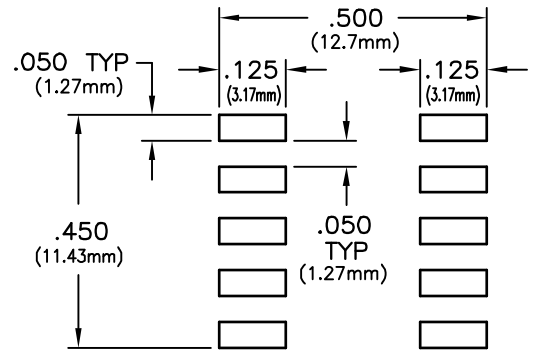
Pin	Connection
1	N/C
2	Enable / Disable
3	N/C
4	Ground
5	N/C
6	Q Output
7	Q Output
8	N/C
9	Vcc
10	N/C

Dimensional Tolerance:
±.005 (.127mm)

OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT

