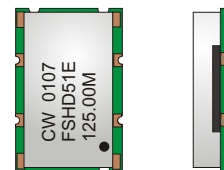


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT HCMOS CLOCK



FSHD51E

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	

### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.8	-	170	MHz	
Total Frequency Tolerance		-25	-	25	ppm	1
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.50	5.00	5.50	Vdc	
Supply Current	1.8 to 31.999 MHz	(Icc)	-	40	mA	
	32 to 66.999 MHz	(Icc)	-	50	mA	
	67 to 124.999 MHz	(Icc)	-	80	mA	
	125 to 170 MHz	(Icc)	-	90	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		-	-135	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-140	-	dBc/Hz	

### INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Tri-state Enable Voltage	(Vih)	≥70%Vcc	-	-	Vdc	2
Tri-state Disable Voltage	(Vil)	-	-	≤30%Vcc	Vdc	2

### HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	pF	
Voltage (High)	(Voh)	≥ 0.9(Vcc)	-	-	Vdc	
(Low)	(Vol)	-	-	≤ 0.1(Vcc)	Vdc	
Current (High)	(Ioh)	-16	-	-	mA	
(Low)	(Iol)	-	-	16	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	3	5	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.

#### Note:

- Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 20 years aging.
- Oscillator output is enabled with no connection on pad 1

### DESCRIPTION

The Connor-Winfield FSHD51E is a 5.0V, surface mount, Crystal Controlled Oscillator (XO) HCMOS / TTL Compatible. The FSHD51E is designed for applications requiring high frequency, low jitter and tight frequency stability.

### FEATURES

- 5.0V OPERATION
- FREQUENCY TOLERANCE ±25ppm
- TEMPERATURE RANGE: 0 to 70°C
- LOW JITTER <1ps RMS
- TRI-STATE ENABLE/DISABLE
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

### ORDERING INFORMATION

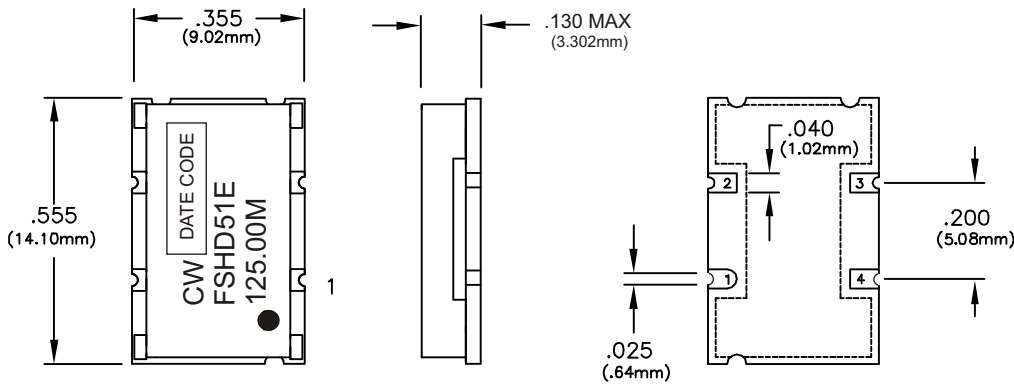
FSHD51E - 125.00 MHz

CLOCK  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

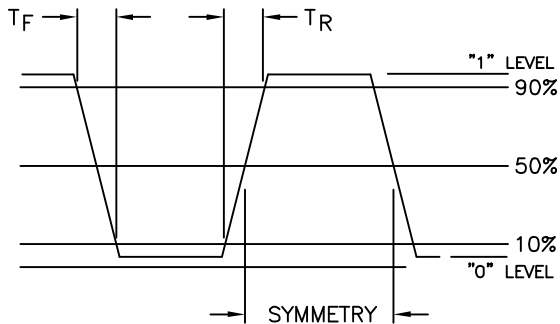
CRYSTAL CONTROLLED OSCILLATORS



PIN	CONNECTION
1	ENABLE/DISABLE
2	GROUND
3	OUTPUT
4	Vcc

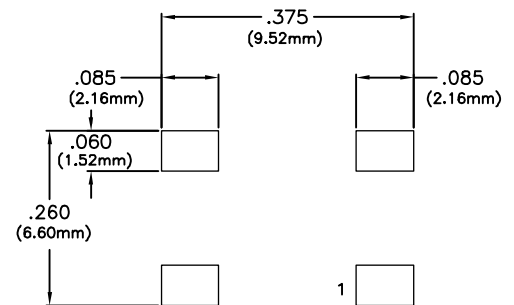
Dimensional Tolerance:  
±.005 (.127mm)

OUTPUT WAVEFORM

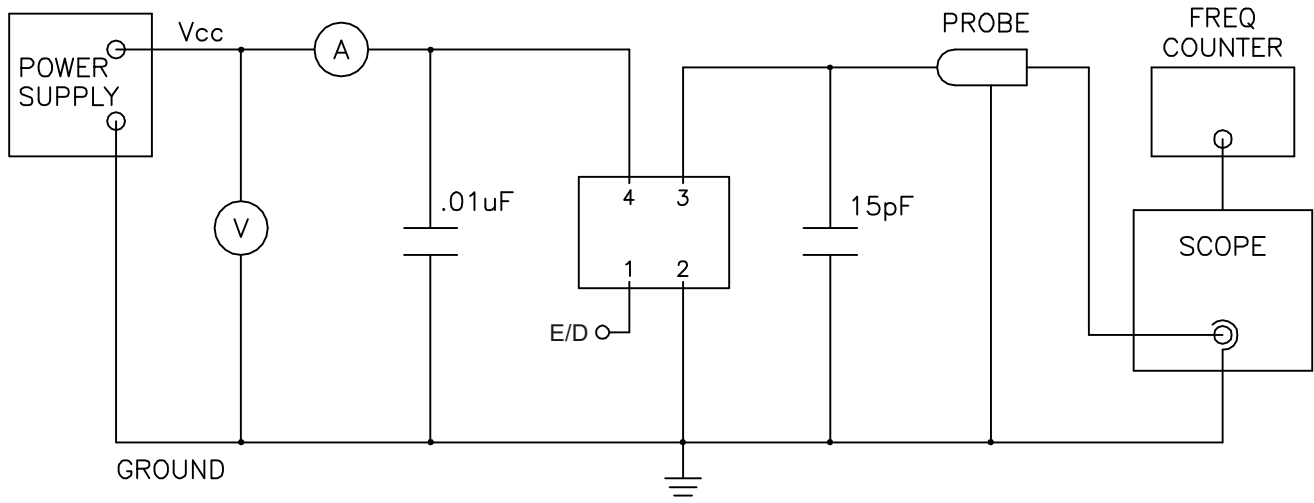


SUGGESTED PAD LAYOUT

(TOP VIEW)



TEST CIRCUIT



Specifications subject to change without notice.