

# CRYSTAL CONTROLLED OSCILLATORS

## 2.5V SURFACE MOUNT 6x3.5mm CRYSTAL CLOCK OSCILLATOR



6222

### 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	

### MODEL 6222

Frequency Range	(Fo)	1.8	-	50	MHz	
Frequency Tolerance:		-50	-	50	ppm	1

### OPERATING SPECIFICATIONS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Operating Temperature Range		-40	-	85	°C	
Supply Voltage	(Vdd)	2.375	2.5	2.625	Vdc	
Supply Current	1.80 to 31.999 MHz	(Icc)	-	10	mA	
	32.0 to 50.0 MHz	(Icc)	-	12	mA	

### INPUT CHARACTERISTICS

TABLE 4.0

Enable Voltage	(Vih)	≥ 70% Vdd	-	-	Vdc	2
Disable Voltage	(Vil)	-	-	≤ 30% Vdd	Vdc	
Enable Time		-	-	10	mS	
Disable Time		-	-	150	nS	
Output Disable Current	(Icc)	-	-	10	uA	

### HCMOS OUTPUT CHARACTERISTICS

TABLE 5.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage	(High)	(Voh)	0.9Vcc	-	Vdc	
	(Low)	(Vol)	-	0.1Vcc	Vdc	
Current	(High)	(Ioh)	-4	-	mA	
	(Low)	(Iol)	-	4	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	5	nS	
Start-Up Time		-	-	10	mS	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	

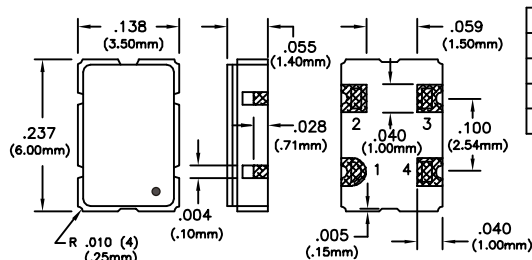
### PACKAGE CHARACTERISTICS

TABLE 6.0

Package	Hermetically sealed ceramic package and metal cover
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### Note:

- Inclusive of calibration @ 25°C, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 10 years aging.
- Oscillator output is enabled with no connection on pad 1



PIN	CONNECTION
1	TRI-STATE E/D
2	GROUND
3	OUTPUT
4	VDD

Dimensional Tolerance: ±.008 (.20mm)

### DESCRIPTION

The Connor-Winfield model 6222 is a 2.5V HCMOS, Surface Mount, Fixed Frequency Crystal Oscillator (XO) designed for use in all applications requiring precision clocks. This oscillator features low stand-by current (10uA) when the output is disabled. The surface mount package is designed for high-density mounting and is optimum for mass production.

### FEATURES

2.5V OPERATION

1.8 to 50MHz

TEMPERATURE RANGE: -40 to 85°C

OVERALL FREQUENCY TOLERANCE: ±50ppm

TRI-STATE ENABLE/DISABLE FUNCTION

POWER SAVING FUNCTION: 10uA WHEN DISABLED

CERAMIC SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

### ORDERING INFORMATION

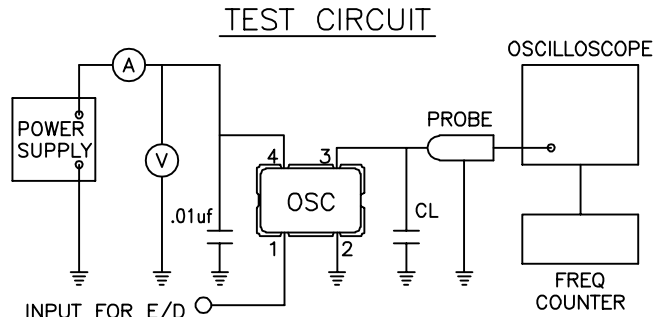
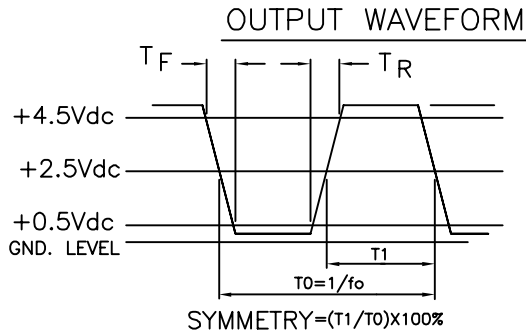
6222 - 25.00 MHz

CLOCK SERIES

CENTER FREQUENCY

Specifications subject to change without notice.

**CRYSTAL CONTROLLED OSCILLATORS**



**MECHANICAL CHARACTERISTICS**

**FREE DROP:**

The specimen shall meet electrical characteristics after tested 3 times Free Drop testing on the hard wooden board from a height of 75cm.

**VIBRATION:**

The specimen shall meet electrical characteristics after tested by the following conditions;  
10-55Hz 1.5mm Amplitude, 55-2000Hz 20G's,  
2 hours for each plane.

**THERMAL SHOCK:**

After applied Thermal Shock of 260 C max x 10 sec max x 2 times, or 230 C max x 180 sec max, the specimen shall meet electrical characteristics.

**SOLDERABILITY: (EIAJ-RCX-0102/101 Condition 1a)**

1. Flux: MIL-F-14256 (WW Rosin=25%, Isopropyl alcohol=75%)
2. Solder: QQ-S-571 (Sn=63%, Pb=37%)
3. Solder bath temperature: 235 C +/-5 C.
4. Depth of immersion: Up to electrical terminal.
5. Immersing time: Within 2 sec +/-0.5 sec into solder bath.

After performing the above procedures, a newly soldered coverage shall be greater than 90%.

**ENVIRONMENTAL CHARACTERISTICS**

**TEMPERATURE CYCLE:**

The specimen shall meet electrical characteristics after tested 5 cycles of -55 C/30 min & +125 C/30 min.

**HERMETICAL**

No bubbles appear in Flourinert (FC-43) at 125 C +/-5 C, for 5 minutes.

**SOLVENT RESISTANCE:**

Marking will withstand immersion in Isopropyl Alcohol or Trichloroethylene.

**SOLDERING**

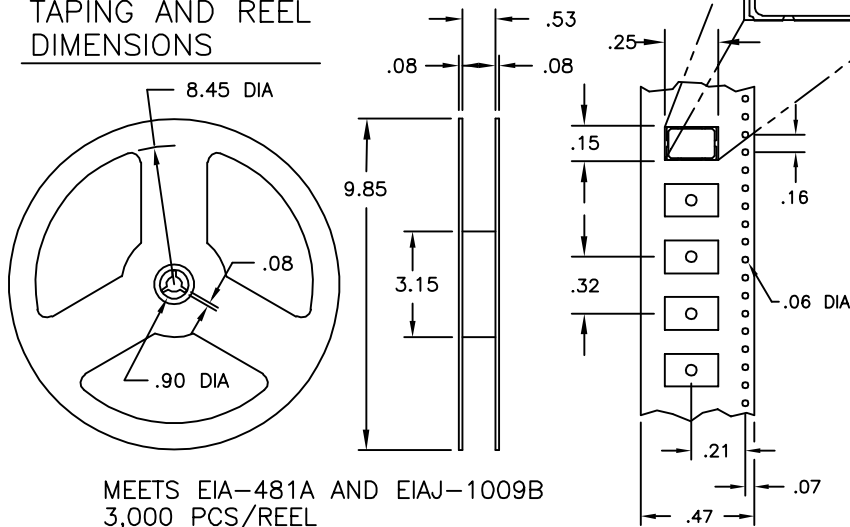
**GENERAL CONDITIONS:**

260°C max x 10 sec max x 2 times max or  
230°C max x 180 sec max x 1 time.

**TYPICAL OPERATION DATA (Vapor phase reflow)**

20 to 100 sec up to 215°C, 50 sec at 215°C then  
down to room temperature per 1 to 5°C/sec

**TAPING AND REEL  
DIMENSIONS**



PIN 1

**SUGGESTED PAD LAYOUT**

