

# CRYSTAL CONTROLLED OSCILLATORS

## 5.0V 14 Pin DIP HCMOS Clock Oscillator

HC13R8G  
HC14R8G  
HC15R8G  
HC16R8G

### 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 SPECIFICATIONS:

TABLE 2.0

#### MODEL HC13R8G

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.0	-	80	MHz	
Frequency Tolerance:		-25	-	25	ppm	1
Operating Temperature Range		0	-	70	°C	

#### MODEL HC14R8G

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.0	-	80	MHz	
Frequency Tolerance:		-50	-	50	ppm	1
Operating Temperature Range		0	-	70	°C	

#### MODEL HC15R8G

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.0	-	80	MHz	
Frequency Tolerance:		-100	-	100	ppm	1
Operating Temperature Range		0	-	70	°C	

#### MODEL HC16R8G

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.0	-	80	MHz	
Frequency Tolerance:		-100	-	100	ppm	1
Operating Temperature Range		-40	-	85	°C	

### OPERATING SPECIFICATIONS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Supply Voltage	(Vdd)	4.5	5.0	5.5	Vdc	
Supply Current	1.0 to 24.999 MHz (Icc)	-	-	25	mA	
	25 to 49.999 MHz (Icc)	-	-	35	mA	
	50 to 80 MHz (Icc)	-	-	60	mA	
Period Jitter		-	-	5	ps rms	
Phase Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	

### HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage (High)	(Voh)	4.5	-	-	Vdc	
(Low)	(Vol)	-	-	0.4	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		-	3	10	ms	

### PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Hermetically sealed, welded metal package
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### PROCESS RECOMMENDATIONS

TABLE 6.0

Soldering Process	RoHS compliant, lead free, see solder profile page 2.
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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.

### DESCRIPTION

Connor Winfield models HC13R8G, HC14R8G, HC15R8G and HC16R8G are 5.0V HCMOS, fixed frequency Crystal Oscillator (XO) designed for use in all applications requiring precision clocks over the commercial or industrial temperature ranges.

### FEATURES

5.0V OPERATION

FREQUENCY RANGE: 1.0 to 80 MHz

OVERALL FREQUENCY TOLERANCE:

HC13R8G: ±25ppm, 0 to 70°C

HC14R8G: ±50ppm, 0 to 70°C

HC15R8G: ±100ppm, 0 to 70°C

HC16R8G: ±100ppm, -40 to 85°C

HERMETICALLY SEALED PACKAGE

RoHS COMPLIANT / LEAD FREE

### ORDERING INFORMATION

HC15R8G - 008.0M

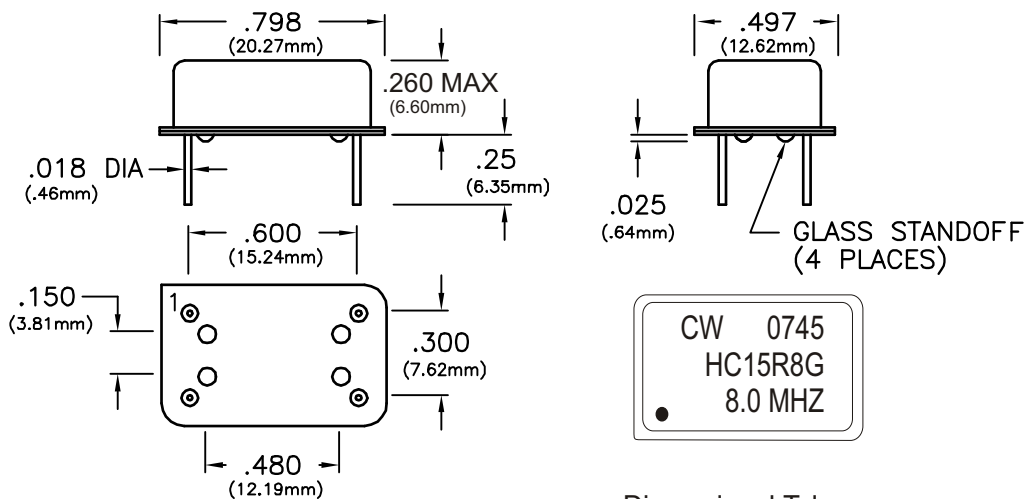
HCMOS  
CLOCK  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

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## Package Outline and Dimensions



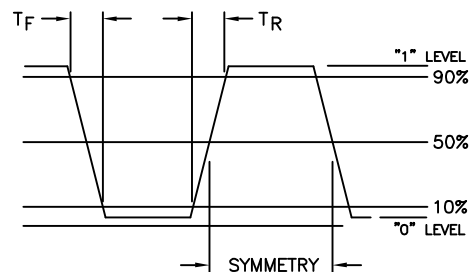
Dimensional Tolerance:  
 ±.005 (.127mm)  
 ±.02 (.508mm)

## Pin Connections

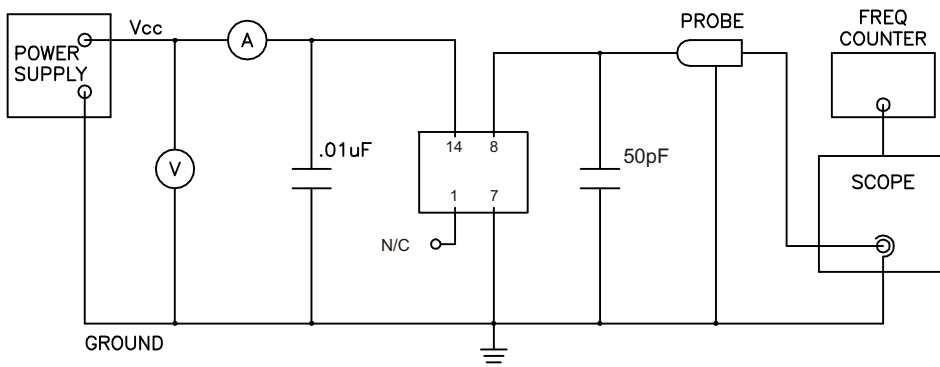
TABLE 7.0

Pin	Connection
1	N/C
7	Ground
8	Output
14	Vcc

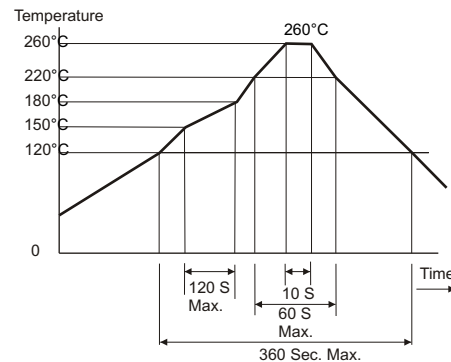
## Output Waveform



## Test Circuit



## Solder Profile



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