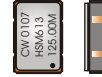


CRYSTAL CONTROLLED OSCILLATORS

3.3V Surface Mount 7.5mmx5mm Crystal Clock Oscillator



HSM613, HSM623,  
HSM633

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:  
MODEL HSM613

TABLE 2.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.544	-	125	MHz	
Frequency Tolerance:		-25	-	25	ppm	1

MODEL HSM623

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.544	-	170	MHz	
Frequency Tolerance:		-50	-	50	ppm	1

MODEL HSM633

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.544	-	170	MHz	
Frequency Tolerance:		-100	-	100	ppm	1

OPERATING SPECIFICATIONS

TABLE 3.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE		
Operating Temperature Range		-40	-	85	°C			
Supply Voltage	(Vdd)	3.0	3.3	3.6	Vdc			
Supply Current	1.544 to 31.99 MHz	(Icc)	-	-	15	mA		
		32 to 49.99 MHz	(Icc)	-	-	20	mA	
			50 to 66.99 MHz	(Icc)	-	-	25	mA
				67 to 124.99 MHz	(Icc)	-	-	40
			125 to 170 MHz		(Icc)	-	-	50

INPUT CHARACTERISTICS

TABLE 4.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Enable Voltage	(Vih)	= 70% Vdd	-	-	Vdc	2
Disable Voltage	(Vil)	-	-	= 30% Vdd	Vdc	
Enable Time		-	-	10	nS	
Disable Time		-	-	150	nS	
Output Disable Current	(Icc)	-	-	10	uA	

HCMOS OUTPUT CHARACTERISTICS

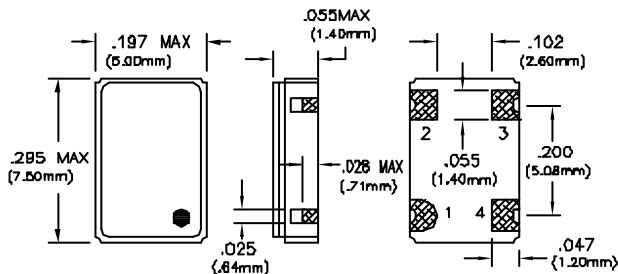
TABLE 5.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage (High)	(Voh)	2.91	-	-	Vdc	
	(Vol)	-	-	0.33	Vdc	
Current (High)	(Ioh)	-2	-	-	mA	
	(Iol)	-	-	2	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	6	nS	
Start-Up Time		-	-	10	mS	
Jitter		-	-	5	pS RMS	

PACKAGE CHARACTERISTICS

TABLE 6.0

Package	Hermetically sealed ceramic package and metal cover
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PIN	CONNECTION
1	TRI-STATE E/D
2	GROUND
3	OUTPUT
4	VDD

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

DESCRIPTION

The Connor-Winfield HSM613, HSM623, HSM633 are 3.3V HCMOS, Surface Mount, Fixed Frequency Crystal Oscillators (XO) designed for use in all applications requiring precision clocks. The surface mount package is designed for high-density mounting and is optimum for mass production.

FEATURES

1.544 to 170 Mhz

3.3V OPERATION

TRI-STATE ENABLE/DISABLE

POWER SAVING FUNCTION: 10uA WHEN DISABLED

OVERALL FREQUENCY TOLERANCE:  
 HSM613 ±25ppm  
 HSM623 ±50ppm  
 HSM633 ±100ppm

TEMPERATURE RANGE: -40 to 85°C

CERAMIC SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

ORDERING INFORMATION

HSM633 - 125.00 MHz

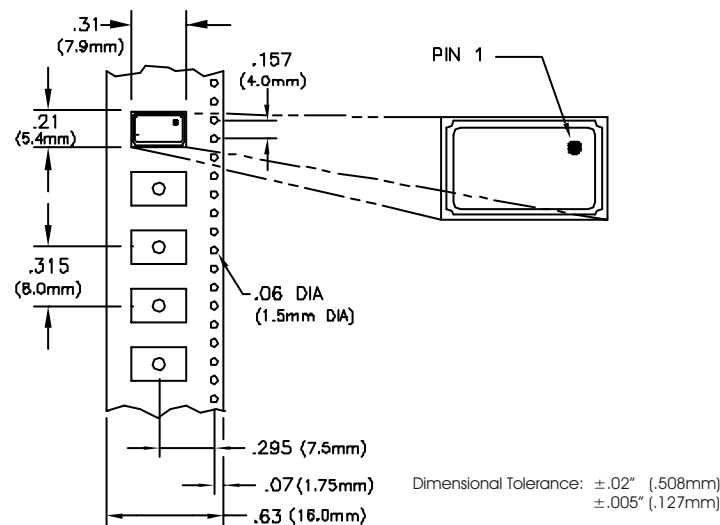
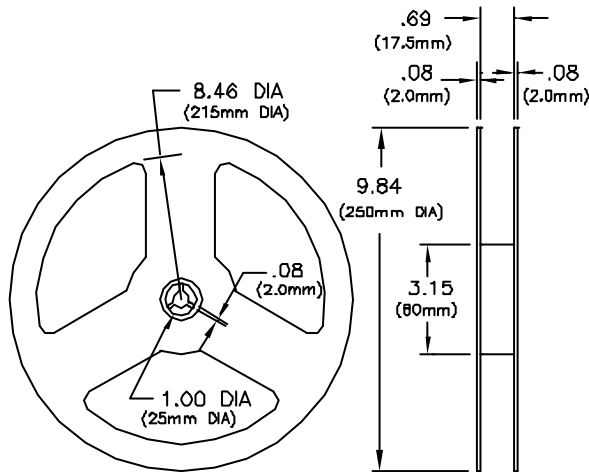
CLOCK SERIES

CENTER FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

<p><b>ENVIRONMENTAL CHARACTERISTICS</b></p> <p><b>TEMPERATURE CYCLE:</b> The specimen shall meet electrical characteristics after tested 5 cycles of -55°C/30 min &amp; +125°C/30 min.</p> <p><b>HERMETICAL</b> No bubbles appear in Flourinert (FC-43) at 125°C ±5°C, for 5 minutes.</p> <p><b>SOLVENT RESISTANCE:</b> Marking will withstand immersion in Isopropyl Alcohol or Trichloroethylene.</p>	<p><b>TEST CIRCUIT</b></p>
<p><b>SOLDERING</b></p> <p><b>GENERAL CONDITIONS:</b> 260°C max x 10 sec max x 2 times max or 230°C max x 180 sec max x 1 time.</p> <p><b>TYPICAL OPERATION DATA (Vapor phase reflow)</b> 20 to 100 sec up to 215°C, 50 sec at 215°C then down to room temperature per 1 to 5°C/sec</p>	<p><b>OUTPUT WAVEFORM</b></p>
<p><b>MECHANICAL CHARACTERISTICS</b></p> <p><b>FREE DROP:</b> The specimen shall meet electrical characteristics after tested 3 times Free Drop testing on the hard wooden board from a height of 75cm.</p> <p><b>VIBRATION:</b> 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.</p> <p><b>THERMAL SHOCK:</b> 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.</p> <p><b>SOLDERABILITY: (EIAJ-RGX-0102/1D1 Condition 1a)</b> 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%.</p>	<p><b>SUGGESTED PAD LAYOUT</b></p> <p>Bypass capacitor, C-by, should be ceramic capacitor <math>\geq</math> .01uf.</p>
<p><b>TAPING AND REEL DIMENSIONS</b></p>	



MEETS EIA-481A AND EIAJ-1009B  
2,000 PCS/REEL

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