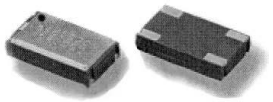
CONNOR WINFIELD

THE CONNOR-WINFIELD CORP.
2111 COMPREHENSIVE DRIVE.
AURORA, IL 60505.
FAX (630) 851-5040.
PHONE (630) 851-4722.
WWW.CONWIN.COM

PRODUCT DATA SHEET

CRYSTAL CONTROLLED OSCILLATORS

5.0V SURFACE MOUNT 11x6.35mm HCMOS CLOCK OSCILLATOR



HSM546, HSM516
HSM526, HSM536

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 HSM546						
Frequency Range	(Fo)	1.8	-	80	MHz	
Frequency Tolerance:		-20	-	20	ppm	1
MODEL HSM516						
Frequency Range	(Fo)	1.8	-	80	MHz	
Frequency Tolerance:		-25	-	25	ppm	1
MODEL HSM526						
Frequency Range	(Fo)	1.8	-	80	MHz	
Frequency Tolerance:		-50	-	50	ppm	1
MODEL HSM536						
Frequency Range	(Fo)	1.8	-	80	MHz	
Frequency Tolerance:		-100	-	100	ppm	1

OPERATING SPECIFICATIONS — TABLE 3.0

PARAMETER			MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Operating Temperature Range			0	-	70	°C	
Supply Voltage		(Vdd)	4.5	5.0	5.5	Vdc	
Supply Current	1.8 to 19.999 MHz	(Icc)	-	-	20	mA	
	20 to 49.999 MHz	(Icc)	-	-	30	mA	
	50 to 69.999 MHz	(Icc)	-	-	50	mA	
	70 to 80.0 MHz	(Icc)	-	-	80	mA	

INPUT CHARACTERISTICS — TABLE 4.0

Enable Voltage	(Vih)	2.2	-	-	Vdc	2
Disable Voltage	(Vil)	-	-	.08	Vdc	
Enable Time		-	-	100	nS	
Disable Time		-	-	100	nS	

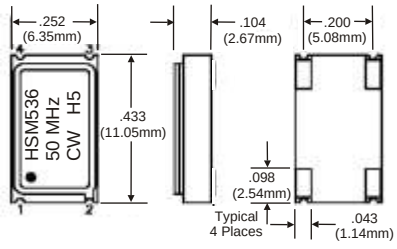
HCMOS OUTPUT CHARACTERISTICS — TABLE 5.0

PARAMETER			MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD			-	-	50	pF	
Voltage	(High)	(Voh)	4.50	-	-	Vdc	
	(Low)	(Vol)	-	-	0.50	Vdc	
Current	(High)	(Ioh)	-16	-	-	mA	
	(Low)	(Ioh)	-	-	16	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

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



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

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

DESCRIPTION

The Connor-Winfield models HSM546, HSM516, HSM526 and HSM536 are 5.0V HCMOS, Surface Mount, Fixed Frequency Crystal Oscillators (XO) designed for use in all applications requiring precision clocks over the 0 to 70°C, Commercial Temperature Range. The surface mount package is designed for high-density mounting and is optimum for mass production.

FEATURES

1.8 to 80 MHz

5.0V OPERATION

TRI-STATE ENABLE / DISABLE FUNCTION

OVERALL FREQUENCY TOLERANCE:
HSM546 ±20ppm
HSM516 ±25ppm
HSM526 ±50ppm
HSM536 ±100ppm

TEMPERATURE RANGE: 0 to 70°C

CERAMIC SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS COMPLIANT / Pb FREE

ORDERING INFORMATION

HSM536 - 50 MHz

CLOCK SERIES — CENTER FREQUENCY

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Specifications subject to change without notice.

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CRYSTAL CONTROLLED OSCILLATORS

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

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.

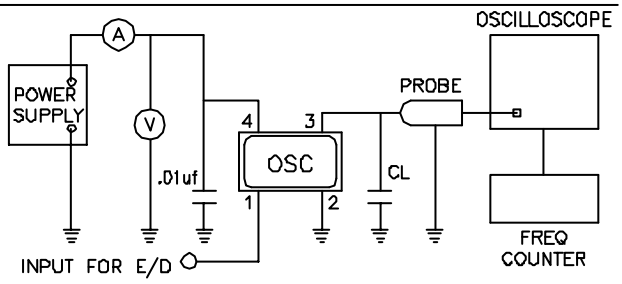
VIBRATION:
The specimen shall meet electrical characteristics after tested by the following conditions:
10−55Hz 1.5mm Amplitude, 55−2000Hz 20G's,
2 hours for each plane.

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.

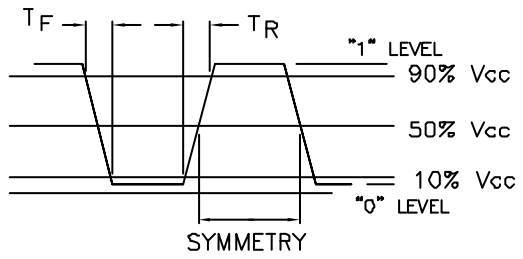
SOLDERABILITY: (EIAJ−RCX−0102/1D1 Condition 1a)
1. Flux: MIL−F−14256 (WW Rosin=25%, Isopropyl alcohol=75%)
2. Solder: QQ−S−571 (Sn=63%, Pb=37%)
3. Solder bath temperature: 235°C ±5°C.
4. Depth of immersion: Up to electrical terminal.
5. Immersing time: Within 2 sec ±0.5 sec into solder bath.

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

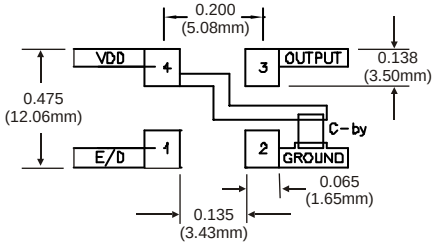
TEST CIRCUIT



OUTPUT WAVEFORM

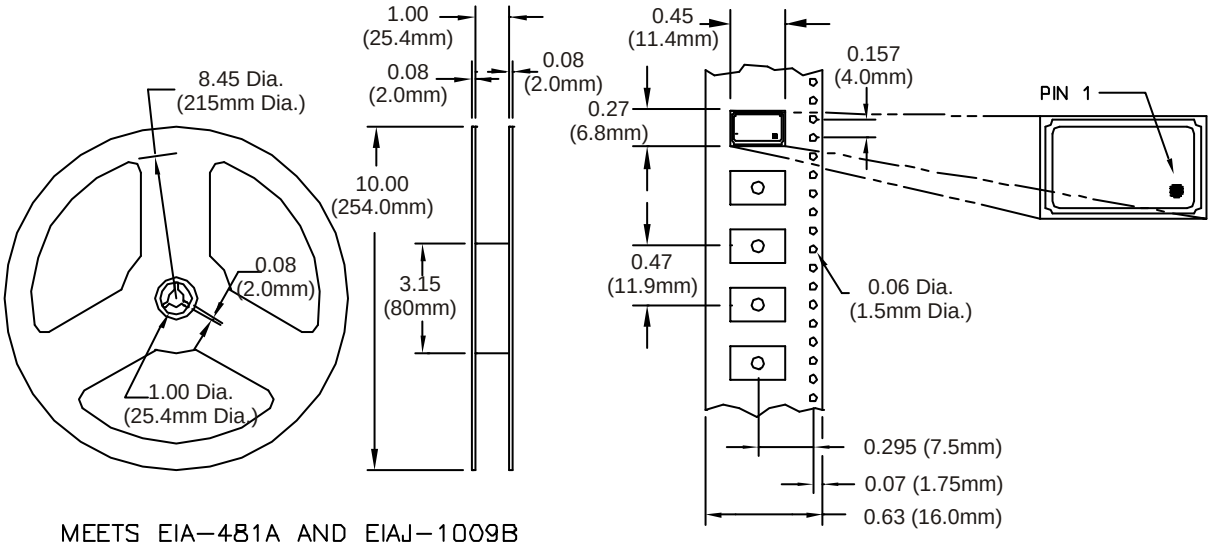


SUGGESTED PAD LAYOUT



Bypass capacitor, C−by, should be ceramic capacitor ≥ .01uf.

TAPING AND REEL DIMENSIONS



MEETS EIA−481A AND EIAJ−1009B
1000 PCS / REEL

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