

# CRYSTAL CONTROLLED OSCILLATORS

## 3.3V SURFACE MOUNT 7.5x5mm CRYSTAL CLOCK OSCILLATOR



HSM343

### 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

Frequency Range	(Fo)	1.544	-	125	MHz	
Frequency Tolerance:		-20	-	20	ppm	1

### OPERATING SPECIFICATIONS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Operating Temperature Range		0	-	85	°C	
Supply Voltage	(Vdd)	3.135	3.3	3.465	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 125 MHz	(Icc)	-	-	40	mA

### INPUT CHARACTERISTICS

TABLE 4.0

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

### LVC MOS OUTPUT CHARACTERISTICS

TABLE 5.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage	(High)	(Voh)	2.91	-	Vdc	
	(Low)	(Vol)	-	0.33	Vdc	
Current	(High)	(loh)	-2	-	mA	
	(Low)	(loh)	-	2	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	4	6	nS	
Start-Up Time		-	-	10	mS	
Jitter		-	-	5	pS RMS	

### PACKAGE CHARACTERISTICS

TABLE 6.0

Package	Hermetically sealed ceramic package and metal cover
---------	---

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

Pad	Connection
1	Enable/Disable
2	Ground
3	Output
4	Vcc

Enable / Disable Function (Pad 1)	Output
High or Open	Enable
Low	Disable (High Impedance)

### DESCRIPTION

The Connor-Winfield model HSM343 is a Surface Mount, Fixed Frequency Crystal Oscillator (XO) designed for use in all applications requiring a precision clock. The surface mount package is designed for high-density mounting and is optimum for mass production.

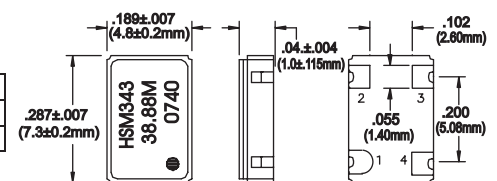
### FEATURES

- 1.544 to 125 MHz
- 3.3V OPERATION
- TRI-STATE ENABLE / DISABLE FUNCTION
- POWER SAVING FUNCTION: 10uA WHEN DISABLED
- OVERALL FREQUENCY TOLERANCE: ±20ppm
- TEMPERATURE RANGE: 0 to 85°C
- CERAMIC SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING
- RoHS COMPLIANT / LEAD FREE

### ORDERING INFORMATION

HSM343 - 038.88M

CLOCK SERIES CENTER FREQUENCY



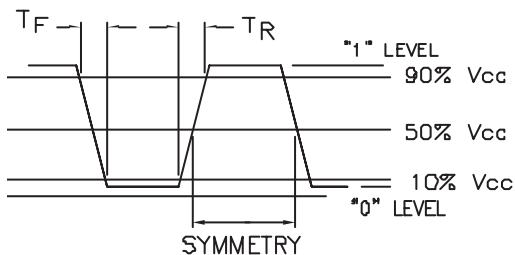
Dimensional ±.02" (±0.5mm)  
Tolerance: ±.008" (±0.2mm)

Specifications subject to change without notice.

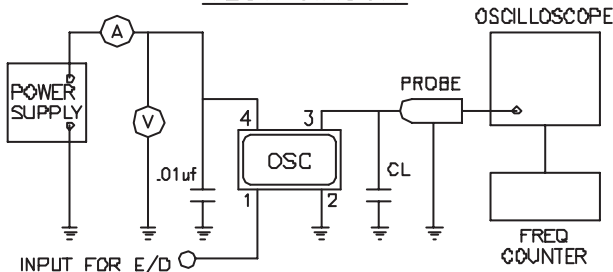
PRODUCT DATA SHEET

CRYSTAL CONTROLLED OSCILLATORS

OUTPUT WAVEFORM



TEST CIRCUIT



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 Fluorinert (FC-43) at 125 °C ± 5 °C, for 5 minutes.

SOLVENT RESISTANCE:

Marking will withstand immersion in Isopropyl Alcohol or Trichloroethylene.

SOLDERING

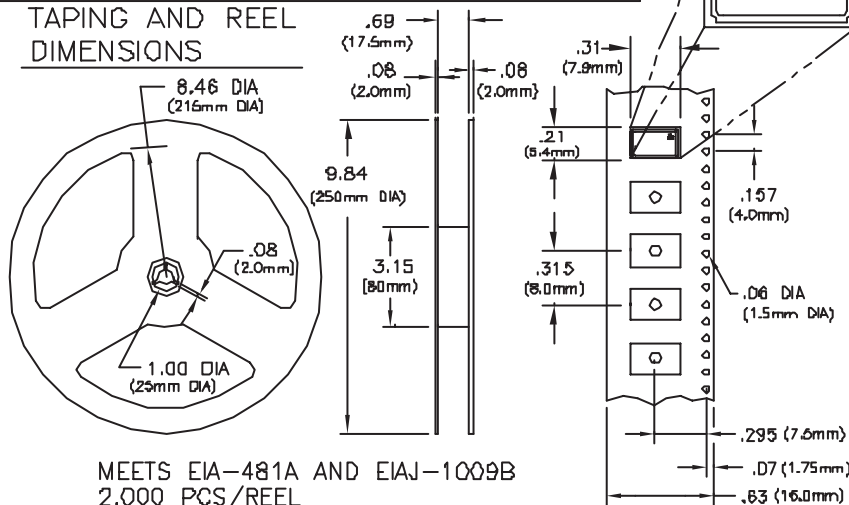
GENERAL CONDITIONS:

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

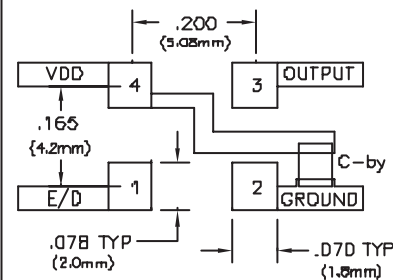
TAPING AND REEL  
DIMENSIONS



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

PIN 1

SUGGESTED PAD LAYOUT



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

Dimensional ±.02" (±0.5mm)  
Tolerance: ±.008" (±0.2mm)