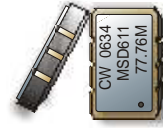


# CRYSTAL CONTROLLED OSCILLATORS

## LEADLESS SURFACE MOUNT HCMOS CLOCK OSCILLATOR



MSD611

**ABSOLUTE MAXIMUM RATINGS**

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	

**OPERATING SPECIFICATIONS**

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	1.8	-	80	MHz	
Total Frequency Tolerance		-25	-	25	ppm	1
Operating Temperature Range		-40	-	85	°C	
Supply Voltage	(Vcc)	4.50	5.00	5.50	Vdc	
Supply Current	(Icc)	-	-	50	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	
SSB Phase Noise at 10Hz offset		-	-60	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-90	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-125	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-135	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-140	-	dBc/Hz	

**INPUT CHARACTERISTICS**

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Tri-state Enable Voltage	(Vih)	≥70%Vcc	-	-	Vdc	2
Tri-state Disable Voltage	(Vil)	-	-	≤30%Vcc	Vdc	2

**HCMOS OUTPUT  
CHARACTERISTICS**

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	pF	
Voltage (High)	(Voh)	≥ 0.9(Vcc)	-	-	Vdc	
(Low)	(Vol)	-	-	≤ 0.1(Vcc)	Vdc	
Current (High)	(Ioh)	-16	-	-	mA	
(Low)	(Iol)	-	-	16	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	1.5	3	nS	

**PACKAGE CHARACTERISTICS**

TABLE 5.0

Package	Hermetically sealed, leadless ceramic package.
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Note:

- 1) Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 20 years aging.
- 2) Oscillator output is enabled with no connection on pad 1

### DESCRIPTION

The Connor-Winfield MSD611 is a hermetically sealed surface mount 5.0V Crystal Controlled Oscillator (XO) HCMOS/TTL Compatible. The MSD611 is designed for applications requiring low jitter and tight frequency stability.

### FEATURES

5.0V OPERATION

LOW JITTER <1ps RMS

FREQUENCY TOLERANCE: ±25ppm

TEMPERATURE RANGE: -40 to 85°C

TRI-STATE ENABLE / DISABLE FUNCTION

TAPE AND REEL PACKAGING

RoHS COMPLIANT / LEAD FREE

### ORDERING INFORMATION

MSD611 - 77.76 MHz

CLOCK  
SERIES

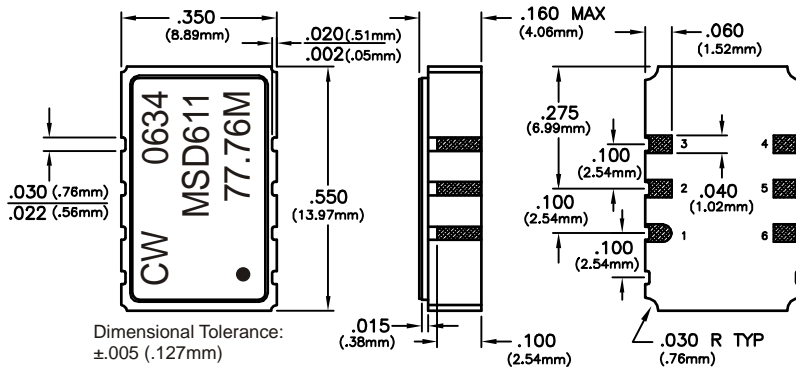
CENTER  
FREQUENCY

Specifications subject to change without notice.

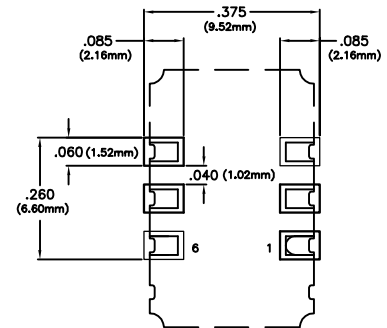
PRODUCT DATA SHEET

CRYSTAL CONTROLLED OSCILLATORS

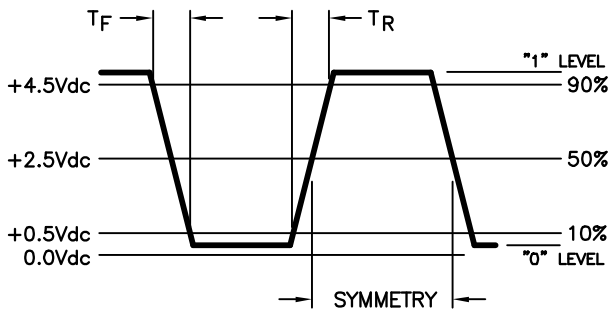
Package Outline



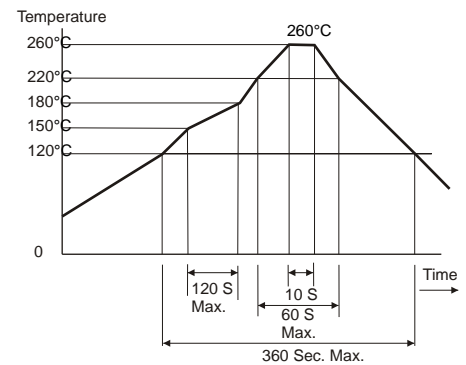
Suggested Pad Layout



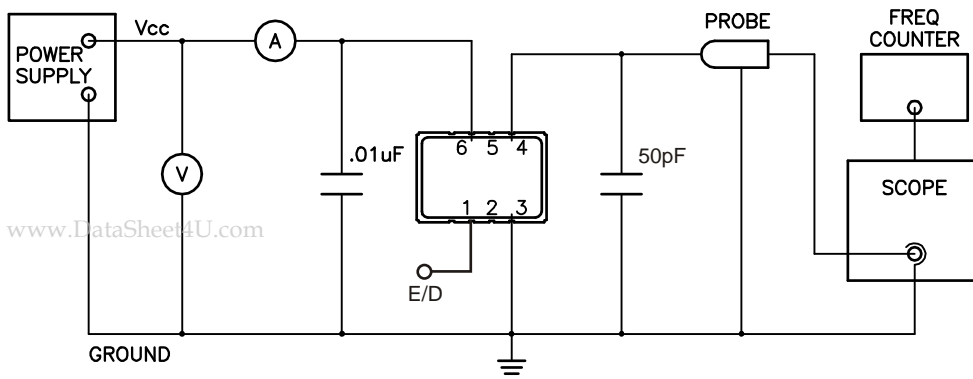
Output Waveform



Solder Profile



Test Circuit



Pin Connections

Pin	Connection
1	Enable / Disable
2	N/C
3	Ground
4	Output
5	N/C
6	Vcc