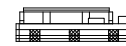
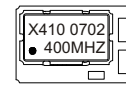


CRYSTAL CONTROLLED OSCILLATORS

2.5V SURFACE MOUNT 5.0 x 7.5mm LVPECL CLOCK OSCILLATOR



X410

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	7.0	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	250	-	400	MHz	
Frequency Calibration @ 25°C		-20		20	ppm	
Total Frequency Tolerance		-50		50	ppm	1
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	2.375	2.500	2.625	Vdc	
Supply Current	(Icc)	-	60	90	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	pS RMS	
Jitter (BW=12kHz to 20MHz)		-	-	1	pS RMS	
SSB Phase Noise at 10Hz offset		-	-45	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-85	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-115	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-135	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-140	-	dBc/Hz	

LVPECL OUTPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	Ohms	2
Voltage (High)	(Voh)	1.475	-	-	Vdc	
Voltage (Low)	(Vol)	-	-	0.880	Vdc	
Duty Cycle		45	50	55	%	3
Rise / Fall Time 20% to 80%		-	0.5	1	nS	

PACKAGE CHARACTERISTICS

TABLE 4.0

Package	Hermetically sealed ceramic package and metal cover.
PROCESS RECOMMENDATIONS	
Soldering Process	See Solder Profile page 2.

Notes

- Includes initial tolerance, deviation over temperature, supply and load variations, shock, vibration and 20 years aging.
- Output must be terminated into 50 ohms to Vcc - 2V or Thevenin equivalent.
- Duty Cycle measured at 50% of output swing.

DESCRIPTION

The Connor Winfield X410 is a fixed frequency, surface mount Crystal Controlled Oscillator (XO) designed for applications requiring low jitter and a +/-50ppm overall stability. Operating at 2.5V supply voltage, the X410 provides LVPECL Differential Outputs.

FEATURES

2.5V OPERATION

DIFFERENTIAL LVPECL OUTPUTS

LOW JITTER <1pS RMS

FREQUENCY CALIBRATION @ 25°C: ±20ppm

TOTAL FREQUENCY TOLERANCE: ±50ppm

TEMPERATURE RANGE: 0 to 70°C

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

X410 - 400.0M

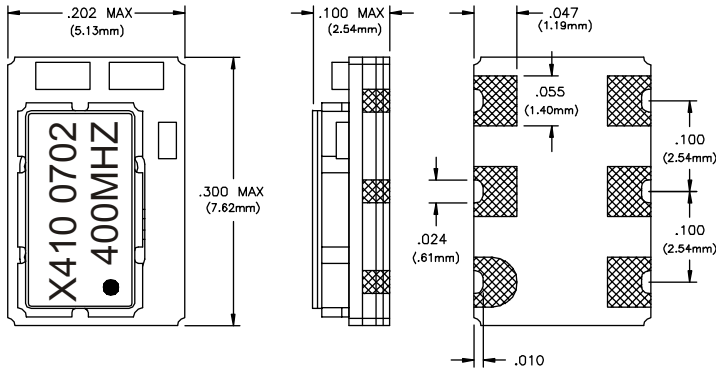
LVPECL
CLOCK
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

Package Outline and Dimensions



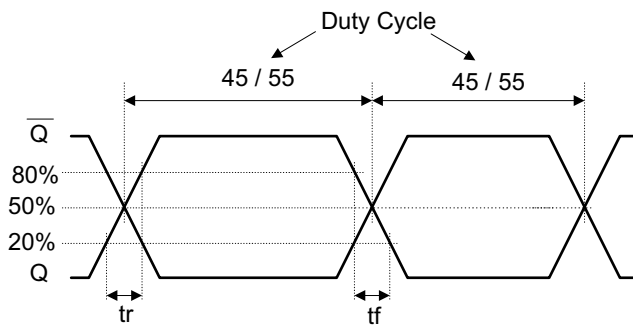
Pin Connections

TABLE 5.0

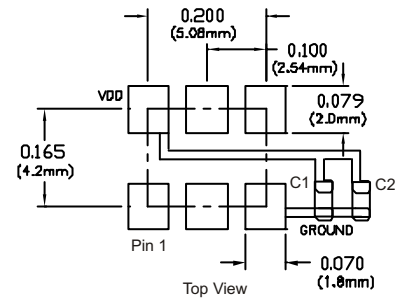
Pin	Connection
1	N/C
2	N/C
3	Ground
4	Q Output
5	Q̄ Output
6	Vcc

Dimensional Tolerance:
±.005 (.127mm)

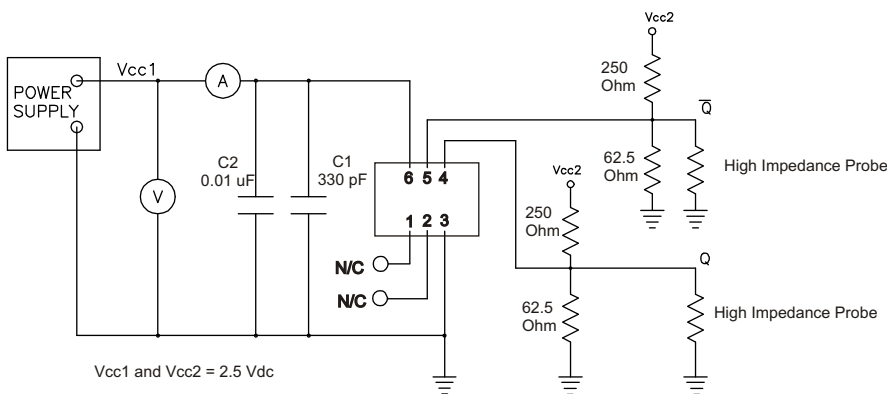
Output Waveform



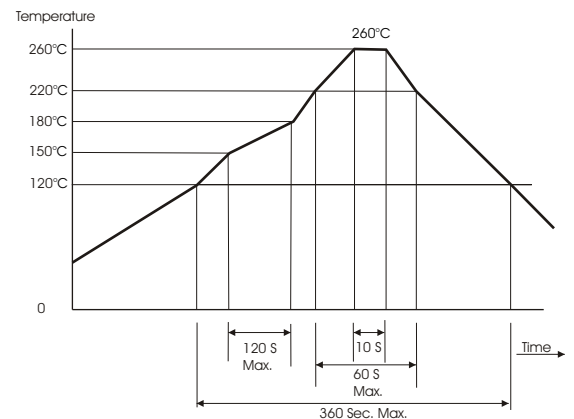
Suggested Pad Layout



Test Circuit



Solder Profile



Specifications subject to change without notice.