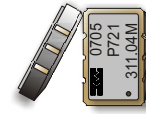


CRYSTAL CONTROLLED OSCILLATORS

5x7.0mm SURFACE MOUNT 3.3V LVPECL HIGH FREQUENCY OSCILLATOR



P721

DESCRIPTION

The Connor Winfield P721 is a Fixed Frequency, Surface Mount Crystal Controlled Oscillator (XO) designed for applications requiring low jitter and a ± 50 ppm, -10 to 70°C overall stability, LVPECL Differential Outputs and Tri-state Enable / Disable function. The P721 is designed using a 2X or 4X PLL multiplication to achieve the high frequency output.

FEATURES

- 3.3V OPERATION
- LVPECL DIFFERENTIAL OUTPUTS
- ENABLE / DISABLE FUNCTION
- LOW JITTER <2ps RMS
- OVERALL FREQUENCY TOLERANCE: ± 50 ppm
- TEMPERATURE RANGE: -10 to 70°C
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING
- RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

P721 - 311.04MHz

CLOCK
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	4.6	Vdc	
Input Voltage	(Vcc)	-0.5	-	Vcc+0.5	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	250	-	800	MHz	
Total Frequency Tolerance		-50	-	50	ppm	1
Operating Temperature Range		-10	-	70	°C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)	-	60	100	mA	
Jitter (BW=10Hz to 20MHz)		-	-	8	ps RMS	
Jitter (BW=12kHz to 20MHz)		-	-	2	ps RMS	

INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Disable Input Voltage (Low)	(Vil)	-	-	1.68	Vdc	2
Enable Input Voltage (High)	(Vih)	2.275	-	-	Vdc	2

PECL OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	Ohms	3
Voltage (High)	(Voh)	2.275	-	-	Vdc	
(Low)	(Vol)	-	-	1.68	Vdc	
Duty Cycle		45	50	55	%	4
Rise / Fall Time 20% to 80%		-	-	0.5	ns	

PACKAGE CHARACTERISTICS

TABLE 5.0

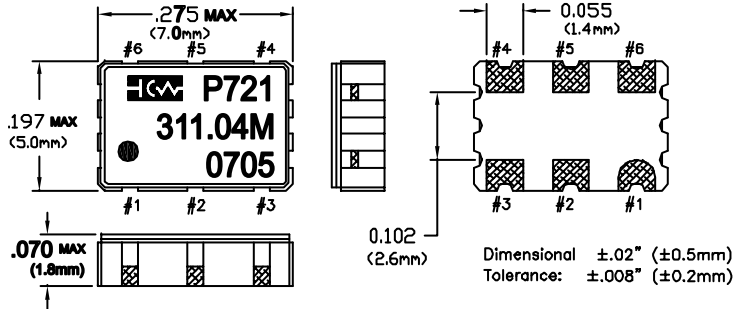
Package	Hermetically sealed ceramic package and metal cover.
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Notes

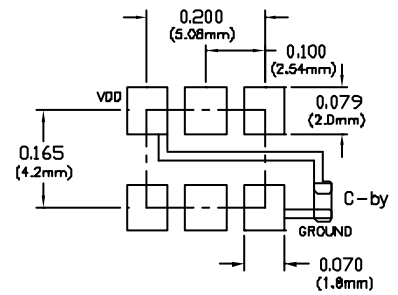
- 1) Includes calibration @ 25°C, frequency stability vs. temperature, supply and load variations, shock, vibration and 20 years aging.
- 2) When the oscillator is disabled, the outputs are at High Impedance. Output is enabled with no connection on pad 1.
- 3) Output must be terminated into 50 ohms to Vcc - 2V or Thevenin equivalent.
- 4) Duty Cycle measured at 50% of output swing.

CRYSTAL CONTROLLED OSCILLATORS

Package Outline



Suggested Pad Layout



Bypass capacitor, C-by, should be ceramic capacitor $\geq .01\mu\text{f}$.

Pin Connections

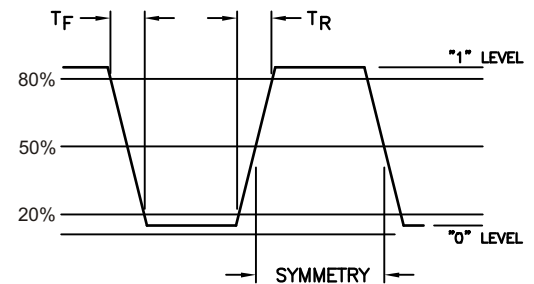
TABLE 6.0

Pin	Connection
1	Enable / Disable
2	N/C
3	Ground
4	Q Output
5	\bar{Q} Output
6	Vcc

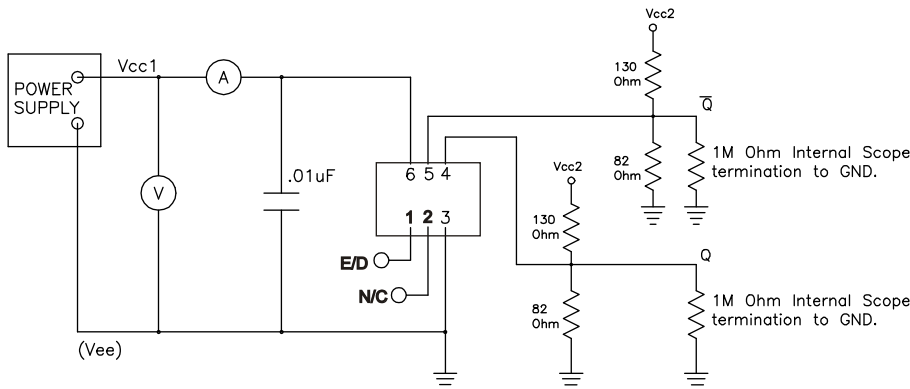
TABLE 7.0

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

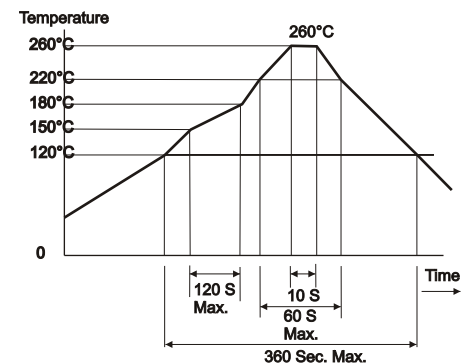
Output Waveform



Test Circuit



Solder Profile



Specifications subject to change without notice.