

5.0x7.0mm Surface Mount LVCMOS Clock Oscillator Series



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Description

The Connor Winfield Xxxx - Series is a 5.0x7.0mm Surface Mount, LVCMOS, Fixed Frequency Crystal Controlled Oscillator (XO) designed for applications requiring tight frequency stability, wide temperature range and low jitter. Operating at 2.5V or 3.3V supply voltage, the Xxxx - Series provides an LVCMOS Output with enable / disable function. The surface mount package is designed for high-density mounting and is optimum for mass production.



Features:

Model Xxxx - Series

5.0 x7.0mm Surface Mount Package

2.5V or 3.3V Operation

LVCMOS Output Logic

Frequency Stabilities Available:

X14x / X24x / X34x / X44x: +/-20ppm

X11x / X21x / X31x / X41x: +/-25ppm

X12x / X22x / X32x / X42x: +/-50ppm

X13x / X23x / X33x / X43x: +/-100ppm

Temperature Ranges Available:

X1xx Series: 0 to 70°C

X2xx Series: -40 to 85°C

X3xx Series: 0 to 85°C

X4xx Series: -20 to 70°C

Low Jitter <1ps RMS

Tri-State Enable/Disable

Tape and Reel Packaging

RoHS Compliant / Lead Free

Model Specifications

ABSOLUTE MAXIMUM RATINGS

TABLE 1

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	5.0	Vdc	

OPERATING SPECIFICATIONS

TABLE 2

PARAMETER	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)				
Models Xx4x, Xx1x Series	20	-	200	MHz	1
Models Xx2x, Xx3x Series	20	-	225	MHz	
Total Frequency Tolerance	(See Table 9 for full part number)				
Model Xx4x (See Table 9)	-20	-	20	ppm	2
Model Xx1x (See Table 9)	-25	-	25	ppm	2
Model Xx2x (See Table 9)	-50	-	50	ppm	2
Model Xx3x (See Table 9)	-100	-	100	ppm	2
Operating Temperature Range					
Model X1xx (See Table 9)	0	-	70	°C	
Model X2xx (See Table 9)	-40	-	85	°C	
Model X3xx (See Table 9)	0	-	85	°C	
Model X4xx (See Table 9)	-20	-	70	°C	
Supply Voltage	(Vcc)				
Model Xxx2 (See Table 9)	2.375	2.500	2.625	Vdc	
Model Xxx3 (See Table 9)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)				
40 to 79.999 MHz	-	-	15	mA	
80 to 89.999 MHz	-	-	26	mA	
90 to 124.999 MHz	-	-	36	mA	
125 to 164.999 MHz	-	-	46	mA	
165 to 225 MHz	-	-	61	mA	

INPUT CHARACTERISTICS

TABLE 3

PARAMETER	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Enable Voltage	(High) (Vih)	0.7Vcc	-	Vdc	3
Disable Voltage	(Low) (Vil)	-	0.3Vcc	Vdc	3
Enable Time	-	-	2	ms	
Disable Time	-	-	200	ns	
Output Disable Current (Standby Current)	(Icc)	-	10	uA	

LVCMOS OUTPUT CHARACTERISTICS

TABLE 4

PARAMETER	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD	-	-	15	pF	
Voltage	(High) (Voh)	Vcc-0.4	-	Vdc	
	(Low) (Vol)	-	0.4	Vdc	
Current	(High) (Ioh)	-8	-	mA	
	(Low) (Iol)	-	8	mA	
Duty Cycle at 50% of Vcc	45	50	55	%	
Rise / Fall Time 10% to 90%	-	1	2	ns	
Start-Up Time	-	-	2	ms	
Period Jitter	-	3	5	ps RMS	
Phase Jitter (BW=12kHz to 20MHz)	-	0.5	1	ps RMS	
Jitter: Peak to Peak (BW=10Hz to 20MHz)	-	-	25	ps pk tp pk	
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	-	-140	-	dBc/Hz	
SSB Phase Noise at 100KHz offset	-	-145	-	dBc/Hz	



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