

2.5V/3.3V LVPECL XO

JX502



5.0 x 3.2mm Ceramic SMD

**Product Features**

- Very low phase jitter - 0.8ps RMS typical
- Thicker crystal for improved reliability
- Low supply current - 60mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant
- Fast lead time

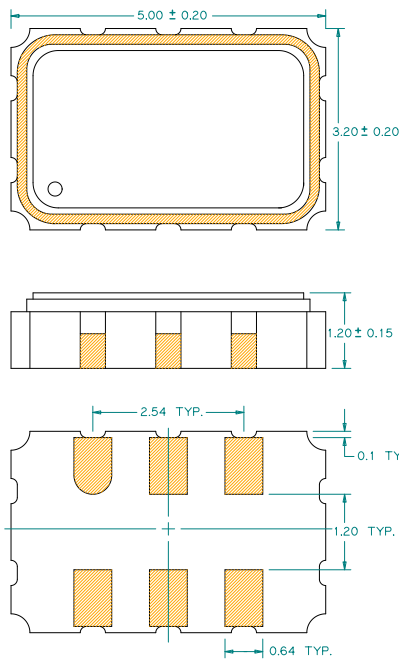
**Product Description**

The JX502 XO series is a high performance LVPECL crystal oscillator family with very low jitter performance. It supports various options including wider frequency range, 2.5V/3.3V voltage, and various stabilities. It is designed to meet the clock source specifications for communication systems, and other high performance equipment.

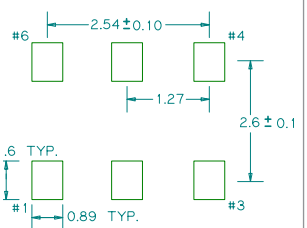
**Applications**

- Networking systems
- Servers and storage systems
- Profession video equipments
- Test and measurement
- FPGA/ASIC clock generation

**Package:** (Scale: none, Dimensions are in mm)



Recommended Land Pattern:



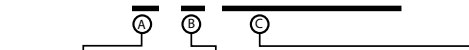
**Pin Functions:**

Pin	Function
1	OE Function
2	N/C
3	Ground
4	Q
5	$\bar{Q}$
6	Vcc

\*Extended high frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route RF traces beneath the package.

**Part Ordering Information:**

JX 50 2 V I FFFF.FFFFFFF



Voltage:  
1=+3.3V  
2=+2.5V

Stability and Temp Range:

Stability	Temp Range
A = +/-20 ppm	-20/+70°C
B = +/-25 ppm	-20/+70°C
C = +/-50 ppm	-20/+70°C
D = +/-25 ppm	-40/+85°C
E = +/-50 ppm	-40/+85°C

Frequency:  
FFFFFFF  
MHz, "4 digits/decimal/6 digits" format



**Ultra Low Jitter PLL Crystal Oscillator 5.0 x 3.2mm**

**Electrical Performance**

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency	10		400	MHz	
Supply Voltage	3.135	3.3	3.465	V	See ordering options
	2.375	2.5	2.625		
Supply Current, Output Enabled			60	mA	
Supply Current, Output Disabled only			20	mA	
Frequency Stability			±50	ppm	See ordering options
Operating Temperature Range	-40		+85	°C	See ordering options
Output Logic 0, V <sub>OL</sub>			V <sub>CC</sub> -1.55	V	
Output Logic 1, V <sub>OH</sub>	V <sub>CC</sub> -1.2			V	
Output Load	50Ω to V <sub>CC</sub> -2V output termination				
Duty Cycle	45		55	%	Measured 50% V <sub>CC</sub>
Rise and Fall Time			350	ps	Measured 20/80% of waveform
Jitter, Phase RMS (1-σ)		0.8		ps	12kHz to 20 MHz frequency band
Jitter, pk-pk		20	40	ps	100,000 random periods

**Notes:**

1. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (1 year at 25°C average effective ambient temperature), shock and vibration.
2. For specifications other than those listed, please contact sales.

**Output Enable / Disable Function**

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin 1), Output Enable	0.7 V <sub>CC</sub>			V	or open
Input Voltage (pin 1), Output Disable (low power standby)			0.3 V <sub>CC</sub>	V	Output is Hi-Z
Internal Pullup Resistance		51		kΩ	
Output Disable Delay			200	ns	
Output Enable Delay			200	ns	
Start up Time			10	ms	

**Absolute Maximum Ratings**

Parameter	Min.	Typ.	Max.	Units	Notes
Storage Temperature	-55		+125	°C	

**For the latest product information visit:** <http://www.pericom.com/products/crystals-and-crystal-oscillators/hiflex-xo/?part=JX502>

**For test circuit go to:** [http://www.pericom.com/pdf/sre/tc\\_pecl.pdf](http://www.pericom.com/pdf/sre/tc_pecl.pdf)

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