

A product Line of Diodes Incorporated

**Ultra Low Jitter LVPECL Crystal Oscillator** 7.0 x 5.0mm

## 2.5/3.3V LVPECL XO



Recommended Land Pattern:

#6

20 TYP

#11

1.8

beneath the package.

**Pin Functions:** 

Pin

1

2

3

4

5

6

5.08

TYP

\*Extended high frequency power

decoupling is recommended (see test circuit for minimum

recommendation). To ensure optimal

performance, do not route RF traces

Function

**OE** Function

N/C

Ground

Q

 $\overline{0}$ 

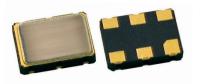
V<sub>CC</sub>

-2.54-

#4

42

#3



7.0 x 5.0mm Ceramic SMD

#### **Product Features**

- Ultra low phase jitter for 40G/100G systems
  - 0.1ps RMS max. (12kHz to 20MHz), Category 1
  - 0.2ps RMS max. (12kHz to 20MHz), Category 1
  - 0.3ps RMS max. (12kHz to 20MHz), Category 2
- Industrial Temperature Range
- Pb-free & RoHS compliant

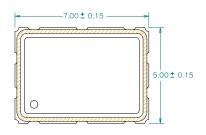
#### **Product Description**

The UX72/UX702 XO series is a high performance LVPECL crystal oscillator family with ultra low jitter performance. It supports various options including wider frequency range, 2.5/3.3 voltage, various stabilities, and different package sizes. It is designed to meet the clock source specifications for communication systems, and other high performance equipment.

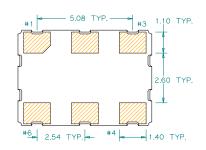
#### **Applications**

- Networking Systems
- Servers and Storage Systems
- Profession Video Equipments
- Test and Measurement
- FPGA/ASIC Clock Generation

#### Package: (Scale: none; dimensions are in mm)



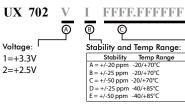




#### **Part Ordering Information Category 1:**



#### **Part Ordering Information Category 2:**



Frequency: FFFF.FFFFFF MHz, "4 digits/decimal/6 digits" format

sales for details.

\*Not for all frequencies in the

frequency range. Please contact

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### Ultra Low Jitter LVPECL Crystal Oscillator 7.0 x 5.0mm

#### **Electrical Performance**

Parameter	Min.	Тур.	Max.	Units	Notes		
Output Frequency	50		320	MHz			
Supply Voltage	3.135	3.3	3.465	¥.7	See ordering options		
	2.375	2.5	2.625	V			
Supply Current, Output Enabled			70	mA			
Supply Current, Output Disabled			10	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> -1.620	V			
Output Logic 1, V <sub>OH</sub>	V <sub>DD</sub> -1.025			V			
Output Load	$50\Omega$ to V <sub>CC</sub> -2V output termination						
Duty Cycle	45		55	%	Measured 50% V <sub>CC</sub>		
Rise and Fall Time			850	ps	Measured 20/80% of waveform		
Jitter, Phase RMS (1-0), Category 1			0.1	ps	12kHz to 20 MHz frequency band, See		
			0.2	ps	ordering information category 1		
Jitter, Phase RMS (1-o), Category 2			0.3	ps	12kHz to 20 MHz frequency band, See ordering information category 2		
Jitter, Accumulated RMS (1-o)		7		ps	20,000 Consecutive Periods		
Jitter, pk-pk		25	40	ps	100,000 random periods		

Notes:

 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 othere than those listed, please contact sales.

#### **Output Enable / Disable Function**

Parameter	Min.	Тур.	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		50		kΩ	
Output Disable Delay			200	ns	
Output Enable Delay			2	ms	
Start up Time			3	ms	

#### **Absolute Maximum Ratings**

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

For the latest product information visit: https://www.diodes.com/products/connectivity-and-timing/crystal-and-crystal-oscillator/

For test circuit go to: https://www.diodes.com/assets/sre/tc\_pecl.pdf

For soldering reflow profile and reliability test ratings go to: <u>https://www.diodes.com/assets/sre/reflow.pdf</u>

For tape and reel information go to: https://www.diodes.com/assets/sre/tr 7050 xo.pdf