The Industry’s Smallest Crystal Oscillator LVPECL with Ultra-Low Jitter

The UX22/UX252 XO series is the industry’s smallest crystal oscillator family optimized to save board space and provide ultra-low jitter performance at 0.1ps max.

The family is ideal for applications such as 40G/100G/400G optical modules where small size and ultra-low jitter are essential. It is also designed to meet the low-jitter clock source specifications for communication systems and other high-performance equipment where board space is tight.

The family supports a wide frequency range from 100MHz to 212.5MHz and options include 2.5/3.3 V_{DD}, commercial and industrial temperature ranges, and various stabilities.

**DIODES Advantage**

- **The Industry’s Smallest Crystal Oscillator – Only 2.5mm x 2.0mm**
  Optimized for saving board space
- **Ultra-Low Jitter 0.1ps RMS Max. (12kHz to 20MHz)**
  Supports 40G/100G systems and provides margin for high-performance clocking requirements
- **Wider Temperature Ranges (-20ºC ~ +70ºC, -40ºC ~ +85ºC)**
  Supports both commercial and industry operating temperature systems
- **2.5V & 3.3V Power Supply:**
  Supports common power rails

**Applications**

- Optical Module for 40G/100G/400G
- Networking Systems
- Servers & Storage Systems
- Profession Video Equipment
UX Measurement For Jitter Performance:

RMS Jitter 74.7 fsec. typical.

Part Ordering Information Category 1*

UX22 XXX YYY

A  B  C

YYY = Specification Code
XXX = Frequency Code
Product Family

Max. RMS jitter: 0.1ps, or 0.2ps, 12kHz to 20MHz
Refer datasheet for details

Part Ordering Information Category 2*

UX 252 V I FFFF.FFFFFFF

A  B  C

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

Stability and Temp Range:

<table>
<thead>
<tr>
<th>Stability</th>
<th>Temp Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>B = ±25 ppm</td>
<td>-20 to +70°C</td>
</tr>
<tr>
<td>C = ±50 ppm</td>
<td>-20 to +70°C</td>
</tr>
<tr>
<td>D = ±25 ppm</td>
<td>-40 to +85°C</td>
</tr>
<tr>
<td>E = ±50 ppm</td>
<td>-40 to +85°C</td>
</tr>
</tbody>
</table>

Frequency:

FFF.FFFFFFF MHz, “4 digits/decimal/6 digits” format

Max. RMS jitter: 0.3ps, 12kHz to 20MHz
Refer datasheet for details

* Please contact us for custom requirements for your specific application needs