

**3.3V PECL Ultra Low Jitter 156.25MHz XO**

**UX5040GE01**



5.0 x 3.2mm Ceramic SMD

**ASSP XO™ for 40Gb Ethernet**



**Product Features**

- 3.3V, 156.25MHz
- Ultra low phase jitter (RMS)- 0.2ps max. (10kHz ~ 1MHz)
- Pb-free & RoHS compliant
- Industrial temperature range

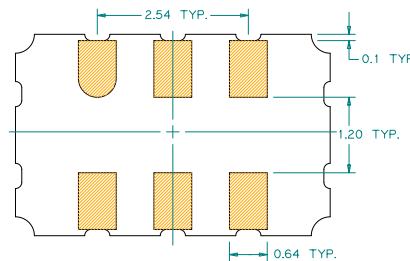
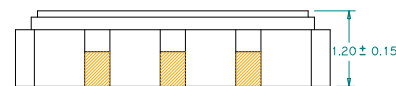
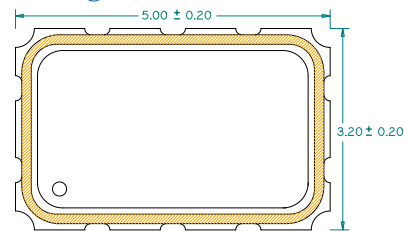
**Product Description**

The UX5040GE01 is a crystal oscillator that achieves superb low jitter for 40GbE applications. The output clock signal, generated internally with a patented oscillator design, is compatible with LVPECL logic levels. The device, available on tape and reel, is contained in a 5.0 x 3.2mm surface-mount ceramic package.

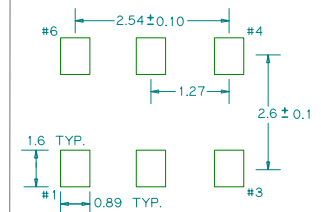
**Applications**

- 40 Gigabit Ethernet Switches / Routers
- 40 Gigabit Ethernet Data Center

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



**Recommended Land Pattern:**



**Pin Functions:**

Pin	Function
1	OE
2	NC
3	V <sub>EE</sub>
4	Q Output
5	$\bar{Q}$ Output
6	V <sub>CC</sub>

\*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:**

**UX5040GE01**



### Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency		156.25		MHz	
Supply Voltage	2.97	3.30	3.63	V	
Supply Current, Output Enabled		60	75	mA	
Supply Current, Output Disabled			25	mA	
Frequency Stability			±50	ppm	See Note 1 below
Operating Temperature Range	-40		+85	°C	Industrial
Output Logic 0, VOL			V <sub>CC</sub> - 1.620	V	0 to +85°C
			V <sub>CC</sub> - 1.555	V	-40 to 0°C
Output Logic 1, VOH	V <sub>CC</sub> - 1.025			V	0 to +85°C
	V <sub>CC</sub> - 1.085			V	-40 to +0°C
Output Load	50Ω to V <sub>CC</sub> - 2V				output requires termination
Duty Cycle	45		55	%	Measured 50% V <sub>DD</sub>
Rise and Fall Time		0.5	0.85	ns	Measured 20/80% of waveform
Jitter, Phase RMS (1-σ)		0.2	0.3	ps	12 kHz to 20 MHz frequency band
		0.1	0.2		10 kHz to 1 MHz frequency band
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 (5 year at 40°C average effective ambient temperature), shock and vibration.
- 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	2.2			V	or open
Input Voltage (pin 1), Output Disable (low power standby)			0.8	V	Outputs disabled to Hi-Z
Internal Pullup Resistance	50			kΩ	
Output Disable Delay			200	ns	
Output Enable Delay			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/assp-xo/?part=UX5040GE01>

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

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

For typical phase noise go to: [http://www.pericom.com/assets/sre/pn\\_UX5040GE01.pdf](http://www.pericom.com/assets/sre/pn_UX5040GE01.pdf)

For tape and reel information go to: [http://www.pericom.com/assets/sre/tr\\_5032\\_xo.pdf](http://www.pericom.com/assets/sre/tr_5032_xo.pdf)