

3.3V CMOS Low-Jitter 156.25 MHz 10GbE XO

SX10GE156



7.0 x 5.0mm Ceramic SMD

ASSP XO™ for Networking



Product Features

- Very low phase jitter - 0.5ps RMS
- Thicker crystal for improved reliability
- Low output current - 20mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant

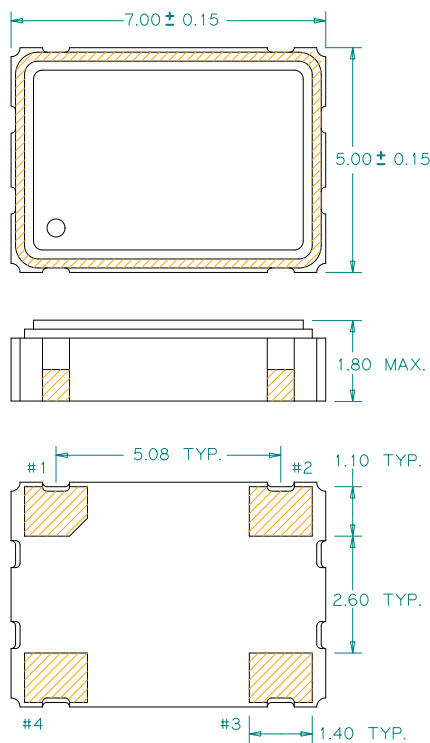
Product Description

This is an enhanced high-frequency 3.3V, 156.25MHz crystal clock oscillator with superb jitter and low operating current for 10 Gigabit Ethernet applications. The output clock signal, generated internally with a patented oscillator design, is compatible with LVCMOS logic levels.

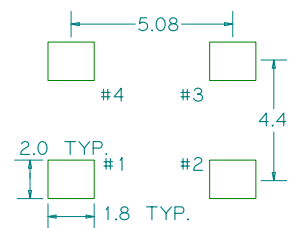
Applications

- 10 Gigabit Ethernet Network Interface Card (NIC)
- 10 Gigabit Ethernet Switch/Router
- 10 Gigabit Ethernet PHY Module
- Serial Attached iSCSI

Package:



Recommended Land Pattern:



Pin Functions:

Pin	Function
1	OE Function
2	Ground
3	Clock Output
4	V _{DD}

*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:

SX10GE156

Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency		156.25		MHz	
Supply Voltage	2.97	3.3	3.63	V	
Supply Current, Output Enabled		13	20	mA	
Supply Current, Output Disabled			10	mA	Output Hi-Z
Frequency Stability			±50	ppm	See Note 1 below
Operating Temperature Range	-40		+85	°C	Industrial
Output Logic 0, V _{OL}			10% V _{DD}	V	
Output Logic 1, V _{OH}	90% V _{DD}			V	
Output Load			15	pF	
Duty Cycle	40		60	%	Measured 50% V _{DD}
Rise and Fall Time			2	ns	Measured 20/80% of waveform
Jitter, Phase RMS (1-σ)		0.25	0.5	ps	12kHz to 20 MHz frequency band
Jitter, pk-pk		30	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.
- 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	Output is Hi-Z
Internal Pullup Resistance	50			kΩ	
Output Disable Delay			100	ns	
Output Enable Delay			1	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/timing/oscillators/SX10GE156/>

For test circuit go to: http://www.pericom.com/pdf/sre/tc_pecl.pdf

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

For typical phase noise go to: http://www.pericom.com/pdf/sre/pn_SX10GE156.pdf

For tape and reel information go to: http://www.pericom.com/pdf/sre/tr_7050_xo.pdf