

**3.3V CMOS Low-Jitter 125MHz EPON XO**

**FNEPON125**



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.
- Low power stand by mode
- Industrial Temperature Range
- Pb-free & RoHS compliant

**Product Description**

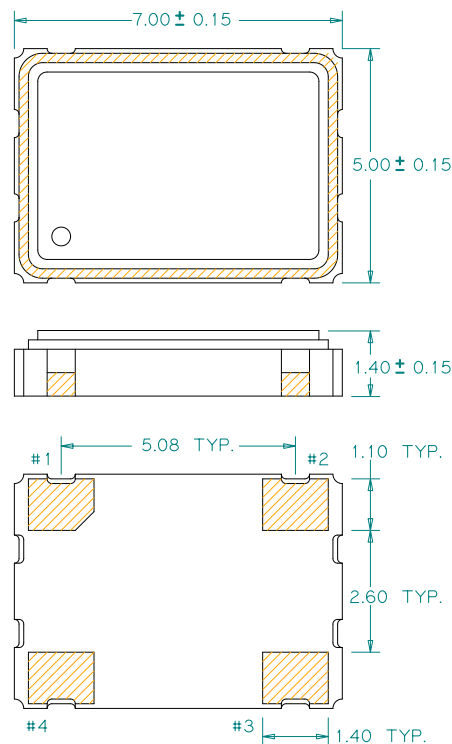
This is an enhanced high-frequency 3.3V, 125MHz crystal clock oscillator with superb jitter and low operating current for Ethernet Passive Optical Network (EPON) applications.

The output clock signal, generated internally with a patented oscillator design, is compatible with LVCMOS logic levels.

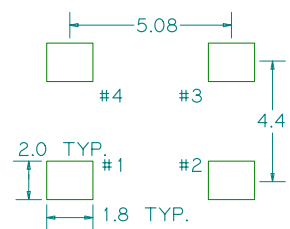
**Applications**

- EPON Optical Network Unit (ONU)
- EPON Optical Line Termination (OLT)
- EPON Gateway

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



Recommended Land Pattern:



**Pin Functions:**

Pin	Function
1	OE Function
2	Ground
3	Clock Output
4	V <sub>DD</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:**  
**FNEPON125**

### Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency		125		MHz	
Supply Voltage	2.97	3.3	3.63	V	
Supply Current, Output Enabled			20	mA	
Supply Current, Output Disabled			10	μA	
Frequency Stability			±50	ppm	See Note 1 below
Operating Temperature Range	-20		+70	°C	
Output Logic 0, V <sub>OL</sub>			10% V <sub>DD</sub>	V	
Output Logic 1, V <sub>OH</sub>	90% V <sub>DD</sub>			V	
Output Load			15	pF	
Duty Cycle	45		55	%	Measured 50% V <sub>DD</sub>
Rise and Fall Time			3	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	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>DD</sub>			V	or open
Input Voltage (pin 1), Output Disable (low power standby)			0.3 V <sub>DD</sub>	V	Output is Hi-Z
Internal Pullup Resistance	30			kΩ	
Output Disable Delay			200	ns	
Output Enable Delay			2	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=FNEPON125>

For test circuit go to: [http://www.pericom.com/pdf/sre/tc\\_hcmos.pdf](http://www.pericom.com/pdf/sre/tc_hcmos.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\\_FNEPON125.pdf](http://www.pericom.com/pdf/sre/pn_FNEPON125.pdf)

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