

3.3V CMOS Low-Jitter 25 MHz GbE XO

FNETHE025



7.0 x 5.0mm Ceramic SMD

ASSP XO™ for Networking



Product Features

- Very low Pk to Pk jitter - 50ps Max
- Low output current - 15mA Max
- Low power standby mode
- RoHS Compliant

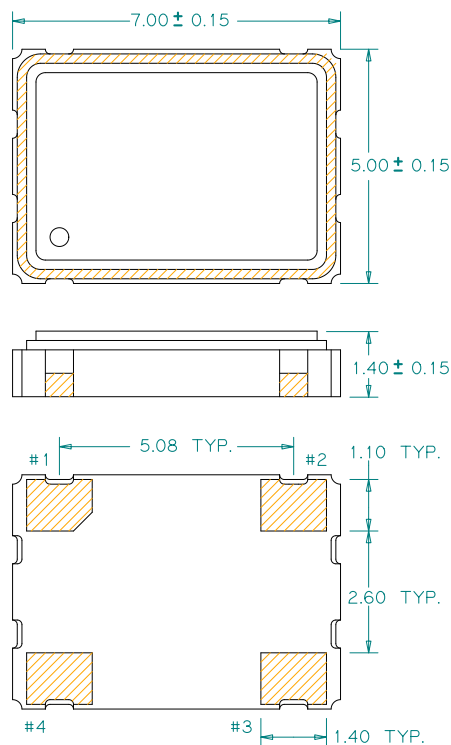
Product Description

This is an enhanced 3.3V, 25MHz crystal clock oscillator with superb jitter and low operating current for providing clock references in Gigabit Ethernet applications.

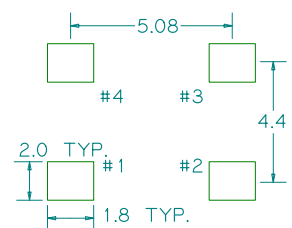
Applications

- Gigabit Ethernet Switch

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



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:
FNETHE025



Electrical Performance

| Parameter | Min. | Typ. | Max. | Units | Notes |
|---------------------------------|---------------------|------|---------------------|-------|------------------------------|
| Output Frequency | | 25 | | MHz | |
| Supply Voltage V _{DD} | 2.97 | 3.3 | 3.63 | V | |
| Supply Current, Output Enabled | | | 15 | mA | |
| Supply Current, Output Disabled | | | 10 | μA | |
| Frequency Stability | | | ±25 | ppm | See Note 1 below |
| Operating Temperature Range | -20 | | +70 | °C | |
| Output Logic 0, V _{OL} | | | 10% V _{DD} | V | |
| Output Logic 1, V _{OH} | 90% V _{DD} | | | V | |
| Output Load | | | 15 | pF | |
| Duty Cycle | 45 | | 55 | % | Measured 50% V _{DD} |
| Rise and Fall Time | | | 7 | ns | Measured 20/80% of waveform |
| Jitter, Phase, RMS(1-σ) | | | 1 | ps | 12kHz~20MHz Frequency Band |
| Jitter, pk-pk | | | 50 | 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 | 0.7 V _{DD} | | | V | or open |
| Input Voltage (pin 1), Output Disable (low power standby) | | | 0.3 V _{DD} | V | Output is Hi-Z |
| Internal Pullup Resistance | 30 | | | kΩ | |
| Output Disable Delay | | | 50 | 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=FNETHE025>

For test circuit go to: http://www.pericom.com/pdf/sre/tc_hcm05.pdf

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

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