

**3.3V CMOS 25.000MHz Ethernet VCXO**

**FRETHE025**



7.0 x 5.0mm Ceramic SMD

**ASSP VCXO™ for Ethernet**



**Product Features**

- Very low Pk to Pk jitter - 50ps Max
- Low supply current - 10mA Max
- Low power standby mode
- RoHS Compliant

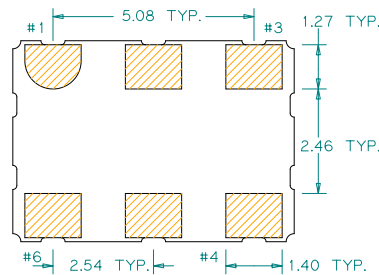
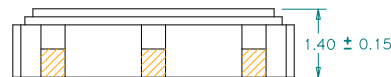
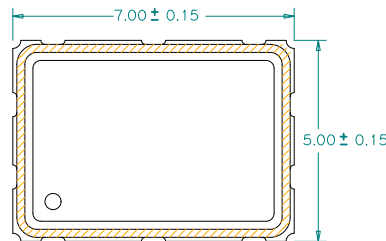
**Product Description**

This is an enhanced 3.3V, 25.000MHz with superb jitter and low operating current for providing clock references in Ethernet applications.

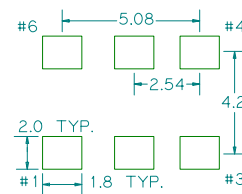
**Applications**

- Ethernet

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



Recommended Land Pattern:



**Pin Functions:**

Pin	Function
1	Control Voltage
2	Enable/Disable
3	Ground
4	Output
5	N/C
6	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:  
FRETHE025**


**ASSP VCXO**
**Application Specific Voltage Controlled  
Crystal Oscillator 7.0 x 5.0mm**

### Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency		25.000		MHz	
Supply Voltage V <sub>DD</sub>	3.135	3.3	3.465	V	
Supply Current, Output Enabled			10	mA	
Supply Current, Output Disabled			2	mA	
Frequency Stability			±25	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			4	ns	Measured 20/80% of waveform
Jitter, Phase, RMS(1-σ)			1	ps	12kHz~20MHz Frequency Band
Jitter, Peak to Peak (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 (10 years at +40°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales.

### Voltage Control Function

Parameter	Min.	Typ.	Max.	Units	Notes
Absolute Pull Range (APR)	±100			ppm	See 1 below
Control Voltage Range	0.3		3.0	V	As rated
Center Control Voltage		1.65		V	For RMT Nominal Frequency
Monotonic Linearity			10	%	Positive Transfer Slope
Input Impedance	5000			kΩ	Control Voltage Pin

**Notes:**

- APR is relative to the nominal output frequency; APR is inclusive of frequency deviation due to stability.

### Output Enable / Disable Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin 2), Output Enable	3.0			V	or open
Input Voltage (pin 2), Output Disable (low power standby)			0.3	V	Output is Hi-Z
Internal Pullup Resistance		20		kΩ	
Output Disable Delay			100	ns	
Output Enable Delay			100	ns	

### 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=FRETHE025>

For test circuit go to: [http://www.pericom.com/pdf/sre/tc\\_vc6cmos.pdf](http://www.pericom.com/pdf/sre/tc_vc6cmos.pdf)

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

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