

# REFERENCE PHASE LOCKED TRANSLATOR

## SURFACE MOUNT MODEL: VFCTS125-10

**FIXED FREQUENCY**

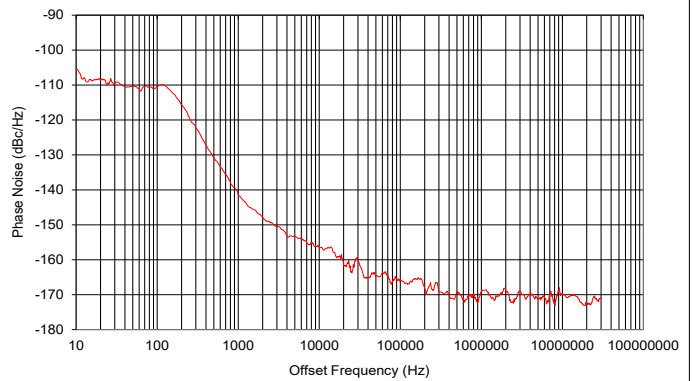
**125 MHz**

**FEATURES:**

- ▶ Ultra-Low Phase Noise
- ▶ No Programming Required
- ▶ Small Size, Surface Mount



Phase Noise ( Measured with Agilent E5052A or R&S FSUP-26/27 )



**SPECIFICATIONS**

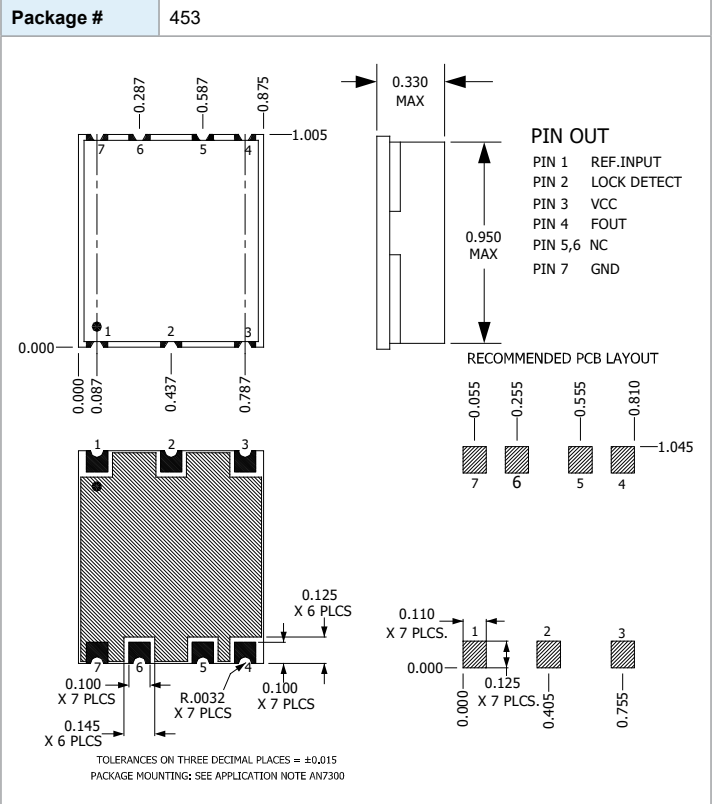
| Frequency                   | 125 MHz   |             |             |          |             |         |             |          |             |           |             |
|-----------------------------|---|-------------|-------------|----------|-------------|---------|-------------|----------|-------------|-----------|-------------|
| Reference Input Frequency   | 10 MHz <sup>1</sup>   |             |             |          |             |         |             |          |             |           |             |
| Reference Input Voltage     | 1.0 to 3.3 V p-p  |             |             |          |             |         |             |          |             |           |             |
| Bias Voltage (Vcc)          | +5 Vdc @ 85 mA (max.)   |             |             |          |             |         |             |          |             |           |             |
| Output Power                | 8 dBm (Min.)  |             |             |          |             |         |             |          |             |           |             |
| Modulation Bandwidth        | 30 Hz (Typ.)  |             |             |          |             |         |             |          |             |           |             |
| Harmonic Suppression        | 28 dB (Typ.)  |             |             |          |             |         |             |          |             |           |             |
| Output Impedance            | 50 Ohms (Nom.)  |             |             |          |             |         |             |          |             |           |             |
| Lock Detect Indicator       | LVC MOS 3.3 V<br>(logic: 1 = lock, 0 = unlock)  |             |             |          |             |         |             |          |             |           |             |
| Typical Phase Noise         | <table border="1"> <thead> <tr> <th>Offset</th> <th>Phase Noise</th> </tr> </thead> <tbody> <tr> <td>@ 100 Hz</td> <td>-110 dBc/Hz</td> </tr> <tr> <td>@ 1 kHz</td> <td>-140 dBc/Hz</td> </tr> <tr> <td>@ 10 kHz</td> <td>-156 dBc/Hz</td> </tr> <tr> <td>@ 100 kHz</td> <td>-165 dBc/Hz</td> </tr> </tbody> </table> | Offset      | Phase Noise | @ 100 Hz | -110 dBc/Hz | @ 1 kHz | -140 dBc/Hz | @ 10 kHz | -156 dBc/Hz | @ 100 kHz | -165 dBc/Hz |
|                             | Offset  | Phase Noise |             |          |             |         |             |          |             |           |             |
|                             | @ 100 Hz  | -110 dBc/Hz |             |          |             |         |             |          |             |           |             |
|                             | @ 1 kHz   | -140 dBc/Hz |             |          |             |         |             |          |             |           |             |
| @ 10 kHz                    | -156 dBc/Hz   |             |             |          |             |         |             |          |             |           |             |
| @ 100 kHz                   | -165 dBc/Hz   |             |             |          |             |         |             |          |             |           |             |
| Operating Temperature Range | -40 to +85 °C   |             |             |          |             |         |             |          |             |           |             |

<sup>1</sup> External 10 MHz reference sources should have phase noise better than -138 dBc/Hz @ 50 Hz offset to achieve published specifications.

**Absolute Maximum Ratings**

|                     |               |
|---------------------|---------------|
| Storage Temp. Range | -40 to +85 °C |
| Bias Voltage (Vcc)  | +5.25 V       |

Patent : <http://www.synergymwave.com/patents>



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 201 McLean Boulevard • Paterson, New Jersey 07504 USA  
 Tel: (973) 881-8800 • Fax: (973) 881-8361  
 E-Mail: [sales@synergymwave.com](mailto:sales@synergymwave.com) • Website: <http://www.synergymwave.com>  
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# REFERENCE PHASE LOCKED TRANSLATOR SURFACE MOUNT MODEL: VFCTS125-10

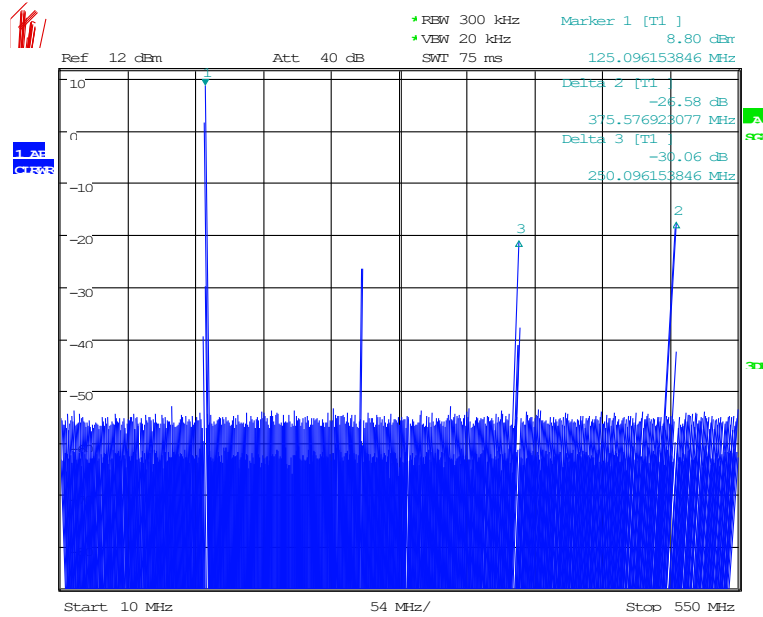
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125 MHz

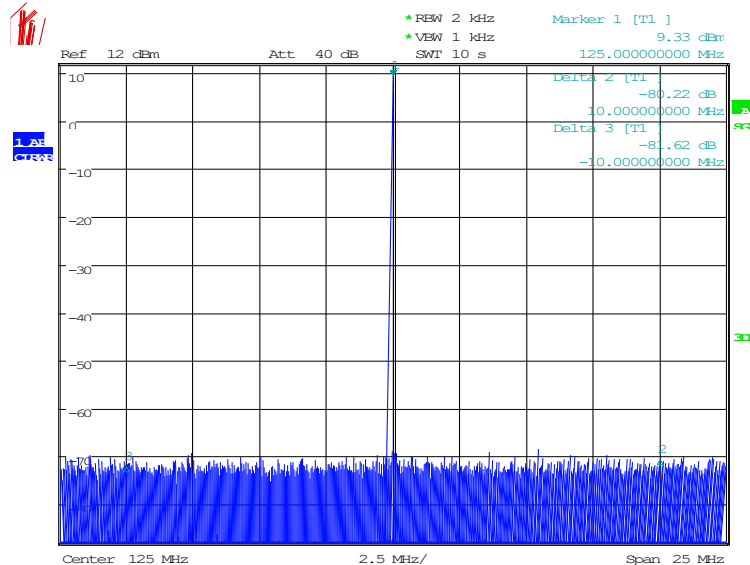
@ 25 °C

PERFORMANCE PLOTS

HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



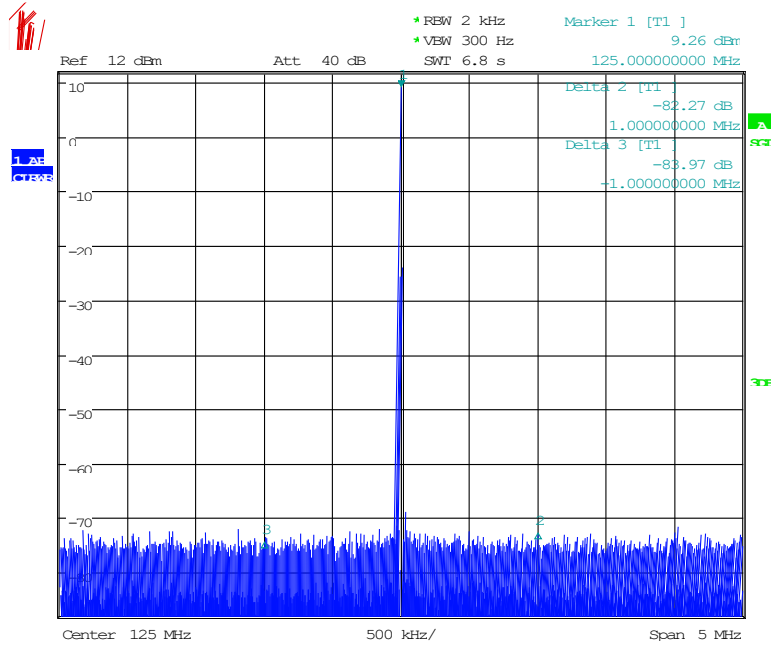
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@ 25 °C



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