

# VOLTAGE CONTROLLED OSCILLATOR

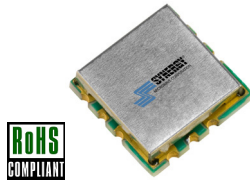
## SURFACE MOUNT MODEL: DCO5001000-5

## OPTIMIZED BANDWIDTH

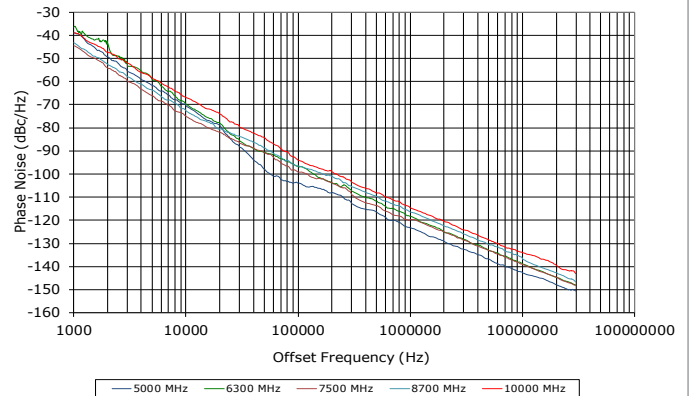
## 5000 - 10000 MHz

### FEATURES:

- ▶ **Miniature Size, Surface Mount (0.3"x0.3")**
- ▶ **Superb Phase Noise Performance**
- ▶ **Optimized Narrow Band Tuning**



## Phase Noise



## SPECIFICATIONS (Rev. A 02/08/16 )

|                                    |                              |               |
|------------------------------------|------------------------------|---------------|
| <b>Frequency</b>                   | 5000 - 10000 MHz             |               |
| <b>Tuning Voltage</b>              | 0.3 - 18 V                   |               |
| <b>Bias Voltage</b>                | +5 VDC @ 16 mA (Max.)        |               |
| <b>Output Power</b>                | -4 dBm (Min.)                |               |
| <b>Tuning Sensitivity</b>          | 60 - 680 MHz/V (Typ.)        |               |
| <b>Output Impedance</b>            | 50 Ohms (Nom.)               |               |
| <b>Harmonic Suppression</b>        | 12 dB (Typ.)                 |               |
| <b>Frequency Pulling</b>           | 144 MHz (Typ. @ 1.75:1 VSWR) |               |
| <b>Frequency Pushing</b>           | 40 MHz/V (Typ.)              |               |
| <b>Tuning Port Capacitance</b>     | 15 pF (Typ.)                 |               |
| <b>Typical Phase Noise</b>         | <b>Offset</b>                | <b>dBc/Hz</b> |
|                                    | 10 kHz                       | -70           |
|                                    | 100 kHz                      | -95           |
| <b>Operating Temperature Range</b> | -40 to +85 °C                |               |

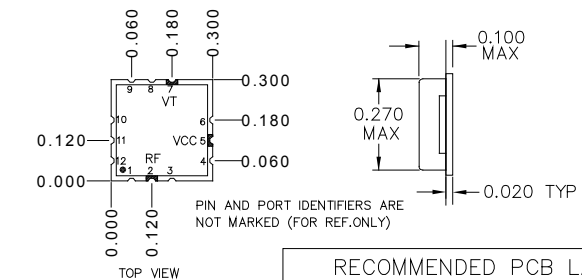
## Guaranteed Tuning Specifications

| Tuning Voltage ( V ) | Frequency ( MHz ) |
|----------------------|-------------------|
| 0.3                  | 5000 (Max.)       |
| 5                    | 6700 (Min.)       |
| 8                    | 8000 (Min.)       |
| 12                   | 9000 (Min.)       |
| 18                   | 10000 (Min.)      |

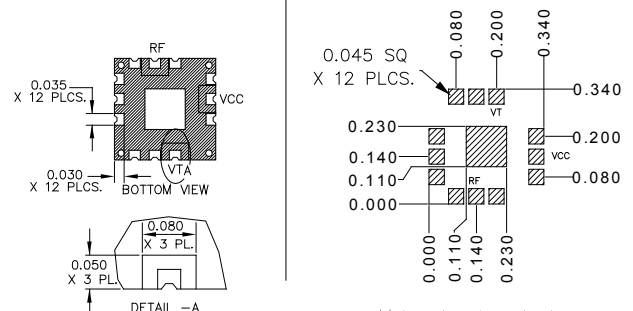
### Absolute Maximum Ratings

|                                     |                |
|-------------------------------------|----------------|
| <b>Storage Temp. Range</b>          | -55 to +125 °C |
| <b>Bias Voltage</b>                 | +5.5 V         |
| <b>Tuning Voltage</b>               | +20 V          |
| <b>DC Voltage Applied to RF Out</b> | ± 25 V         |

|           |     |
|-----------|-----|
| Package # | 422 |
|-----------|-----|



## RECOMMENDED PCB LAYOUT



DIMENSIONS ARE IN INCHES.

TOLERANCES ON THREE  
DECIMAL PLACES=  $\pm 0.015$

ALL UNLABELED PINS  
TO BE GROUNDED.

PACKAGE MOUNTING: SEE APPLICATION NOTE AN7300 & AN7302

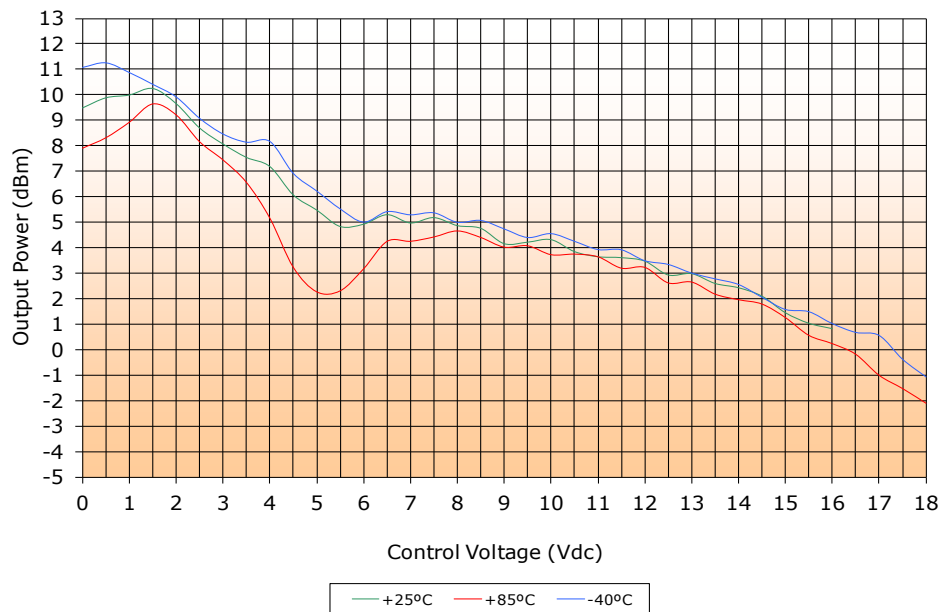
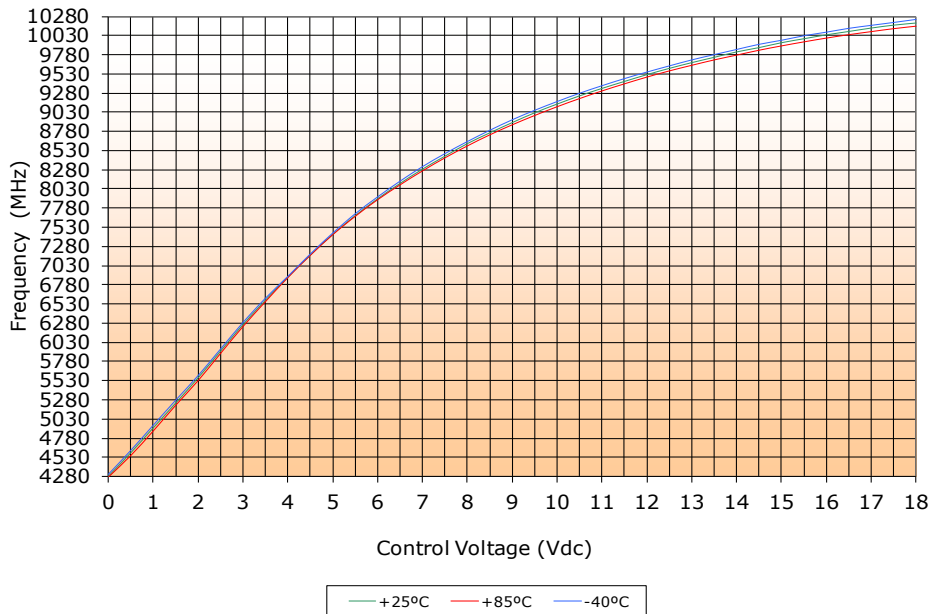
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