

MMIC VCO w/ BUFFER AMPLIFIER, 2.6 - 2.8 GHz



Typical Applications

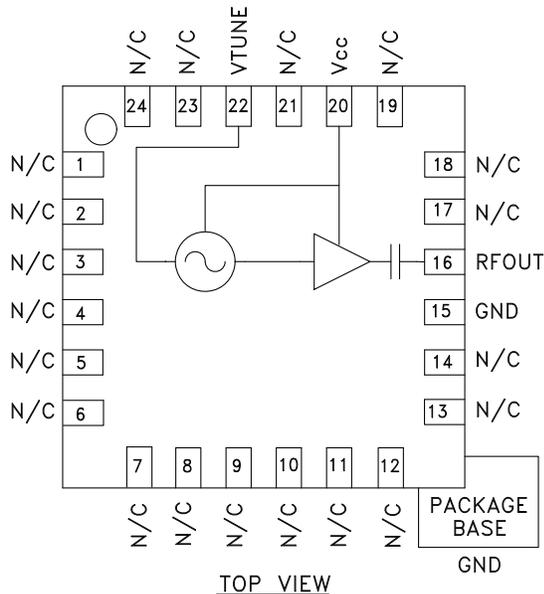
Low noise MMIC VCO w/Buffer Amplifier for:

- Wireless Infrastructure
- Industrial Controls
- Test Equipment
- Military

Features

- Pout: +5 dBm
- Phase Noise: -114 dBc/Hz @100 kHz
- No External Resonator Needed
- Single Supply: 3V @ 35mA
- 24 Lead 4x4mm QFN Package: 16 mm²

Functional Diagram



General Description

The HMC386LP4 & HMC386LP4E are GaAs InGaP Heterojunction Bipolar Transistor (HBT) MMIC VCOs with integrated resonators, negative resistance devices, varactor diodes, and buffer amplifiers. Covering 2.6 to 2.8 GHz, the VCO's phase noise performance is excellent over temperature, shock, vibration and process due to the oscillator's monolithic structure. Power output is 5 dBm typical from a single supply of 3V @ 35mA. The voltage controlled oscillator is packaged in a low cost leadless QFN 4x4 mm surface mount package.

Electrical Specifications, $T_A = +25\text{ }^\circ\text{C}$, $V_{CC} = +3\text{V}$

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2.6 - 2.8			GHz
Power Output	2	5		dBm
SSB Phase Noise @ 100 kHz Offset, $V_{tune} = +5\text{V}$ @ RF Output		-114		dBc/Hz
Tune Voltage (V_{tune})	0		10	V
Supply Current (I_{cc}) ($V_{CC} = +3\text{V}$)		35		mA
Tune Port Leakage Current			10	μA
Output Return Loss		9		dB
Harmonics				
2nd		-5		dBc
3rd		-15		dBc
Pulling (into a 2.0:1 VSWR)		3		MHz pp
Pushing @ $V_{tune} = +5\text{V}$		2		MHz/V
Frequency Drift Rate		0.3		MHz/ $^\circ\text{C}$

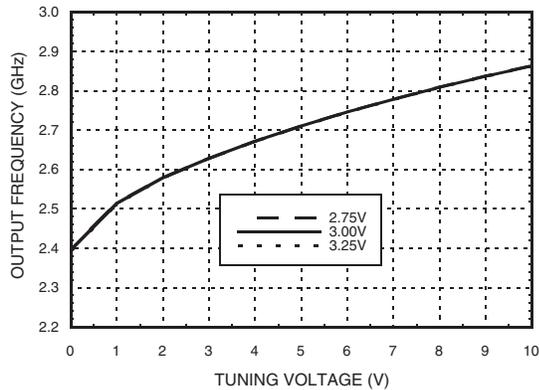
Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

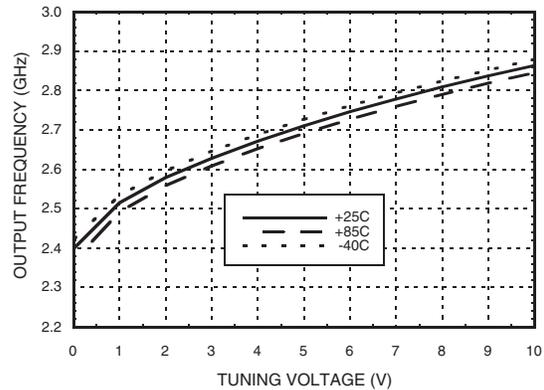


MMIC VCO w/ BUFFER AMPLIFIER, 2.6 - 2.8 GHz

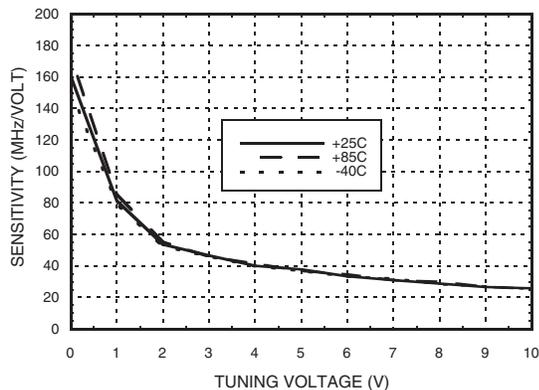
Frequency vs. Tuning Voltage, T = 25°C



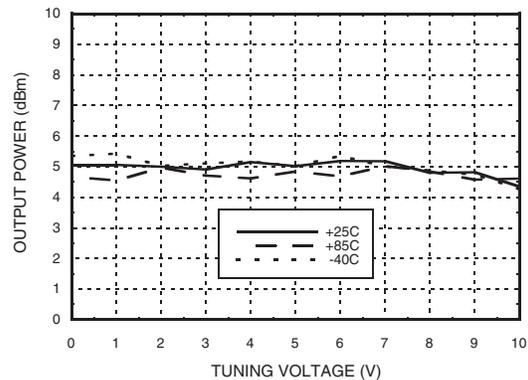
Frequency vs. Tuning Voltage, Vcc = +3V



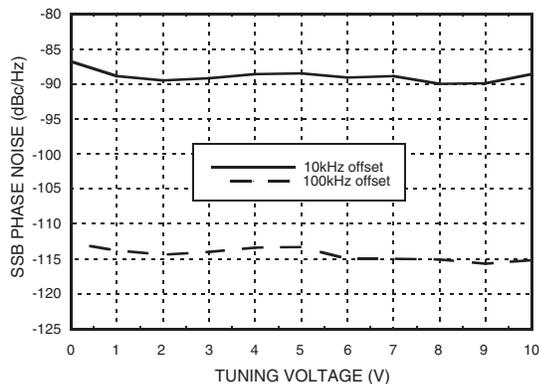
Sensitivity vs. Tuning Voltage, Vcc = +3V



Output Power vs. Tuning Voltage, Vcc = +3V



Phase Noise vs. Tuning Voltage



Typical SSB Phase Noise @ Vtune= +5V

