

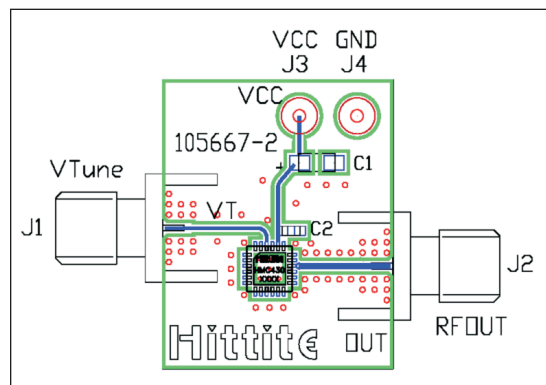
# New MMIC VCOs are Ready for 5 GHz WLAN, VSAT and UNII Applications

Two new VCOs simplify the development of microwave radios for emerging applications in the 5 GHz frequency range

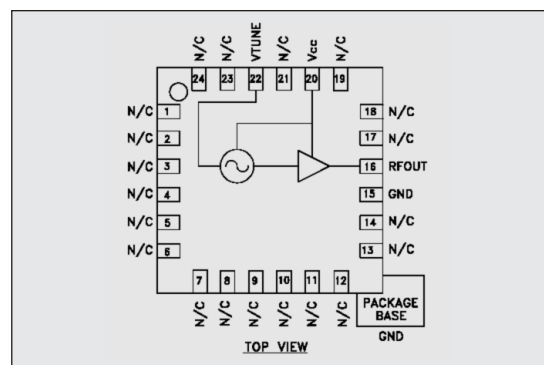
**H**ittite Microwave has introduced two new MMIC VCOs for 5 GHz applications: The HMC430LP4, covering 5.0 to 5.5 GHz; and the HMC431LP4,

covering 5.5 to 6.1 GHz. Both devices are provided in 4 x 4 mm plastic packages. Key specifications (typical) of the HMC430LP4 include:

- Power output:* 2 dBm
- SSB phase noise:* -103 dBc/Hz at 100 kHz offset  
-125 dBc/Hz at 1 MHz offset
- Tune voltage:* 0 to 10 volts
- Operating voltage:* 2.75 to 3.25 volts
- Supply current:* 27 mA @  $V_{cc} = 3.0$  volts
- Output return loss:* 6 dB
- Harmonics:* 2nd = -15 dB  
3rd = -25 dB
- Operating temp:* -40 to +85°C (max.)



Evaluation boards allow engineers to quickly test the new VCOs for applicability in their new designs.



The MMICs VCOs have on-chip resonators and do not require additional off-chip components other than bypass capacitors. The VCO output is AC coupled, requiring no additional coupling capacitors. The package has an exposed metal pad on the bottom to provide DC and RF grounding.

The  $V_{tune}$  input has an equivalent circuit of 2.4 pF parallel capacitance, followed by a 7.5 nH inductor and 150 ohm resistor for RF isolation of the tuning diode. The allowable modulation bandwidth, therefore, depends on the drive source impedance.

Applications for the HMC430LP4 and HMC431LP4 include IEEE 802.11(a) and HiperLAN products, VSAT radios, UNII wireless Internet access systems, and other point-to-point and point-to-multipoint microwave communications.

Evaluation boards are available for these devices. Price and delivery information can be obtained from the manufacturer.

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