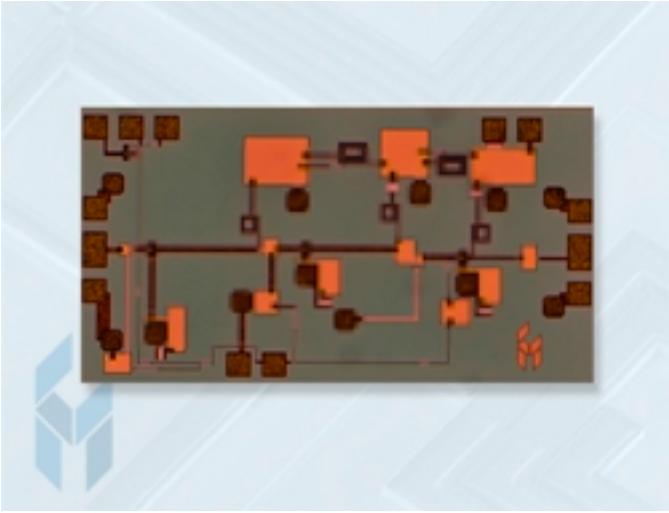
Ka-Band LNA MMIC Offers 1.7 dB Noise Figure and Low-Power Dissipation



Custom MMIC (http://www.custommmic.com/ [1]), a developer of performance driven monolithic microwave integrated circuits (MMICs), is offering a new device from its growing MMIC design library. The CMD162 is a GaAs MMIC low-noise amplifier (LNA) chip for applications from 26 to 34 GHz. Optimized for 30 GHz satellite communications, the CMD162 boasts a typical noise figure of 1.7 dB with a small-signal gain of 22 dB and an output 1 dB compression point of +7 dB. This amplifier delivers high performance with high efficiency, reducing typical industry DC power dissipation for a device in this frequency band from approximately 340 mW down to 50 mW.

The CMD162 also offers subsystem and device designers a key cost reduction attribute. Implementation is simplified since the device only requires positive drain and gate voltages of +2 V, thereby eliminating the negative voltages and sequencer circuits commonly associated with LNAs in this frequency range. The CMD162 can be biased with a drain voltage ranging from +1 to +4 V and a gate voltage ranging from 0 to +3 V.

The amplifier die measures 2.3 x 1.3 mm, includes gold backside metallization, and has full nitride passivation for increased reliability and moisture protection. It can handle input signal levels to +20 dBm. The GaAs MMIC amplifier has typical input return loss of 18 dB and typical output return loss of 20 dB, both at 30 GHz. It is a much smaller, lower-cost alternative to hybrid LNAs for this frequency range, and is uniquely suited for both narrowband and broadband applications requiring small size and low current consumption, including phased-array radar and point-to-point microwave radio systems.

For a full datasheet on the CMD162 GaAs MMIC LNA, visit: http://www.custommmic.com/Custom-MMIC_data_sheets.html [2]

Posted by Janine E. Mooney, Editor

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