Abstracts

Monolithic Ka-Band VCOs

R. Goldwasser, D. Donoghue, G. Dawe, S. Nash, C. Fingerman, I. Crossley, C. Mason, L. Rafaelli and R. Tayrani. "Monolithic Ka-Band VCOs." 1988 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 88.1 (1988 [MCS]): 55-58.

Two distinct monolithic GaAs Voltage Controlled Oscillators have been developed: a Gunn diode based circuit and a FET based circuit. The Gunn VCO design incorporates 14 Gunn diodes, a varactor diode, power combiner, matching network and bias on a single integrated chip. The Gunn oscillator has delivered 125 mW at 32 GHz and 70 mW at 40 GHz. This is considerably above power levels reported for Ka-band Monolithic Oscillators to date. The FET circuit utilizes a 1/4 µm x 200 µm GaAs MESFET; it has produced up to 20 mW output power. This is the first publication of a millimeter wave, monolithic MESFET VCO to our knowledge.

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