Abstracts

Ka-Band Monolithic VCOs for Low Noise Applications Using GaInP/GaAs HBTs (1994 [MCS])

U. Guttich, J.M. Dieudonne, K. Riepe, A. Marten and H. Leier. "Ka-Band Monolithic VCOs for Low Noise Applications Using GaInP/GaAs HBTs (1994 [MCS])." 1994 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 94.1 (1994 [MCS]): 165-168.

Design, fabrication and evaluation of Ka-band monolithic voltage controlled oscillators using GaInP/GaAs Heterojunction Bipolar Transistors (HBTs) as the active device are described. The employed HBTs have an emitter area of 2 x 1.5 µm x 10 µm and a self-aligned base. The varactor diode is formed from the base-collector junction of the HBT structure. The oscillators are realized in a common emitter configuration and show tuning ranges of about 1 GHz at center frequencies of 35 GHz, 37 GHz and 40 GHz. Best measured phase noise at 1 MHz off carrier is -107 dBc/Hz.

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