

Abstracts

Ka-Band Monolithic VCOs for Low Noise Applications Using GaInP/GaAs HBTs (1994 Vol. I [MWSYM])

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 Vol. I [MWSYM])." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 131-134.

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 $2 \times 1.5\mu\text{m} \times 10\mu\text{m}$ 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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