Abstracts

W-band InGaP/GaAs HBT MMIC frequency sources

M.S. Heins, T. Juneja, J.A. Fendrich, J. Mu, D. Scott, Q. Yang, M. Hattendorf, G.E. Stillman and M. Feng. "W-band InGaP/GaAs HBT MMIC frequency sources." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 239-242 vol.1.

W-band frequency sources using InGaP/GaAs HBTs are compared. The first is a fundamental frequency oscillator that provides 93 mW output power at 73.5 GHz in a compact (0.404 mm/sup 2/) chip, while the other is a doubled 38 GHz VCO providing 75 /spl mu/W output power and improved phase noise in a 5 times larger (2.139 mm/sup 2/) chip. The trade-offs in both of these designs are discussed. It was also found that cooling the 38 GHz VCOs to 100 K and 200 K improved the phase noise performance.

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