Abstracts

A Class of Monolithic HBT Multipliers (1991 [MCS])

C.B. Perry, K.T. Ip, K.Z. Claxton, B.R. Allen and A.E. Farris. "A Class of Monolithic HBT Multipliers (1991 [MCS])." 1991 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 91.1 (1991 [MCS]): 77-80.

Two types of monolithic multipliers have been developed using current AlGaAs HBT technology. Both circuits have an intended input frequency range of 10 MHz to 1.0 GHz. Preliminary wafer probe measurements indicate the even order multiplier achieves 45 dB of fundamental rejection and 22 dB conversion loss at 2.5 GHz (10th harmonic), consuming 175 mW. The odd order multiplier exhibited 21 dB of conversion loss at 10 GHz (10th harmonic) and 35 dB at 21 GHz (21st harmonic), dissipating 315 mW. These circuits offer significant improvement in bandwidth, output power and lower implementation cost compared to existing diode-based MIC or MMIC MESFET frequency multipliers.

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