Abstracts

A 25 Ohm, 2W, 8-14 GHz HBT Power MMIC with 20 dB Gain and 40% Power Added Efficiency

F. Ali, A. Gupta, M. Salib, B. Veasel and D. Dawson. "A 25 Ohm, 2W, 8-14 GHz HBT Power MMIC with 20 dB Gain and 40% Power Added Efficiency." 1994 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 94.1 (1994 [MCS]): 113-115.

A two-stage, 8-14 GHz high efficiency AIGaAs/GaAs HBT MMIC power amplifier has been designed and tested. At 7V collector bias, this common-emitter monolithic amplifier has achieved 20 dB gain, 33 dBm (CW) output power and 40% power added efficiency over 8-14 GHz band. The amplifier is designed for a 25 ohm input and output impedance and all the matching networks, as well as biasing circuits, are contained within this HBT MMIC. To our knowledge, this is the highest efficiency, the highest gain and the highest output power reported for any monolithic power amplifier covering 6 GHz bandwidth in the X-Ku band.

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