Abstracts

V-Band High-Efficiency High-Power AlInAs/GaInAs/InP HEMTs (1993 Vol. II [MWSYM])

M. Matloubian, L.M. Jelloian, A.S. Brown, L.D. Nguyen, L.E. Larson, M.J. Delaney, M.A. Thompson, R.A. Rhodes and J.E. Pence. "V-Band High-Efficiency High-Power AlInAs/GaInAs/InP HEMTs (1993 Vol. II [MWSYM])." 1993 MTT-S International Microwave Symposium Digest 93.2 (1993 Vol. II [MWSYM]): 535-538.

In this paper we report on the state-of-the-art power performance of InP-based HEMTs at 59 GHz. Using a 448 µm wide HEMT with a gate-length of 0.15 µm, an output power of 155 mW with 4.9 dB gain, and power-added efficiency of 30.1% were obtained. By power combining two of these HEMTs we were able to achieve an output power of 288 mW with 3.6 dB gain and power-added efficiency of 20.4%. This is the highest output power reported with such a high-efficiency for InP-based HEMTs, and is comparable to the best results reported for AlGaAs/InGaAs on GaAs pseudomorphic HEMTs at this frequency.

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