Abstracts

A High Power, High Efficiency Millimeter-Wave Pseudomorphic HEMT

P.M. Smith, D.W. Ferguson, W.F. Kopp, P.C. Chao, W. Hu, P. Ho and J.M. Ballingall. "A High Power, High Efficiency Millimeter-Wave Pseudomorphic HEMT." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 717-720.

We have developed a pseudomorphic HEMT with record output power and high efficiency at 44 GHz. The 0.15µm gate-length, 900µm gate-width device generates 500 to 700 mW of output power with power-added efficiencies ranging from 22 to 30%. Moreover, the devices are producible DC yields for these large gate-width HEMTs are 50-80% and uniformity of electrical characteristics is excellent. Reliability aspects of the device are discussed and the results of high-temperature DC life testing of pseudomorphic power HEMTs are reported for the first time.

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