Abstracts

A 0.15µm Gate-Length Pseudomorphic HEMT

P.M. Smith, M.Y. Kao, P. Ho, P.C. Chao, K.H.G. Duh, A.A. Jabra, R.P. Smith and J.M. Ballingall. "A 0.15µm Gate-Length Pseudomorphic HEMT." 1989 MTT-S International Microwave Symposium Digest 89.3 (1989 Vol. III [MWSYM]): 983-986.

0.15µm gate-length double heterojunction pseudomorphic HEMTs that simultaneously exhibit state-of-the-art power and noise performance are reported. Power results include record power-added efficiencies of 51%, 41%, and 23% at 35, 60 and 94 GHz, respectively, and output powers of 139mW at 60 GHz and 57mW at 94 GHz. Measured minimum noise figures of 0 55dB at 18GHz and 1.8dB at 60 GHz are the lowest ever reported for passivated transistors. Based on its demonstrated performance and continued rapid rate of improvement, the pseudomorphic HEMT should be the preferred transistor for a number of millimeter wave applications, used either as a discrete device in high performance hybrid amplifiers or integrated into GaAs-based MMICs.

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