Abstracts

InGaAs Pseudomorphic HEMTs for Millimeter Wave Power Applications

P.M. Smith, P.C. Chao, L.F. Lester, R.P. Smith, B.R. Lee, D.W. Ferguson, A.A. Jabra, J.M. Ballingall and K.H.G. Duh. "InGaAs Pseudomorphic HEMTs for Millimeter Wave Power Applications." 1988 MTT-S International Microwave Symposium Digest 88.2 (1988 Vol. II [MWSYM]): 927-930.

We report the development of lnGaAs pseudomorphic high electron mobility transistors with state-of-the-art power performance at millimeter-wave frequencies. Results include maximum power-added efficiencies of 44% at 35 GHz and 36% at 44 GHz, output power of 100 mW with 22% efficiency and 3 dB gain at 60 GHz, and output power of 9 mW at 94 GHz. Preliminary reliability data is presented, and prospects for further improvement in performance--the realization of multi-finger HEMTs capable of higher output power and reduction of gate length to 0.1µm--are discussed.

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