Abstracts

W-Band High Efficiency InP-Based Power HEMT with 600 GHz f/sub max/

P.M. Smith, S.-M.J. Liu, M.-Y. Kao, P. Ho, S.C. Wang, K.H.G. Duh, S.T. Fu and P.C. Chao. "W-Band High Efficiency InP-Based Power HEMT with 600 GHz f/sub max/." 1995 Microwave and Guided Wave Letters 5.7 (Jul. 1995 [MGWL]): 230-232.

We have developed 0.1-µm gate-length InAIAs/InGaAs/ InP power HEMT's with record efficiency and power gain at 94 GHz. A 200 µm gate-width device has produced 58 mW output power with 6.4 dB power gain and 33% power-added efficiency. The extrapolated f/sub max/ of 600 GHz is the highest reported to date for any transistor, and smaller 30-µm devices fabricated on the same wafer exhibit excellent noise figure (1.4 dB at 94 GHz), demonstrating the applicability of this technology to multifunction MMIC's.

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