Abstracts

20-GHz High-Efficiency AlInas-GaInAs on InP Power HEMT

M. Matloubian, A.S. Brown, L.D. Nguyen, M.A. Melendes, L.E. Larson, M.J. Delaney, M.A. Thompson, R.A. Rhodes and J.E. Pence. "20-GHz High-Efficiency AlInas-GaInAs on InP Power HEMT." 1993 Microwave and Guided Wave Letters 3.5 (May 1993 [MGWL]): 142-144.

A single stage 20-GHz power amplifier was developed using double-doped AlInAs-GaInAs on InP HEMT. Output power of 516 mW (0.645 W/mm) with power-added efficiency of 47.1% with 7.1-dB gain were obtained from an 800-µm wide device. The device had a saturated output power of more than 560 mW (0.7 W/mm). This is believed to be the highest combination of output power, power density, gain, and power-added efficiency reported for an InP-based FET at this frequency.

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