Abstracts

High-Efficiency GaInP/GaAs HBT MMIC Power Amplifier with up to 9 W Output Power at 10 GHz

K. Riepe, H. Leier, U. Seiler, A. Marten and H. Sledzik. "High-Efficiency GaInP/GaAs HBT MMIC Power Amplifier with up to 9 W Output Power at 10 GHz." 1996 Microwave and Guided Wave Letters 6.1 (Jan. 1996 [MGWL]): 22-24.

Monolithic power amplifiers using adequately balasted high-efficiency GaInP/GaAs heterojunction bipolar transistors (HBT's) have been designed, fabricated, and tested. A maximum output power of 9 W with a power-added efficiency (PAE) of 42% and peak power-added efficiencies of 45% have been achieved at 10 GHz under critical long pulse conditions (pulse width = 100 µs, duty cycle= 10%). To our knowledge these results represent the best performance of any GaInP/GaAs HBT MMIC power amplifier considering efficiency, output power, operation frequency, and pulse conditions.

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