Abstracts

A 94-GHz 130-mW InGaAs/InAlAs/InP HEMT High-power MMIC Amplifier

Y.C. Chen, R. Lai, E. Lin, H. Wang, T. Block, H.C. Yen, D. Streit, W. Jones, P.H. Liu, R.M. Dia, T.-W. Huang, P.-P. Huang and K. Stamper. "A 94-GHz 130-mW InGaAs/InAlAs/InP HEMT High-power MMIC Amplifier." 1997 Microwave and Guided Wave Letters 7.5 (May 1997 [MGWL]): 133-135.

We have developed W-band high-power monolithic microwave integrated circuit (MMIC) amplifiers using passivated 0.15-µm gate length InGaAs/InAlAs/InP HEMT's. A 640-µm single-stage MMIC amplifier demonstrated an output power of 130 mW with 13% power-added efficiency and 4-dB associated gain at 94 GHz. This result represents the best output power to date measured from a single fixtured InP-based HEMT MMIC at this frequency.

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