Abstracts

A 94-GHz 0.35-W power amplifier module

Pin-Pin Huang, Tian-Wei Huang, Huei Wang, E.W. Lin, Yonghui Shu, G.S. Dow, R. Lai, M. Biedenbender and J.H. Elliott. "A 94-GHz 0.35-W power amplifier module." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part II [T-MTT] (1997 Symposium Issue)): 2418-2423.

This paper presents a 94-GHz power amplifier (PA) module. This module contains three identical monolithic microwave integrated circuit (MMIC) PA chips and demonstrates 0.35-W output power at the waveguide output port with a miniature size. The MMIC PA is a two-stage monolithic W-band PA using 0.1-/spl mu/m pseudomorphic AlGaAs/InGaAs/GaAs T-gate power high electron mobility transistor (HEMT) process. This MMIC PA exhibits a measured linear gain of 8 dB and a maximum output power of 300 mW with 10.5% peak power-added efficiency (PAE) at 94 GHz. To our knowledge, both the 300-mW output power MMIC PA and the 0.35-W PA module represent the highest output power amplification component performance at this frequency.

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