Abstracts

A 60-GHz High Efficiency Monolithic Power Amplifier Using 0.1-µm PHEMT's

S.-W. Chen, P.M. Smith, S.-M.J. Liu, W.F. Kopp and T.J. Rogers. "A 60-GHz High Efficiency Monolithic Power Amplifier Using 0.1-µm PHEMT's." 1995 Microwave and Guided Wave Letters 5.6 (Jun. 1995 [MGWL]): 201-203.

We report the development of a V-band monolithic power amplifier based on 0.1 µm gate-length pseudomorphic HEMT's. The two-stage amplifier has demonstrated record performance at 60 GHz on the first design pass: 272 mW output power with 9.4 dB power gain and 24% power-added efficiency. The amplifier was designed for high-reliability communications applications, with passivation, good linearity and excellent thermal properties, and has been fabricated on 3-in. wafers with high yield and excellent uniformity--on one typical wafer, consistency of MMIC ontput power is better than ±0.5 dB with an associated total yield through RF test of 58%.

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