Abstracts

Integrated Coplanar MM-Wave Amplifier with Gain Control Using a Dual-Gate InP HEMT (Dec. 1996, Part II [T-MTT])

M. Schefer, H.-P. Meier, B.-U. Klepser, W. Patrick and W. Bachtold. "Integrated Coplanar MM-Wave Amplifier with Gain Control Using a Dual-Gate InP HEMT (Dec. 1996, Part II [T-MTT])." 1996 Transactions on Microwave Theory and Techniques 44.12 (Dec. 1996, Part II [T-MTT] (1996 Symposium Issue)): 2379-2383.

Variable gain mm-wave amplifiers, based on InP high-electron mobility transistor (HEMT) devices, are demonstrated. The two-stage circuits consist of a single-gate (SG) and dual-gate (DG) transistor. The influence of the gate recess depth on the gain control range is investigated. A maximum gain control range of 32 dB is achieved which is the largest reported in the mm-wave range for a monolithically integrated variable gain amplifier (VGA). The maximum gain is 25.7 dB at 48.5 GHz with a 3-dB bandwidth of 10.5 GHz. The circuits were fabricated in coplanar technology

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