Abstracts

A coplanar 148 GHz cascode amplifier MMIC using 0.15 /spl mu/m GaAs PHEMTs

A. Tessmann, O. Wohlgemuth, R. Reuter, W. Haydl, H. Massler and A. Hulsmann. "A coplanar 148 GHz cascode amplifier MMIC using 0.15 /spl mu/m GaAs PHEMTs." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 991-994.

A two-stage D-band amplifier MMIC with 12 dB gain at 148 GHz has been developed, using a 0.15 /spl mu/m AlGaAs/InGaAs/GaAs PHEMT technology. The amplifier employs cascode HEMT devices with 2/spl times/30 /spl mu/m gate periphery, having a maximum oscillation frequency f/sub max/ of 180 GHz. On-wafer vector measurements up to 200 GHz were performed, using active probes based on nonlinear transmission lines. The circuit features coplanar technology for compact size and low cost. The overall chip-size is 1/spl times/1.5 mm/sup 2/.

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