Abstracts

High-Gain, Low-Noise Monolithic HEMT Distributed Amplifiers up to 60 GHz (Short Papers)

C. Yuen, C. Nishimoto, Y.C. Pao, M. Day, S. Bandy and G. Zdasiuk. "High-Gain, Low-Noise Monolithic HEMT Distributed Amplifiers up to 60 GHz (Short Papers)." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 2016-2017.

Ultra-broad-bandwidth distributed amplifiers with cutoff frequencies of 45 and 60 GHz have been developed utilizing 0.25 µm AlGaAs and InP cascode HEMT's with a mushroom gate profile. A measured gain as high as 10±1 dB from 5 to 50 GHz and a gain of 8±1 dB from 5 to 60 GHz, respectively, have been achieved from amplifiers using AlGaAs HEMT's. Amplifiers fabricated on InP HEMT material have demonstrated a gain of 15±1 dB from 5 to 50 GHz and 12±1 dB from 5 to 60 GHz, respectively. The measured noise figure for these amplifiers is approximately 2.5-4 dB in the Ka-band. The measured P/sub 1 dB/ is around 12.5 dBm at 40 GHz. The chip size is 2.3 X 0.9 mm².

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