Abstracts

Sensitivity of a 40 GHz HEMT Low-Noise Amplifier to Material and Processing Variations (Short Papers)

C. Yuen, C. Nishimoto, S. Bandy and G. Zdasiuk. "Sensitivity of a 40 GHz HEMT Low-Noise Amplifier to Material and Processing Variations (Short Papers)." 1989 Transactions on Microwave Theory and Techniques 37.12 (Dec. 1989 [T-MTT] (1989 Symposium Issue)): 2169-2170.

A monolithic, single-stage HEMT low-noise amplifier has been developed at 40 GHz for the application to satellite communication. This amplifier includes a single 0.25-µm-gate-length HEMT active device with on-chip matching and biasing circuits. A gain of 8 dB and a noise figure of 4 dB were measured from 36 to 42 GHz for an amplifier with a mushroom gate profile. Using a triangular gate profile device with a lower gate-to-drain feedback capacitance, the amplifier achieved a 10 dB peak gain at 43 GHz. The chip size is 1.1 x 1.1 mm^2.

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