Abstracts

Design and Performance of Microwave Amplifiers with GaAs Schottky-Gate Field-Effect Transistors

C.A. Liechti and R.L. Tillman. "Design and Performance of Microwave Amplifiers with GaAs Schottky-Gate Field-Effect Transistors." 1974 Transactions on Microwave Theory and Techniques 22.5 (May 1974 [T-MTT]): 510-517.

The design and performance of an X-band amplifier with GaAs Schottky-gate field-effect transistors are described. The amplifier achieves 20 ± 1.3-dB gain with a 5.5-dB typical noise figure (6.9 dB maximum) over the frequency range of 8.0-12.0 GHz. The VSWR at the input and output ports does not exceed 2.5:1. The minimum output power for 1-dB gain compression is +13 dBm, and the intercept point for third-order intermodulation products is +26 dBm. The design of practical wide-band coupling networks is discussed. These networks minimize the overall amplifier noise figure and maintain a constant gain in the band.

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