Abstracts

A 155-GHz monolithic low-noise amplifier

H. Wang, R. Lai, Y.-L. Kok, T.-W. Huang, M.V. Aust, Y.C. Chen, P.H. Siegel, T. Gaier, R.J. Dengler and B.R. Allen. "A 155-GHz monolithic low-noise amplifier." 1998 Transactions on Microwave Theory and Techniques 46.11 (Nov. 1998, Part I [T-MTT]): 1660-1666.

This paper presents the design, fabrication, and test results of a three-stage 155-GHz monolithic low-noise amplifier (LNA) fabricated with the 0.1-/spl mu/m pseudomorphic (PM) InAlAs-InGaAs-InP HEMT technology. With this amplifier in a test fixture, a small-signal gain of 12 dB was measured at 155 GHz, and more than 10-dB gain from 151 to 156 GHz. When the amplifier was biased for a low noise figure (NF), an NF of 5.1 dB with an associated gain of 10.1 dB was achieved at 155 GHz. All the results above are referred to the monolithic millimetre-wave integrated circuit (MIMIC) chip with the input and output waveguide-to-microstrip line transition losses corrected.

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