Abstracts

160-190-GHz monolithic low-noise amplifiers

Y.L. Kok, H. Wang, T.W. Huang, R. Lai, M. Barsky, Y.C. Chen, M. Sholley, T. Block, D.C. Streit, B.R. Allen, L. Samoska and T. Gaier. "160-190-GHz monolithic low-noise amplifiers." 1999 Microwave and Guided Wave Letters 9.8 (Aug. 1999 [MGWL]): 311-313.

The authors present the results of two 160-190-GHz monolithic low-noise amplifiers (LNAs) fabricated with 0.07-/spl mu/m pseudomorphic (PM) InAlAs-InGaAs-InP HEMT technology using a reactive ion etch (RIE) via hole process. A peak small signal gain of 9 dB was measured at 188 GHz for the first LNA with a 3 dB bandwidth from 164 to 192 GHz while the second LNA has achieved over 6 dB gain from 142 to 180 GHz. The same design (second LNA) was also fabricated with a 0.08-/spl mu/m gate and a wet etch process, showing a small-signal gain of 6 dB with 6 dB noise figure. All the measurement results were obtained via on-wafer probing. The LNA noise measurement at 170 GHz is also the first attempt at this frequency.

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