Abstracts

An InP HEMT MMIC LNA with 7.2-dB gain at 190 GHz

R. Lai, M. Barsky, T. Huang, M. Sholley, H. Wang, Y.L. Kok, D.C. Streit, T. Block, P.H. Liu, T. Gaier and L. Samoska. "An InP HEMT MMIC LNA with 7.2-dB gain at 190 GHz." 1998 Microwave and Guided Wave Letters 8.11 (Nov. 1998 [MGWL]): 393-395.

We present the highest frequency performance of any solid-state monolithic microwave integrated circuit (MMIC) amplifier. A 2-stage 80-nm gate length InGaAs/InAlAs/InP HEMT MMIC balanced amplifier has a measured on-wafer peak gain of 7.2 dB at 190 GHz and greater than 5 dB gain from 170 to 194 GHz. The circuit was fabricated using a pseudomorphic 20-nm In/sub 0.65/Ga/sub 0.35/As channel HEMT structure grown on a 3-in InP substrate by MBE. Based on the measured circuit results, the intrinsic exhibits an F/sub max/ greater than 400 GHz.

❑ Return to main document.