Abstracts

A High-Performance Monolithic Q-Band InP-Based HEMT Low-Noise Amplifier

D.C.W. Lo, R. Lai, H. Wang, K.L. Tan, R.M. Dia, D.C. Streit, P.-H. Liu, J. Velebir, B. Allen and J. Berenz. "A High-Performance Monolithic Q-Band InP-Based HEMT Low-Noise Amplifier." 1993 Microwave and Guided Wave Letters 3.9 (Sep. 1993 [MGWL]): 299-301.

We report a Q-band two-stage MMIC low-noise amplifier based 0.1-µm pseudomorphic InAlAs-InGaAs-InP HEMT technology. The amplifier has achieved an average noise figure of 2.3 dB with associated gain of 25 dB over the band from 43 to 46 GHz. This noise figure is the best result ever reported for a monolithic amplifier at this frequency range. In addition, this InP-based amplifier consumes only 12 mW, which is at least three times lower than a GaAs-based counterpart, indicating that InP-based pseudomorphic HEMT's are well suited for very high density monolithic integration or an application where ultra low power consumption is required.

❑ Return to main document.