Abstracts

A Super Low-Noise 0.1 µm T-Gate InAlAs-InGaAs-InP HEMT

K.H.G. Duh, P.C. Chao, S.M.J. Liu, P. Ho, M.Y. Kao and J.M. Ballingall. "A Super Low-Noise 0.1 µm T-Gate InAlAs-InGaAs-InP HEMT." 1991 Microwave and Guided Wave Letters 1.5 (May 1991 [MGWL]): 114-116.

0.l µm T-gate InAIAs-InGaAs-InP HEMT's developed in our laboratory have exhibited state-of-the-art noise and gain performance well up to 100 GHz. Minimum noise figures of 0.8 and 1.2 dB with gains of 8.9 and 7.2 dB have been measured at 60 and 94 GHz, respectively. The W-band low-noise result is the best noise performance ever observed for any microwave transistors. A high performance W-Band three-stage amplifier has been built using these devices: noise figures between 3.2 dB-3.5 dB with gain of 17.5±0.4 dB from 91 to 96 GHz. 6 dB improvement in the 1 dB compression characteristic of the amplifier has been achieved with a GaAs pseudomorphic HEMT in the third stage.

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