Abstracts

Low-Frequency Noise Behavior of InP-Based HEMTs and its Connection with Phase Noise of Microwave Oscillators

R. Plana, O. Llopis, J. Verdier, L. Escotte, T. Parra, M. Gayral, A. Cappy and J. Graffeuil. "Low-Frequency Noise Behavior of InP-Based HEMTs and its Connection with Phase Noise of Microwave Oscillators." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 943-946.

This paper deals with the investigation of the low-frequency (L.F) noise properties of InP based HEMTs. We have found that a significant part of noise originates from the sample free surface and can be minimized by an appropriate silicon nitride passivation layer. Additional measurements suggest that l/f noise and lorentzian noise is generated in the AIInAs donor layer of the devices. A comparative study shows that our devices compare well with the state of the art of HEMTs devices in term of excess noise. In order to investigate the correlation between phase noise and L.F noise, both residual and oscillator phase noise measurements were carried out. The obtained results compare well with the state of the art in terms of residual and phase noise performance.

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