Abstracts

Noise Parameter Modeling of HEMTs with Resistor Temperature Noise Sources

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We present a new model to describe the millimeter wave noise performance of MESFETs and HEMTs. The model is used to extrapolate the noise parameters in frequency range and to describe the noise behaviour over a wide range of bias points. The model is based on three uncorrelated noise sources located at the intrinsic transistor, which are assumed to show white spectral behaviour. The parameters of the model are determined from noise parameter measurements. The noise parameter extraction technique is straightforward and based on circuit simulation programs. The model is applied to several pseudomorphic and conventional HEMT structures and results are compared with data obtained from other models.

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