Abstracts

AlGaAs/GaAs HBT model estimation through the generalized pencil-of-function method

B.L. Ooi, T.S. Zhou and P.S. Kooi. "AlGaAs/GaAs HBT model estimation through the generalized pencil-of-function method." 2001 Transactions on Microwave Theory and Techniques 49.7 (Jul. 2001 [T-MTT]): 1289-1294.

An efficient technique of extracting the small-signal model parameters of the heterojunction bipolar transistor (HBT) is proposed in this paper. The relation between the extrinsic and intrinsic model parameters, which can be employed to drastically reduce the search space, is studied in depth. For the first time, the HBT transistor is characterized by describing S-parameters with a set of complex exponentials using the generalized pencil-of-function method. The reliable initial values of some extrinsic elements can be determined from the set of complex exponentials. This novel approach can yield a good fit between measured and simulated S-parameters.

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