Abstracts

Fast and Efficient Extraction of HBT Model Parameters Using Multibias S-Parameter Sets (Short Papers)

S. Lee. "Fast and Efficient Extraction of HBT Model Parameters Using Multibias S-Parameter Sets (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.8 (Aug. 1996 [T-MTT]): 1499-1502.

Accurate parameter extraction technique has been presented for a small-signal equivalent circuit model of AlGaAs/GaAs HBT's. This technique makes use of multibias data optimization regarding two sets of S-parameters in the active mode and one in the cut-off mode, under the physics-based constrain that current-dependent elements in two active bias circuits are linked each other by the ratio of their currents. This multibias optimization as well as the constrain imposed on intrinsic parameters may reduce the degree of freedom of circuit variables and increase the probability of finding a global minimum result. As a result of this extraction, good agreement is seen between the circuit models and their measured S-parameters in the frequency range of 0.045 to 26.5 GHz.

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