Abstracts

A simplified large-signal HBT model for RF circuit design

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A simplified version of UCD HBT model has been presented in this paper. Two nonlinear resistors in UCD model are replaced by linear resistors. Three new nodes are added to the model which allows one to model the thermal interaction between emitter fingers in a multi-cell power HBT. A scaling factor is also included. All model parameters can be extracted by a group of standard DC and small-signal S-parameters measurements. Large-signal measurement results, such as power-sweep and intermodulation at several different bias points are used to verify the new model. The agreement between simulated and measured results is excellent.

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