Abstracts

Modeling the bias of the dependence of the base-collector capacitance of power heterojunction bipolar transistors

A. Samelis. "Modeling the bias of the dependence of the base-collector capacitance of power heterojunction bipolar transistors." 1999 Transactions on Microwave Theory and Techniques 47.5 (May 1999 [T-MTT]): 642-645.

This paper introduces a modified formulation for the minority charge of a recently published heterojunction bipolar transistor large-signal model that results in an accurate description of the base-collector capacitance bias dependence of power HBTs. The accompanying parameter extraction procedure determines the stored minority charge through simultaneous optimization of the cutoff frequency and the base-collector capacitance bias dependencies. The modified model results in accurate predictions of the HBT small- and large-signal characteristics over a wide range of bias, frequencies, and RF excitations.

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