Abstracts

Scalable GaInP/GaAs HBT large-signal model (Dec. 2000 [T-MTT])

M. Rudolph, R. Doerner, K. Beilenhoff and P. Heymann. "Scalable GaInP/GaAs HBT large-signal model (Dec. 2000 [T-MTT])." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2370-2376.

A scalable large-signal model for heterojunction bipolar transistors (HBTs) is presented in this paper. It allows exact modeling of all transistor parameters from single-finger elementary cells to multifinger power devices. The scaling rules are given in detail. The model includes a new collector description, which accounts for modulation of base-collector capacitance C/sub jc/ as well as for base and collector transit times due to temperature effects and high-current injection. The model is verified by comparison with measurements of GaInP/GaAs HBTs.

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