Abstracts

Nonlinear modeling of SiGe HBTs up to 50 GHz

C.N. Rheinfelder, F.J. Beißwanger and W. Heinrich. "Nonlinear modeling of SiGe HBTs up to 50 GHz." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part II [T-MTT] (1997 Symposium Issue)): 2503-2508.

A new large-signal model for SiGe heterostructure bipolar transistors (HBTs) is presented that includes nonideal leakage currents, Kirk-effect, and thermal behavior. The parameters are extracted from S-parameter measurements using a special procedure which is insensitive to tolerances in measurement data. The model yields excellent accuracy for dc and S parameters up to 50 GHz. It proved its usefulness in MMIC oscillator design at 26 and 38 GHz.

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