Abstracts

An extrinsic-inductance independent approach for direct extraction of HBT intrinsic circuit parameters (Dec. 2001 [T-MTT])

Tzyy-Sheng Horng, Jian-Ming Wu and Hui-Hsiang Huang. "An extrinsic-inductance independent approach for direct extraction of HBT intrinsic circuit parameters (Dec. 2001 [T-MTT])." 2001 Transactions on Microwave Theory and Techniques 49.12 (Dec. 2001 [T-MTT] (Special Issue on 2001 International Microwave Symposium)): 2300-2305.

A novel analytical procedure has been proposed for direct extraction of the intrinsic elements in a hybrid-/spl pi/ equivalent circuit of heterojunction bipolar transistors. This method differs from previous ones by formulating impedance-parameter based expressions that are exclusive of the extrinsic inductances associated with the base, emitter, and collector. It is therefore not susceptible to variation of the extrinsic reactances from DC to high frequencies and can lead to very accurate extraction of the intrinsic elements under different bias conditions. The distributed phenomena in the base region can be also characterized rigorously by exploiting the bias-independent features of the extrinsic elements that are extracted subsequently from knowledge of the intrinsic elements.

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