Abstracts

A self-consistent method for complete small-signal parameter extraction of InP-based heterojunction bipolar transistors (HBT's)

J.M.M. Rios, L.M. Lunardi, S. Chandrasekhar and Y. Miyamoto. "A self-consistent method for complete small-signal parameter extraction of InP-based heterojunction bipolar transistors (HBT's)." 1997 Transactions on Microwave Theory and Techniques 45.1 (Jan. 1997 [T-MTT]): 39-45.

A complete method for parameter extraction from small-signal measurements of InP-based heterojunction bipolar transistors (HBT's) is presented. Employing analytically derived equations, a numerical solution is sought for the best fit between the model and the measured data. Through parasitics extraction and an optimization process, a realistic model for a self-aligned HBT technology is obtained. The results of the generated s-parameters from the model for a 2/spl times/10 /spl mu/m/sup 2/ emitter area device are presented over a frequency range of 250 MHz-36 GHz with excellent agreement to the measured data.

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