Abstracts

Direct measurement of C/sub be/ and C/sub bc/ versus voltage for small HBT's with microwave s-parameters for scaled Gummel-Poon BJT models

C. Chang, P. Asbeck, P. Zampardi and K.C. Wang. "Direct measurement of C/sub be/ and C/sub bc/ versus voltage for small HBT's with microwave s-parameters for scaled Gummel-Poon BJT models." 1999 Transactions on Microwave Theory and Techniques 47.1 (Jan. 1999 [T-MTT]): 108-110.

A novel method for determining the junction capacitances versus voltage in heterojunction bipolar transistors (HBT's) using s-parameters at microwave frequencies is presented. This new technique has several advantages over traditional approaches, which include: (1) it profiles capacitance at greater forward bias; (2) it enables the direct measurement of minimum geometry transistors; (3) it allows for the accurate extraction of scaled HBT model parameters with emitter length; and (4) it results in improved pad parasitic deembedding for accurate modeling. Both the capacitance-voltage and large-signal HBT model results are shown.

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