Abstracts

Intermodulation in Heterojunction Bipolar Transistors (Mar. 1992 [T-MTT])

S.A. Maas, B.L. Nelson and D.L. Tait. "Intermodulation in Heterojunction Bipolar Transistors (Mar. 1992 [T-MTT])." 1992 Transactions on Microwave Theory and Techniques 40.3 (Mar. 1992 [T-MTT]): 442-448.

This paper examines the modeling of small-signal intermodulation distortion (IM) in heterojunction bipolar transistors (HBT's). We show that IM current generated in the exponential junction is partially cancelled by IM current generated in the junction capacitance, and that this phenomenon is largely responsible for the unusually good IM performance of these devices. Thus, a nonlinear model of the HBT must characterize both nonlinearities accurately. Finally we propose a nonlinear HBT model suitable for IM calculations, show how to measure its parameters, and verify its accuracy experimentally.

❑ Return to main document.