Abstracts

Waveform characterization and modeling of dynamic charge behavior of InGaP-GaAs HBTs

C.-J. Wei, S. Sprinkle, J.T. Hu, H.-C. Chung, B. Mitchell, P. Dicarlo and D. Bartle. "Waveform characterization and modeling of dynamic charge behavior of InGaP-GaAs HBTs." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 675-678 vol.2.

This study presents a novel time-domain characterization method for the first time, to reveal dynamic charge behavior of HBTs. The charge model plays an important role in power InGaP-GaAs HBT amplifiers designed with self-biasing. It is shown that charge-storage and extraction from the base of the HBT at a high-power drive cannot be described by the conventional quasi-static model. A new collector-base charge model is proposed to account for the time-response of the devices.

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