Abstracts

Large Signal Characterization and Numerical Modeling of the GaAs/AlGaAs HBT

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A numerical, model for GaAs/AIGaAs HBT's which includes velocity overshoot effects has been developed. Good agreement between measured and modeled small signal characteristics has been obtaimed. To understand the large signal performance of the HBT, the model has been, used to parameterize several typical device structures. At low frequencies, the parametrization method describes the large signal behavior of the HBT reasonably well up to moderate power levels. At higher frequencies, the accuracy of the method degrades. High frequency simulation results have been compared with measurements made with a 26.5 to 40 GHz active load pull system. Details of the measurement system, sources of error, and methods to reduce the error are discussed.

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