Abstracts

Large-Signal HBT Characterization and Modeling at Millimeter Wave Frequencies

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This paper presents a detailed large-signal analysis for the heterojunction bipolar transistor. Using a combination of computer models and corrected measurements, we have analyzed the bias and frequency dependence of the gain compression from 8 to 35 GHz for several HBT's. From 8 to 16 GHz, a commercial tuner system was used for making the measurements. However, beyond 26 GHz, an active load pull system was designed and constructed to circumvent problems created by component losses. Several comparisons between measured and modeled data are provided to illustrate the effectiveness of the characterization technique.

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