Abstracts

Direct Nonlinear Power MESFET Parameter Extraction and Consistent Modeling

A. Werthof, F. van Raay and G. Kompa. "Direct Nonlinear Power MESFET Parameter Extraction and Consistent Modeling." 1993 MTT-S International Microwave Symposium Digest 93.2 (1993 Vol. II [MWSYM]): 645-648.

A new method is developed which permits a direct non-linear FET parameter extraction of the gate source capacitor and diode, the drain current generator and the avalanche breakdown characteristics from large-signal waveform measurements. Differences between the DC and RF characteristics of the drain current generator and the breakdown characteristics are observed and interpreted. The measured FET output power and phase spectra are compared with the simulated results for different RF models of the nonlinear drain current generator. The proposed method is a valuable instrument for the analysis of the actually existing high frequency FET nonlinearities and can be helpful in the improvement large-signal FET models.

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