Abstracts

A symmetrical nonlinear HFET/MESFET model suitable for intermodulation analysis of amplifiers and resistive mixers

K. Yhland, N. Rorsman, M. Garcia and H.F. Merkel. "A symmetrical nonlinear HFET/MESFET model suitable for intermodulation analysis of amplifiers and resistive mixers." 2000 Transactions on Microwave Theory and Techniques 48.1 (Jan. 2000 [T-MTT]): 15-22.

We propose a new symmetrical heterojunction FET (HFET)/MESFET model to predict intermodulation distortion in amplifiers and resistive mixers. The model is symmetric. That is, drain and source of the intrinsic FET are interchangeable. This reflects the characteristics of most microwave FET's. The model has few fitting parameters and they are simple and straightforward to extract. The model was installed into Hewlett-Packard's harmonic-balance program microwave design system and verified by measurements. The verification shows excellent results for an MESFET and an HFET in both amplifier and resistive mixer configurations.

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