Abstracts

Characteristics and Modeling of Passive MESFETs for Non-Linear Control Applications

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GaAs MESFETs, operated as passive elements, have proven valuable as linearizers and limiters, as well as switches and attenuators. This work provides new information on the non-linear characteristics of these devices, and presents a two-dimensional lumped element model which accurately predicts device non-linearity over a wide range of power (-35 to >10 dBm) and frequency (.1 to> 18 GHz). The application of this model to the design of a TWTA linearizer is demonstrated. The model allows linearized TWTA transfer characteristics and C/I performance to be predicted using standard CAD software.

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