Abstracts

A phenomenologically based transient SPICE model for digitally modulated RF performance characteristics of GaAs MESFETs

R.E. Leoni, III, M.S. Shirokov, Jianwen Bao and J.C.M. Hwang. "A phenomenologically based transient SPICE model for digitally modulated RF performance characteristics of GaAs MESFETs." 2001 Transactions on Microwave Theory and Techniques 49.6 (Jun. 2001, Part II [T-MTT] (Special Issue on RF Power Amplification)): 1180-1186.

A phenomenologically based transient SPICE model was developed for GaAs MESFETs. The model accounts for both trapping and detrapping effects; hence, it can simultaneously simulate low-frequency dispersion and gate-lag characteristics. This is different from conventional models, which can simulate either effect, but not both. The present model has been used to describe both surface- and substrate-related trapping phenomena in epitaxial or ion-implanted MESFETs. The model was experimentally verified in terms of pulsed I-V characteristics and pulsed AC response.

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