Abstracts

A Large-Signal GaAs MESFET Model for Nonlinear Circuit Simulation

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A GaAs MESFET large-signal model suitable for use in time-domain circuit simulation CAD tools such as PSPICE has been developed. The improved model includes accurate analytic representation of the transconductance and conductance dependence upon the operating voltages. The new model gives better fit to GaAs MESFET I-V characteristics over a wider bias voltage range compared with the Curtice quadratic model. It also provides a simpler and more efficient parameter acquisition procedure in comparison to the TriQuint model. The procedure for extracting the model parameters using the bias dependence of the small-signal elements is also described.

❑ Return to main document.