Abstracts

Modeling and Design of GaAs MESFET Control Devices for Broad-Band Applications

N. Jain and R.J. Gutmann. "Modeling and Design of GaAs MESFET Control Devices for Broad-Band Applications." 1990 Transactions on Microwave Theory and Techniques 38.2 (Feb. 1990 [T-MTT]): 109-117.

In this paper, closed-form expressions are developed for the small-signal parameters of broad-band GaAs control MESFET's. The theoretical conducting-state resistance and nonconducting-state capacitance are compared with experimental data and demonstrate the usefulness of the models. Additionally, we considered the power handling capability of these devices and describe the various limitations in both conducting and nonconducting states. Our models show that self - aligned gate devices (SAGFET's) have a broad-band cutoff-frequency figure of merit as much as twice that of conventional MESFET's, although the voltage handling capability of the SAGFET is considerably inferior.

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