Abstracts

GaAs MESFET Physical Models for Process-Oriented Design

C.M. Snowden and R.R. Pantoja. "GaAs MESFET Physical Models for Process-Oriented Design." 1992 Transactions on Microwave Theory and Techniques 40.7 (Jul. 1992 [T-MTT] (Special Issue on Process-Oriented Microwave CAD and Modeling)): 1401-1409.

A detailed physical model is described which is used to accurately predict the dc and microwave performance of GaAs MESFET's. This model, which accounts for hot electron effects in sub-micron FET's, includes trapping phenomena and heating due to power dissipation. It is used to determine the optimal design for small-signal and power devices, including single- and double-recessed FET's. The spread in device characteristics can be directly related to the variation in device geometry and process parameters experienced in fabrication. The accuracy and flexibility of this approach is demonstrated by comparison with measured data for a variety of devices.

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