Abstracts

High-Frequency Equivalent Circuit of GaAs FET's for Large-Signal Applications

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The application of GaAs field effect transistors in digital circuits requires a valid description by an equivalent circuit at all possible gate and drain bias voltages for all frequencies from dc up to the GHz range. This paper discribes an equivalent circuit which takes into account the gate current of positively biased transistors as well as the symmetrical nature of the devices at low drain voltages. A fast method to determine the elements of the equivalent circuit from measured S parameters is presented, which delivers for the first time very good agreement for all operating points.

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