Abstracts

Self-Consistent GaAs FET Models for Amplifier Design and Device Diagnostics

W.R. Curtice and R.L. Camisa. "Self-Consistent GaAs FET Models for Amplifier Design and Device Diagnostics." 1984 Transactions on Microwave Theory and Techniques 32.12 (Dec. 1984 [T-MTT] (1984 Symposium Issue)): 1573-1578.

A procedure has been developed for producing accurate and unique small-signal equivalent circuit models for carrier-mounted GaAs FET's. The procedure utilizes zero drain-source bias S parmeter tests to determine accurate values of carrier parasitics, and dc measurements to evaluate the FET's gate, source, and drain resistances. Subsequent S-parameter measurements at full bias are then used to resolve the FET into an equivalent circuit model that has only 8 unknown elements out of a possible 16. A technique for evaluating the frequency range of accurate data is presented and the FET model shown is useful well above the maximum frequency of measurement. Examples of device diagnostics are presented for RCA flip-chip mounted GaAs FET's.

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