# Abstracts

## Analytical Method for Determining Equivalent Circuit Parameters of GaAs FET's

*S. Yanagawa, H. Ishihara and M. Ohtomo. "Analytical Method for Determining Equivalent Circuit Parameters of GaAs FET's." 1996 Transactions on Microwave Theory and Techniques 44.10 (Oct. 1996, Part I [T-MTT]): 1637-1641.*

An analytical method has been developed that gives a simple and practical means of extracting small-signal equivalent circuit parameters (ECP's) of GaAs FET's with negligibly small bond-pad capacitances. Only the S-parameter measurement of the pinched-off cold field-effect transistor (FET) is enough to determine the extrinsic FET ECP's. The intrinsic FET ECP's of a medium-power Ku-band GaAs FET chip with a total gate width of 800 µm have been analytically extracted for two types of eight-element intrinsic FET models; Model 1 (Curtice model) and Model 2 that differ in the control voltage (V/sub G/) definition. Model 2 with V/sub G/ defined across the gate-source capacitance is found more appropriate judging from the smaller frequency dependence of the ECP's and a better agreement between the calculated and measured S-parameters over 2-20 GHz.

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