Abstracts

Completely consistent 'no-charge' PHEMT model including DC/RF dispersion

C.J. Wei, Y.A. Tkachenko, J. Gering and D. Bartle. "Completely consistent 'no-charge' PHEMT model including DC/RF dispersion." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 2133-2136 vol.3.

A new large-signal PHEMT model based on independent fitting of DC currents, RF currents, and capacitances is developed. Unlike conventional models, it does not contain charge terms and therefore, avoids the problem of path-dependence in the charge-integration of capacitances. Similar consideration is given to the dispersion of conductances. Since each nonlinear element of the model corresponds to an element of the small-signal equivalent circuit, the model shows complete consistency over the bias range of the model's extraction. The model features accuracy. and simplicity of extraction. It is especially useful for PHEMTs or MESFETs with dispersion.

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