

Distributed Small Signal Model for Multi-Fingered GaAs PHEMT/MESFET Devices (1996 [MCS])

S.J. Nash, A. Platzker and W. Struble. "Distributed Small Signal Model for Multi-Fingered GaAs PHEMT/MESFET Devices (1996 [MCS])." 1996 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 98. (1996 [MCS]): 219-222.

A fully distributed equivalent circuit PHEMT and MESFET model is presented in closed form expressions for single finger end-fed FET geometry. The model includes self and mutual inductances and a new frequency dependent gate resistance. The model was used successfully to model multi-fingered devices which were subjected to equi-phase gate and drain excitations. Comparisons between measured data and model results are shown to be in excellent agreement for all S-parameters to 50GHz regardless of unit gate width. Scaling issues are also investigated for the new distributed model.

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