Abstracts

A novel approach for determining the GaAs MESFET small-signal equivalent-circuit elements

Ban-Leong Ooi, Mook-Seng Leong and Pang-Shyan Kooi. "A novel approach for determining the GaAs MESFET small-signal equivalent-circuit elements." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part I [T-MTT]): 2084-2088.

A simple way of extracting the small-signal equivalent circuit of a MESFET is proposed. The intrinsic elements and one of the extrinsic parameters are described as functions of the remaining extrinsic parameters. This drastically reduces the search space and the number of unknowns for optimization. It provides an important new insight into the correlation between the various extrinsic and intrinsic parameters. The method also reveals that there are two sets of solution for the parameters R/sub s/ and L/sub s/ which can fully satisfy the global solution. A numerical comparison in terms of both accuracy and speed between the proposed method and some conventional methods on a 400-/spl mu/m gatewidth GaAs MESFET is presented.

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