Abstracts

Bias-dependent linear scalable millimeter-wave FET model

This paper describes a measurement-based bias-dependent linear equivalent circuit field-effect-transistor/high-electron-mobility-transistor model that is accurate to at least 100 GHz and scalable up to 12 parallel gate fingers and from 100 to 1000 /spl mu/m total gate width. A new and accurate technique for extracting the Z-shell parameters has been developed, and the scaling rules for all the parasitic elements have been determined. The intrinsic equivalent circuit element values are determined at each bias point in V/sub ge/-V/sub ds/ space and interpolated by splines between points.

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