Abstracts

Transient RF Signals During the Switching of MESFET Control Devices

J. Nitirt, R.J. Gutmann and D.M. Johnson. "Transient RF Signals During the Switching of MESFET Control Devices." 1991 Transactions on Microwave Theory and Techniques 39.1 (Jan. 1991 [T-MTT]): 18-24.

An analytical model that predicts the intrinsic small-signal switching transients for MESFET control devices is developed. Theoretical results for video-breakthrough and small signal RF switching wave-forms are in excellent agreement with measurements on many devices. Although the intrinsic transients are less than a few nanoseconds in duration, FET material aspects (such as surface states) can induce much longer transients. The 10-90% switching time, which is dominated by intrinsic effects, can be lowered by reducing gate length and gate bias resistance (the latter is more feasible with recently reported diode-gate FET's).

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