Abstracts

Distortion in Broad-Band Gallium Arsenide MESFET Control and Switch Circuits

R.H. Caverly. "Distortion in Broad-Band Gallium Arsenide MESFET Control and Switch Circuits." 1991 Transactions on Microwave Theory and Techniques 39.4 (Apr. 1991 [T-MTT]): 713-717.

This paper will discuss the origins of MESFET distortion in passive control applications, such as single transistor switch and reflective attenuator circuits. The discussion is based on a lumped element equivalent circuit model and is limited to applications where the MESFET is operating in its conducting state. In switch circuits, the analysis indicates that distortion maybe reduced by the use of MESFET's with pinch off voltages in the 2-3 V range and with large open channel current capacities. In attenuators, the analysis shows extreme variations in the level of distortion over a relatively narrow range of attenuation levels. Distortion in the case of the reflective attenuator maybe reduced by the use of MESFET's with small open channel current capacities.

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