Abstracts

An accurate distributed small signal FET model for millimeter-wave applications

S. Masuda, T. Hirose and Y. Watanabe. "An accurate distributed small signal FET model for millimeter-wave applications." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 157-160 vol.1.

This paper presents an accurate distributed small signal FET model for W-band applications. Its major feature is that it accounts for the frequency dependent gate resistance as derived by considering the physical implications of the skin effect. We achieved an excellent agreement, within 0.5%, between measured and modeled values for all S-parameters up to 110 GHz. We also pointed out that the scaling of FET gate width would seriously affect the characteristics at higher frequencies. Our new model based on physical parameters exhibits practical scalability for unit gate width in the W-band.

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