Abstracts

Modeling the substrate effect in interconnect line characteristics of high-speed VLSI circuits

Jae-Kyung Wee, Young-June Park, Hong-Shick Min, Dae-Hyung Cho, Man-Ho Seung and Hun-Sug Park. "Modeling the substrate effect in interconnect line characteristics of high-speed VLSI circuits." 1998 Transactions on Microwave Theory and Techniques 46.10 (Oct. 1998, Part I [T-MTT]): 1436-1443.

A new analytic model for interconnect characteristics is proposed. The model includes the frequency-dependent distribution of the current on the interconnect lines and the substrate as the current path. The validity of the proposed model has been checked by a comparison with the measurement data and the numerical simulation. Through this work, it is found that the substrate return path must be considered for the accurate prediction of the high-frequency characteristics of interconnects.

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