Abstracts

Modeling and Analysis of Vias in Multilayered Integrated Circuits

Q. Gu, Y.E. Yang and M.A. Tassoudji. "Modeling and Analysis of Vias in Multilayered Integrated Circuits." 1993 Transactions on Microwave Theory and Techniques 41.2 (Feb. 1993 [T-MTT]): 206-214.

A method for modeling and analyzing vias in multi-layered integrated circuits is presented. The model of via structures is constructed based upon microwave network theory. The whole via structure is divided into cascaded subnetworks, including a vertical via passing through different layers and transitions from the microstrip line and/or striplines to the vertical via. The parameters of each subnetwork are obtained from electromagnetic field analysis. Numerical results in the frequency domain and the time domain are presented. Validation of the model has been carried out by both measurements and the FDTD modeling. Comparison to the measurements shows good agreement in the frequency range in which the components of experimental model are within specification, and the time domain simulation results also match well with the FDTD results.

❑ Return to main document.