Abstracts

Study of meander line delay in circuit boards

B.J. Rubin and B. Singh. "Study of meander line delay in circuit boards." 2000 Transactions on Microwave Theory and Techniques 48.9 (Sep. 2000 [T-MTT] (Mini-Special Issue on Research Reported at the 8th Topical Meeting on Electrical Performance of Electronic Packaging (EPEP) 1999)): 1452-1460.

A moment technique is used to determine the propagation delay in meander (serpentine) delay lines located in printed circuit boards of computer systems. The full three-dimensional effects of the meander structure including signal line thickness, right-angle bends, and skin-effect are included. A set of delay lines having different pitches are considered, and results are calculated and compared to those from two-dimensional simulations, other commercial codes, analytic formulas in the literature, and experimental measurements. Based on the consistency of the results and sensitivity analyses involving numerical gridding and frequency content, the delays calculated for meander lines situated in a homogeneous medium are accurate to better than a few tenths of a percent.

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