Abstracts

Efficient SPICE-compatible electromagnetic model of arbitrarily shaped integrated passive structure

R.F. Milsom. "Efficient SPICE-compatible electromagnetic model of arbitrarily shaped integrated passive structure." 1999 Transactions on Microwave Theory and Techniques 47.7 (Jul. 1999, Part I [T-MTT]): 1033-1044.

A numerically efficient SPICE-compatible electromagnetic model of an arbitrarily shaped integrated passive structure is presented. It is suitable for modeling structures with electrically small, but geometrically complex features. The original model, developed for printed circuit board layout simulation, is shown to be inadequate for integrated circuits, and also not directly usable for time-domain analysis. Here, it is adapted for structures fabricated in a silicon passive-integration process, and then extended to allow nonlinear time-domain analysis of active multichip modules that employ this technology as the substrate. Special emphasis is placed on characterizing losses. Comparison with measurement shows that the model is accurate.

❑ Return to main document.