Abstracts

An algorithm for calculating the coupling between MMICs with block dielectric coverings

Z. Wang and R.W. Jackson. "An algorithm for calculating the coupling between MMICs with block dielectric coverings." 2001 Transactions on Microwave Theory and Techniques 49.1 (Jan. 2001 [T-MTT] (Mini-Special Issue on 2000 Radio-Frequency Integrated Circuits (RFIC) Conference and Automatic Radio Frequency Techniques Group (ARFTG) Meeting)): 133-141.

In this paper, a computer-aided design (CAD) algorithm is presented for determining the coupling between sealant covered monolithic microwave integrated circuits (MMICs) in a multichip module. It is assumed that the MMICs are sufficiently separated that near-field coupling can be neglected and that TM/sub 0/ parallel-plate fields dominate. It is also assumed that the MMICs are each covered by a sealant of size commensurate with the MMIC. The technique presented is computationally simple, appropriate for use with layout-based circuit CAD software, and uses no numerical electromagnetics. It has been tested by comparison to full-wave electromagnetic simulation. In simple test cases, this technique showed over two orders of magnitude increase in speed. For larger problems, the increase in speed will be more pronounced.

❑ Return to main document.