Abstracts

Simple analytic formulas for the nonlocal field generated by circuit elements in multilayer structures

R.W. Jackson. "Simple analytic formulas for the nonlocal field generated by circuit elements in multilayer structures." 2000 Transactions on Microwave Theory and Techniques 48.11 (Nov. 2000, Part I [T-MTT] (Mini-Special Issue on RF/Microwave Applications in Medicine)): 1967-1971.

Simple analytic expressions are derived for the distant field generated by surface currents or via currents in a three-dielectric-layer parallel-plate structure. These expressions are useful for coupling calculations applied to microwave multichip assemblies. Their simplicity results from making low-frequency approximations; however, their accuracy is sufficient for coupling calculations up to millimeter-wave frequencies in typical structures. They are validated by comparison to numerically determined results. Examination of these equations reveals some general characteristics of coupling in multilayer configurations.

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