Abstracts

Evaluation of Quasi-Static Matrix Parameters for Multiconductor Transmission Lines Using Galerkin's Method

M.B. Bazdar, A.R. Djordjevic, R.F. Harrington and T.K. Sarkar. "Evaluation of Quasi-Static Matrix Parameters for Multiconductor Transmission Lines Using Galerkin's Method." 1994 Transactions on Microwave Theory and Techniques 42.7 (Jul. 1994, Part I [T-MTT]): 1223-1228.

A quasi-static method is described for calculating the excess inductance of via's. The considered via geometry contains connecting strips, pads on the via, and a finite ground plane thickness. An integral equation based on the scalar magnetic potential psi is solved. The inductance is found by calculating the magnetic flux through a cut introduced to define psi in an unequivocal way. The problem is generally solved for via through-holes; the grounded via--configuration is found as a limiting case. The influence of the geometric parameters on the via inductance is examined.

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