Abstracts

Scalar Magnetostatic Potential Approach to the Prediction of the Excess Inductance of Grounded Via's and Via's through a Hole in a Ground Plane (Jul. 1994, Part I [T-MTT])

P.A. Kok and D. De Zutter. "Scalar Magnetostatic Potential Approach to the Prediction of the Excess Inductance of Grounded Via's and Via's through a Hole in a Ground Plane (Jul. 1994, Part I [T-MTT])." 1994 Transactions on Microwave Theory and Techniques 42.7 (Jul. 1994, Part I [T-MTT]): 1229-1237.

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.

❑ Return to main document.