Analysis of Planar Disk Networks

The impedance matrix of a disk n-port is determined with fringing fields at the disk edge included in the analysis. The theory is valid for both stripline and rnicrostrip geometries and is also applicable to magnetic substrates. A simple quasi-static approximation to the disk capacitance is obtained. Applicability to numerical design is exemplified with the search for transmission zeros in a reciprocal 2 port. Experimental results are presented for the 1-port and 2-port disks.

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