Abstracts

Radiation from Via-Hole Grounds in Microstrip Lines

G. Cerri, M. Mongiardo and T. Rozzi. "Radiation from Via-Hole Grounds in Microstrip Lines." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 341-344.

The equivalent circuit of a via-hole is derived from a rigorous study of the complete spectrum of the microstrip line. Both reactive and resistive effects due to radiation and surface waves are taken into account. The element values of the equivalent circuit are obtained in simple form and are easy to evaluate by a desktop computer. With the proposed model the designer can easily take into account the high frequency behavior of the via hole discontinuity. This is important in high frequency MMICs applications, since it is found that radiation, while negligible at low frequencies, increases significantly at higher frequencies. Comparisons with measured data confirm the accuracy of the proposed approach.

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