Abstracts

Characteristics of Coupled Microstriplines

R. Garg and I.J. Bahl. "Characteristics of Coupled Microstriplines." 1979 Transactions on Microwave Theory and Techniques 27.7 (Jul. 1979 [T-MTT]): 700-705.

Semiempirical design equations for the even- and odd-mode characteristics of coupled microstriplines are presented. The characteristics include capacitance, effective dielectric constant, impedance, and losses. The coupled line capacitances are obtained by suitably dividing the total capacitance into parallel plate and fringing capacitances. These capacitances are then used to determine other characteristics. The accuracy of characteristic impedances obtained from these capacitances is better than 3 percent. The sensitivity of the characteristics of coupled microstriplines to the tolerance in parameters is described. It is observed that the effect of tolerances on the coupling constant of a directional coupler increases with the increase in the value of coupling constant. The effects of dispersion and the finite thickness of metal strips have been included. It is noticed that the dispersion is more pronounced for even mode, whereas finite strip thickness affects odd mode to larger extent.

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