Abstracts

Broadside, Edge-Coupled, Symmetric Strip Transmission Lines

S.K. Koul and B. Bhat. "Broadside, Edge-Coupled, Symmetric Strip Transmission Lines." 1982 Transactions on Microwave Theory and Techniques 30.11 (Nov. 1982 [T-MTT]): 1874-1880.

This paper analyzes the propagation parameters of the general, shielded, broadside, edge-coupled, symmetric strip transmission line using the transverse transmission line method combined with the variational technique in the space domain. A simple approximation to the charge distribution on the conducting strip is assumed. Extensive design data on the characteristic impedances, effective dielectric constants are generated for a) broadside, edge-coupled, homogeneous striplines, b) broadside, edge-coupled, microstrip lines, c) broadside, edge-coupled, microstrip lines with inverted dielectric. The effect of the shielding side walls on the characteristic impedances is investigated. The results presented should find application in the design, fabrication of directional couplers, filters having complex electric responses.

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