Abstracts

Analysis of Shielded Microstrip Lines with Arbitrary Metallization Cross Section Using a Vector Finite Element Method

M.S. Alam, K. Hirayama, Y. Hayashi and M. Koshiba. "Analysis of Shielded Microstrip Lines with Arbitrary Metallization Cross Section Using a Vector Finite Element Method." 1994 Transactions on Microwave Theory and Techniques 42.11 (Nov. 1994 [T-MTT]): 2112-2117.

The finite element method (FEM) with the high-order mixed-interpolation-type triangular elemnent is used to solve the problem of practical microstrip lines with arbitrary metalization cross section. Analyses are carried out to produce the frequency characteristics of propagation constant, characteristic impedance, and attenuation constant of shielded microstrip lines with rectangular, trapezoidal, and semi-trapezoidal strip cross sections. A comparison of the numerical results with those of the existing results shows good agreement and thus verifies the versatility of the FEM. Also, the numerical results show the effects of the metalization cross sections on the transmission properties and thus emphasize the importance of considering the practical microstrip configurations in the design of miniaturized MMICs.

❑ Return to main document.