Abstracts

Quasi-TEM Study of Microshield Lines with Practical Cavity Sidewall Profiles

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This paper presents the quasi-TEM characteristics of microshield lines with practical cavity sidewall profiles. A conformal mapping method is used for the derivation of the electrical parameters of the structures. In this study, numerical results for the characteristic impedances of air-suspended microshield lines with both positive and negative sidewall slopes are presented. Simple and explicit CAD-oriented expressions are proposed for the design and analysis of rectangular-shaped microshield line. Comparisons are made between the results obtained by these formulas and by a standard numerical technique. Furthermore, the sensitivities of the electrical parameters of a rectangular-shaped microshield line to an imperfect sidewall etching process, leading to nonvertical sidewall profiles, are also examined.

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