Abstracts

Attenuation of the Parasitic Modes in a Shielded Microstrip Line by Coating Resistive Films on the Substrate (Short Papers)

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In this paper, propagation characteristics of even-symmetric hybrid modes in a waveguide-shielded microstrip line with the presence of the resistive films affixed to the two sides of the center strip is investigated. The method of lines with modifications concerning the inhomogeneity of the surface between the air and substrate layers is used for analysis. After a validity check of the analysis by considering two special structures, i.e., a microstrip line (R/sub m/ = /spl infin/) and a coplanar waveguide (R/sub m/ = 0), the resistance R/sub m/ and the width W/sub m/ of the film are varied to see the influence on the propagation and attenuation constants of the dominant mode as well as the higher-order (parasitic) modes. Optimal combinations of the resistance and the width are found so that the resistive film has the largest attenuating effect on the higher-order modes but has no interference with the dominant one.

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