Abstracts

Equivalent Circuits for MIS Microstrip Discontinuities

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Metal-insulator-semiconductor (MIS) microstrip open-end and microstrip gap discontinuities are characterized by means of equivalent circuits consisting of capacitors and resistors. The circuit parameters of these components are obtained in terms of the complex excess charge densities existing on the conducting strips of the discontinuities. These complex excess charge densities are computed by applying Galerkin's method in the spectral domain. The numerical results obtained for the equivalent circuit parameters of the discontinuities exhibit important variations with frequency, which become specially pronounced in the transition region between the slow-wave mode and the dielectric mode of the MIS microstrip lines involved in the discontinuities.

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