Abstracts

Analysis of the Microstrip and the Electrooptic Light Modulator

M. Kobayashi. "Analysis of the Microstrip and the Electrooptic Light Modulator." 1978 Transactions on Microwave Theory and Techniques 26.2 (Feb. 1978 [T-MTT]): 119-126.

Green's function for examples with an isotropic media is obtained using the image-coefficient method. The method is based on the boundary conditions and the reciprocity relation. Using this Green's function and solving directly the charge distribution on the strip, the line capacitances per unit length of a microstrip and of an electrooptic light modulator are obtained. High accuracy of this method is demonstrated by comparing the present results with the results obtained using the conformal mapping and with other data appeared in the literature. The charge distributions are also illustrated. Of particular interest is the effective filling fraction of the dielectric material, which depends mainly on the shape ratio and only slightly on the relative dielectric constant. The effective filling fractions are tabulated for the microstrip with a homogeneous dielectric substrate.

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