Abstracts

A Numerical Calculation of the Capacitance for the Rectangular Coaxial Line with Offset Inner Conductor Having an Anisotropic Dielectric

H. Shibata, S. Minakawa and R. Terakado. "A Numerical Calculation of the Capacitance for the Rectangular Coaxial Line with Offset Inner Conductor Having an Anisotropic Dielectric." 1983 Transactions on Microwave Theory and Techniques 31.5 (May 1983 [T-MTT]): 385-391.

The capacitances of the rectangular coaxial lines with an offset zero-thickness inner conductor having a sapphire dielectric are presented by using an expanded charge simulation method, In order to apply the method to an anisotropic region, we propose an electric potential formula for a two-dimensional system consisting of a line charge and an infinite plate conductor which are arbitrarily situated in the region. The potential formula is anatyticafly derived by means of an affine transformation, a confomal mapping technique, and the method of images. The capacitance calculated using this method is in good agreement with those of other available methods.

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