Abstracts

Thickness Corrections for Capacitive Obstacles and Strip Conductors

S.B. Cohn. "Thickness Corrections for Capacitive Obstacles and Strip Conductors." 1960 Transactions on Microwave Theory and Techniques 8.6 (Nov. 1960 [T-MTT]): 638-644.

Capacitive thickness corrections are derived exactly for two basic geometries involving pairs of semi-infinite plates. In one arrangement the pair of plates are coplanar, while in the other they are parallel to each other. In each case the total capacitance per unit length between the pair of plates is infinite, but the incremental increase of capacitance when the thickness is increased from zero to a value t is finite. These capacitance increments are evaluated, and it is shown how they may be used as approximate thickness corrections in a great varity of more complicated geometries involving capacitive obstacles in waveguide, coaxial line, and artificial dielectric media. They may also be applied to coupled-strip-line conductors. As examples, the corrections are applied in detail to a waveguide iris, and to three useful coupled-strip-line cross sections.

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