Abstracts

Equivalent Circuit of a Narrow Axial Strip in Waveguide (Short Papers)

K. Chang and P.J. Khan. "Equivalent Circuit of a Narrow Axial Strip in Waveguide (Short Papers)." 1976 Transactions on Microwave Theory and Techniques 24.9 (Sep. 1976 [T-MTT]): 611-615.

A theoretical determination is made of the two-port equivalent circuit of a narrow strip located axially in a rectangular waveguide such that it extends partially or completely across the waveguide narrow dimension. The analysis is based upon derivation of a variational expression for a field quantity from which can be determined the reflection coefficient and the equivalent-circuit parameters. Experimental input susceptance values agree closely with the theory. The analysis shows that the T-equivalent network of a nontouching strip has a series-resonant shunt circuit. This element has application in filter and impedance-transforming networks, in planar circuits, and in fin-line structures.

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