

Abstracts

Analysis of a Narrow Capacitive Strip in Waveguide

K. Chang and P.J. Khan. "Analysis of a Narrow Capacitive Strip in Waveguide." 1974 Transactions on Microwave Theory and Techniques 22.5 (May 1974 [T-MTT]): 536-541.

A theoretical determination is made for the susceptance of a narrow conducting strip inserted vertically into a waveguide. The theory is based upon a variational form for the susceptance. A suitable current distribution along the strip is obtained for the variational equation, and is found to be similar to that determined from analysis of backscattering by a cylindrical obstacle irradiated from an incident plane wave. Accurate theoretical results may be obtained using a sinusoidal current distribution having a phase constant of $\pi/2d$, where d is the strip depth. Experimental results agree closely with the theory in the dominant-mode range and also at frequencies below cutoff.

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