Abstracts

An Approximate Variational Solution to the Step Discontinuity in Finline

C.A. Olley, T. Rozzi and C.M.D. Rycroft. "An Approximate Variational Solution to the Step Discontinuity in Finline." 1989 Transactions on Microwave Theory and Techniques 37.6 (Jun. 1989, Part I [T-MTT]): 977-983.

The step in finline is the basic building block of filters, transformers, and matching elements. We present a simplified, yet fairly accurate, treatment based on solving by variational methods the step in symmetric finned waveguide for the E and H formulations. Experiment is in good agreement with theoretical predictions for not too large steps and fairly good even for large steps. An "optimized" equivalent circuit with constant (lumped) components for commonly encountered steps is presented in a form directly usable by the designer.

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