Abstracts

Quarter-Wave Matching of Waveguide-to-Finline Transitions (Short Papers)

C.J. Verver and W.J.R. Hoefer. "Quarter-Wave Matching of Waveguide-to-Finline Transitions (Short Papers)." 1984 Transactions on Microwave Theory and Techniques 32.12 (Dec. 1984 [T-MTT] (1984 Symposium Issue)): 1645-1648.

This paper presents closed-form expressions for the design of a quarter-wave transition-matching transformer. This structure takes the form of a notch or protrusion cut in the finline substrate at the waveguide-to-finline interface. The dimensions of the transformer are calculated using a homogeneous waveguide model for the partially loaded sections. The characteristics of this model are found with perturbation theory. Several transformers were designed and measured. A 5-dB improvement in return loss over a full waveguide band is typical.

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