Abstracts

Synthesis of Optimum Finline Tapers Using Dispersion Formulas for Arbitrary Slot Widths and Locations

C. Schieblich, J.K. Piotrowski and J.H. Hinken. "Synthesis of Optimum Finline Tapers Using Dispersion Formulas for Arbitrary Slot Widths and Locations." 1984 Transactions on Microwave Theory and Techniques 32.12 (Dec. 1984 [T-MTT] (1984 Symposium Issue)): 1638-1645.

The theory of TEM matching sections has been modified so that it can be applied to finline tapers. A step-by-step procedure is given to calculate the taper contour for a given maximum VSWR. The taper is optimum in the sense that its length is the shortest possible for the required VSWR. To achieve fast convergence, a transversal resonance method was developed to calculate finline dispersion, which is valid for arbitrary slot widths and slot locations. The finline can be unilateral as well as bilateral, and the slot may be off-centered. The dispersion data are compared with values found in the literature, and the calculated taper performance with the authors' own measurements, both showing good agreement.

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