

Abstracts

Characteristic Impedance of Multifin Transmission Lines (Correspondence)

C.R. Boyd. "Characteristic Impedance of Multifin Transmission Lines (Correspondence)." 1967 Transactions on Microwave Theory and Techniques 15.8 (Aug. 1967 [T-MTT]): 487-488.

Several years ago, the author had occasion to investigate the characteristic impedance properties of a TEM transmission line of unusual cross section. Specifically, the cross section consisted of around outer conductor with a center conductor composed of a number of thin fins symmetrically positioned about the axis of the line. Examples of this general class of cross section are illustrated in Fig. 1 for the cases of two, three, four, and six fins. Solutions for the characteristic impedances of this type of configuration were obtained by an interesting series of conformal transformations that mapped the multifin line geometry into that of a symmetric strip transmission line. Since the characteristic impedance of the latter is well known, curves can readily be generated for the multifin line impedance.

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