Abstracts

Symmetrical and Asymmetrical Edge-Coupled-Line Impedance Transformers with a Prescribed Insertion Loss Design

A. Podcameni. "Symmetrical and Asymmetrical Edge-Coupled-Line Impedance Transformers with a Prescribed Insertion Loss Design." 1986 Transactions on Microwave Theory and Techniques 34.1 (Jan. 1986 [T-MTT]): 1-6.

Distributed element synthesis is used for obtaining edge-coupled-line impedance transformers. A gain factor is introduced in a characteristic transfer function representing a line and stub network. A redundant form of this network is identified with the equivalent circuit of the edge-coupled line pair. The transfer function is then used to synthesize Butterworth and Chebyshev coupled-line transformers. Design tables are presented for the symmetrical transformer. Transformation ratios different from unity are obtained only if the symmetrical structure is reflective. Asymmetrical transformers may exhibit nonunitary transformation ratios while being perfectly matched. Finally, applicability range is discussed.

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