

Abstracts

Simplified Equivalent Representations for Multicoupled Lines and Their Application to Filter Design

H. Kunieda. "Simplified Equivalent Representations for Multicoupled Lines and Their Application to Filter Design." 1980 Transactions on Microwave Theory and Techniques 28.8 (Aug. 1980 [T-MTT]): 852-857.

This paper presents simplified lumped-type equivalent representations, which are equivalent to multiwire lines in the vicinity of a quarter-wavelength frequency. It is believed that the derived representation can easily be applied to the analysis and the design of coupled-line filters and directional couplers of narrow bandwidths composed of quarter-wavelength strips. In this paper, the general design method for coupled-line bandpass filters is presented as one of the applications. A new bandpass filter is proposed and the design formulas of the filter are derived by using the design method. Furthermore the range of validity of the derived representations has been checked by showing numerical design examples. They have been found to give excellent results for coupled-line filters of bandwidths up to about 30 percent.

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