Abstracts

Direct-Coupled Cavity Filters for Wide and Narrow Bandwidths

L. Young. "Direct-Coupled Cavity Filters for Wide and Narrow Bandwidths." 1963 Transactions on Microwave Theory and Techniques 11.3 (May 1963 [T-MTT]): 162-178.

Direct-coupled resonator filters in transmission line are discussed. The resonators consist of sections of transmission line coupled either by series capacitances or shunt inductances. Over narrow frequency bands, such filters show characteristics similar to those of lumped-constant filters and their design is straightforward. The design of direct-coupled resonator filters over wide (as well as narrow) frequency bands is presented here using the quarter-wave transformer as a prototype circuit. Several numerical examples (with fractional bandwidths between 10 per cent and 85 per cent) are worked out to illustrate the method. It is shown that the response can be improved by optimizing the line impedances.

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