Abstracts

Synthesis of Filter-Limiters Using Ferrimagnetic Resonators

R.L. Comstock. "Synthesis of Filter-Limiters Using Ferrimagnetic Resonators." 1964 Transactions on Microwave Theory and Techniques 12.6 (Nov. 1964 [T-MTT]): 599-607.

A synthesis procedure is developed for microwave band-pass filters with the Chebyshev response using orthogonal circuit resonators coupled by a ferrimagnetic resonator. A stripline ferrimagnetic resonator filter is analyzed in detail. Equations and graphs are given which allow the selection of ferrimagnetic material and size of the ferrimagnetic sample necessary to achieve a desired bandwidth and insertion loss for a given pass-band response. The theoretical behavior of these circuits as microwave power limiters is discussed and it is shown that the ratio of the limiting threshold to the filter bandwidth is a constant depending only on the pass band response shape. Experimental confirmation of the design information discussed as well as some practical methods of varying the limiting threshold.

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