Abstracts

Matching into Band-Pass Transmission Structures

M.L. Hensel and E.O. Schulz-DuBois. "Matching into Band-Pass Transmission Structures." 1964 Transactions on Microwave Theory and Techniques 12.3 (May 1964 [T-MTT]): 309-315.

This paper describes a method for broad banding the matching transition from a low-dispersion transmission line to a high-dispersion iterated filter structure. A good match can be obtained over essentially the entire pass band of the filter structure. To accomplish this the band at the end of the structure is widened beyond both nominal cutoff frequencies. It is narrowed down to the regular structure bandwidth in a taper extending over a few filter elements. In the comb structure used for traveling wave masers, a return loss of 20 db (VSWR = 1.2) or better is realized over 90 per cent of the pass band with a taper including four comb fingers. Several examples of suitable taper designs are given. Each of these, however, requires empirical adjustment in order to produce an optimum match.

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