Abstracts

Synthesis of Commensurate Comb-Line Band-Pass Filters with Half-Length Capacitor Lines, and Comparison to Equal-Length and Lumped-Capacitor Cases

S.B. Cohn. "Synthesis of Commensurate Comb-Line Band-Pass Filters with Half-Length Capacitor Lines, and Comparison to Equal-Length and Lumped-Capacitor Cases." 1980 MTT-S International Microwave Symposium Digest 80.1 (1980 [MWSYM]): 135-137.

Comb-line band-pass filters have previously been synthesized as circuits having equal-length short-circuited and open-circuited TEM lines. Practical designs, however, usually use almost-lumped capacitors. This paper presents an exact synthesis method for commensurate circuits in which the capacitor lines are exactly half the length of the inductor lines. Computed examples show that the pass-band response and stop-band skirts agree much closer to that of lumped and almost-lumped capacitors than that of the equal-line-length case. Also, a remarkable improvement in spurious response degradation will occur. Implementation of the half-length design is explained and is rather simple to carry out.

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