Abstracts

Concerning the Use of High-Temperature Superconductivity in Planar Microwave Filters

G.L. Matthaei and G.L. Hey-Shipton. "Concerning the Use of High-Temperature Superconductivity in Planar Microwave Filters." 1994 Transactions on Microwave Theory and Techniques 42.7 (Jul. 1994, Part II [T-MTT] (Special Issue on Filters and Multiplexers)): 1287-1294.

The fundamentals of high-temperature superconductivity (HTS), as they apply to planar microwave filters, are briefly outlined. It is seen that some problems which are not usually prominent in the design of planar microwave filters come to the fore in the HTS case, and some of these problems are discussed. These problems include: preventing fields from impinging on normal conductor housings or radiating, reducing forward-coupling effects in order to permit the use of smaller substrates, coupling between the desired circuit mode and undesired housing waveguide-type modes, and estimating the maximum power that an HTS filter can handle without significant nonlinear effects.

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