Abstracts

Design of HTS, Lumped-Element, Manifold-Type Microwave Multiplexers

G.L. Matthaei, S.M. Rohlfing and R.J. Forse. "Design of HTS, Lumped-Element, Manifold-Type Microwave Multiplexers." 1996 Transactions on Microwave Theory and Techniques 44.7 (Jul. 1996, Part II [T-MTT] (Special Issue on the Microwave and Millimeter Wave Applications of High Temperature Superconductivity)): 1313-1321.

Manifold-type frequency multiplexers are especially useful when a sizable number of channels are required. However, they normally use interconnecting transmission lines that could result in an overall structure many wavelengths across. Herein we investigate the design of compact manifold multiplexers using lumped-element filters which are convenient for high temperature superconductor (HTS) realization, while the transmission lines are replaced with lumped-element equivalents. Design examples calculated for frequencies in the vicinity of 0.8 GHz yield element values which are quite feasible for realization in HTS microstrip circuits. The examples indicate that very compact multiplexers should be obtainable.

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