Abstracts

Multi-Layered Planar Filters Based on Aperture Coupled, Dual Mode Microstrip or Stripline Resonators

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High temperature superconductivity has created a great deal of interest in replacing dual mode cavity and dielectric resonator filters with printed circuits which are dramatically smaller, lighter, and less costly. Recently, a set of dual mode filters was introduced which facilitates the realization, in a planar configuration, of the elliptic function and self-equalized responses required for satellite applications. In this paper, a new class of planar filters is introduced that is based on a multi-layered stack of dual mode stripline or microstrip resonators coupled through irises. This new filter configuration offers extremely small size and mass and is ideally suited to fabrication using thin film superconductors. All filter types that are currently implemented using dual mode cavities or dielectric resonators can be realized using this new filter structure. Novel, multi-layer, planar filters are introduced, and experimental results are presented.

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