Abstracts

Generalized Dual-Plane Multicoupled Line Filters

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This paper describes the general realization of elliptic function narrow-bandpass filters constructed from two adjacent planes of microstrip quasi-TEM line resonators. This dual-plane configuration allows nonadjacent coupling to be realized through small slots between the planes. Alternate sign coupling is realized by the appropriate positioning of the slot along the resonator length. A model developed from Bethe's small-hole coupling theory is used to predict these couplings. Adjacent resonator couplings are modeled using a coupled-line analysis modified to characterize the coupling of an inhomogeneous medium. The filter synthesis technique previously developed for waveguide cavity filters can be directly applied in designing a dual-plane filter.

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