Abstracts

Mixed Modes Dielectric Resonator Filters

J.-F. Liang, K.A. Zaki and A.E. Atia. "Mixed Modes Dielectric Resonator Filters." 1994 Transactions on Microwave Theory and Techniques 42.12 (Dec. 1994, Part II [T-MTT] (1994 Symposium Issue)): 2449-2454.

A new configuration of dielectric loaded cavity filters is presented. The filter combines the superior spurious free performance of TE/sub 01/ mode ring dieIectric resonators with the advantage of HE/sub 11/ dual-mode dielectric loading. Resonant frequency, field distributions and unloaded Q of each cavity are computed by rigorous mode-matching technique. The fields are used to compute the coupling between two similar cavities by small aperture approximation based on formulae modified by Levy, which are extended to the cases of dissimilar cavities. Design aspects of the filter are discussed. This filter is used to construct an L-band triplexer. Excellent experimental results verify the theory and show the advantage of this type of filter.

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