Abstracts

Dual-mode conductor-loaded cavity filters

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A new class of dual-mode filters consisting of cylindrical-waveguide cavities loaded with perfect conducting cylindrical disks is presented. Resonant frequencies, fields, and the unloaded Q of the resonator are rigorously analyzed by mode-matching techniques. A complete set of data for filter design is given. The results show that the resonator has high unloaded and and good spurious performance. The accuracy of the computed results are confirmed by comparison with the experimental data. An eight-pole elliptic-function filter for PCS applications was designed, constructed, and tested; excellent frequency response of the filter with wide spurious-free performance was obtained, which verifies the theory.

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