Abstracts

A New Evanescent-Mode Filter for Densely Packaged Waveguide Applications

V.A. Labay and J. Bornemann. "A New Evanescent-Mode Filter for Densely Packaged Waveguide Applications." 1992 MTT-S International Microwave Symposium Digest 92.2 (1992 Vol. II [MWSYM]): 901-904.

A novel evanescent-mode filter structure based on T-septum waveguide technology is presented for applications in extremely compact designs. The excellent characteristics of the T-septum waveguide are utilized to significantly reduce the resonator cutoff frequency compared with standard ridge waveguide designs. This allows the evanescent-mode guide to become smaller in cross-section, hence considerably reducing the overall length of the filter. The computer-aided design uses a full-wave mode-matching technique which takes into account higher-order mode coupling at all discontinuities involved. Design data are given for X- and Ka-band. The method is verified by measurements.The manufactured 10GHz prototype measures only 18.4 mm in length.

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