Abstracts

Circular TE/sub 011/Mode, Trapped-Mode Band-Pass Filters (Sep. 1965 [T-MTT])

G.L. Matthaei and D.B. Weller. "Circular TE/sub 011/Mode, Trapped-Mode Band-Pass Filters (Sep. 1965 [T-MTT])." 1965 Transactions on Microwave Theory and Techniques 13.5 (Sep. 1965 [T-MTT]): 581-589.

Band-pass filters are described which utilize a novel type of resonator which has been named a "'trapped-mode resonator." This type of resonator uses a structure which is open on its sides so that energy in all but a single desired mode tends to radiate out to energy-absorbing material. However, energy in the desired resonator mode is trapped within the structure and a high-Q resonance occurs, such as is typical of conventional microwave cavity resonators. The use of resonators of this type makes possible the design of band-pass microwave filters which have a pass band similar to that of other multiresonator microwave filters, but without the many unwanted pass bands which are typical of microwave filters. The particular type of filter discussed utilizes the circular TE/sub 011/ mode. Several experimental filter structures of this type were constructed, and the results of laboratory tests are described.

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