Abstracts

Magnetically-Tunable Microwave Filters Using Single-Crystal Yttrium-Iron-Garnet Resonators

P.S. Carter, Jr.. "Magnetically-Tunable Microwave Filters Using Single-Crystal Yttrium-Iron-Garnet Resonators." 1961 Transactions on Microwave Theory and Techniques 9.3 (May 1961 [T-MTT]): 252-260.

A new type of magnetically-tunable band-pass microwave filter that makes use of ferromagnetic resonance in single-crystal yttrium iron garnet is presented. The 3-db bandwidth can be adjusted from about 6 Mc to 100 Mc at X-band, and the center frequency can be tuned over a wide range of frequencies, by means of a varying dc field. A theoretical analysis of the operation and behavior of this type of filter is presented. Descriptions of single-resonator and two-resonator filters which can be tuned over the X-band frequency range are given and experimental data are presented showing their tuning range, insertion loss, and bandwidth.

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