

Magnetostatic Wave Resonators Using Microstrip Disk

M. Tsutsumi and T. Umegaki. "Magnetostatic Wave Resonators Using Microstrip Disk." 1992 Transactions on Microwave Theory and Techniques 40.5 (May 1992 [T-MTT]): 933-937.

We propose a magnetostatic wave resonator using yttrium iron garnet film with a microstrip disk. Assuming a magnetic wall at the edge of the disk, a dispersion relation is derived and solved numerically to obtain the resonant frequency. Resonant mode charts are given for various parameters of resonator. The quality factor is also given as a function of the resonator dimensions. Resonant characteristics are confirmed experimentally using 40 μ m and 13.5 μ m thick YIG films with 5 mm diameter strip disk at S band.

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