

Abstracts

Approximate Approach to the Design of Shielded Dielectric Disk Resonators with Whispering-Gallery Modes

E.N. Ivanov, D.G. Blair and V.I. Kalinichev. "Approximate Approach to the Design of Shielded Dielectric Disk Resonators with Whispering-Gallery Modes." 1993 Transactions on Microwave Theory and Techniques 41.4 (Apr. 1993 [T-MTT]): 632-638.

An analytical method is presented for calculating the resonant frequency and the Q-factor of shielded dielectric disk resonators excited in whispering-gallery modes. The method is based on a single-mode representation of electromagnetic fields in partial regions of the resonator. For high order modes with high degree of energy concentration in the dielectric this method gives a good agreement with experimental results obtained for different sapphire disks at both room temperature and cryogenic temperatures.

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