Abstracts

The Magnetic-Dipole Resonances of Ring Resonators of very High Permittivity

M. Verplanken and J. Van Bladel. "The Magnetic-Dipole Resonances of Ring Resonators of very High Permittivity." 1979 Transactions on Microwave Theory and Techniques 27.4 (Apr. 1979 [T-MTT]): 328-333.

The lowest magnetic-dipole mode with symmetry of revolution is investigated in a coaxial ring resonator of height L, inner radius b, and outer radius a. Theoretical data are given about the Q of the mode, the eigen magnetic dipole at resonance, and the structure of the fields (electric and magnetic) inside and outside the resonator. The variables are the dielectric constant epsilon/sub r/ = N² and the dimensionless ratios b/a and L/2a. The data are valid in the limit of very high epsilon/sub r/. Experiments show them to be already useful at epsilon/sub r/ = 35.

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