Abstracts

Measurements of All Complex Permeability Tensor Components and the Effective Line Widths of Microwave Ferrites Using Dielectric Ring Resonators

J. Krupka. "Measurements of All Complex Permeability Tensor Components and the Effective Line Widths of Microwave Ferrites Using Dielectric Ring Resonators." 1991 Transactions on Microwave Theory and Techniques 39.7 (Jul. 1991 [T-MTT]): 1148-1157.

A method of measuring all the complex permeability tensor components of microwave ferrites using a single cylindrical ferrite sample is described. Two dielectric ring resonators having the same height and internal diameter but different external diameters, operating on HE/sup ±//sub 111/ and H/sub 011/ modes respectively, are applied for these measurements. Permeability tensor components are computed from the measured resonant frequencies and Q factors of these resonators with and without the ferrite sample. Computations are based on the exact eigenvalue equations for these modes. Measurements of all permeability tensor components versus static magnetic field intensity, performed for different ferrite materials, generally confirm results obtained by earlier researchers but they also contain certain new aspects concerning relations between particular permeability tensor components below saturation.

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