Abstracts

Computer Optimization of E-Plane Resonance Isolators

M.C. Decreton, E.F. Loute, A.S. Vander Vorst and F.E. Gardiol. "Computer Optimization of E-Plane Resonance Isolators." 1971 Transactions on Microwave Theory and Techniques 19.3 (Mar. 1971 [T-MTT]): 322-331.

A method has been developed to optimize the geometry of the structure and the permittivity of the dielectric material used in E-plane isolators, for an arbitrary ferrite material. The structure is first computer analyzed, using an exact analytical approach. The minimum isolation and the maximum forward attenuation per unit length are calculated within a specified frequency band. The objective function, defined as the ratio minimum isolation per maximum forward losses, is then maximized. Several optimization procedures are compared and tested; the optimum gradient method was found to be well suited to this problem. Various optimized results are presented.

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