Abstracts

Optimum Filling of Ferrite Phase Shifters of Uniform Dielectric Constant

H.C. Bell, Jr. and C.R. Boyd, Jr.. "Optimum Filling of Ferrite Phase Shifters of Uniform Dielectric Constant." 1974 Transactions on Microwave Theory and Techniques 22.4 (Apr. 1974 [T-MTT]): 360-364.

Approximation methods are used to calculate the phase shift and loss for phase shifters containing ferrite and dielectric, with a uniform dielectric constant throughout the waveguide. If the RF magnetic loss in the ferrite is a significant fraction of the total loss, the overall performance of a phase shifter that is partially filled with ferrite may be superior to the fully filled case. Theoretical results relating performance to the amount of partial filling are presented for Faraday rotators in square and circular waveguides and a twin-slab phase shifter. Experimental results were obtained for a circular Faraday rotator.

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