Abstracts

Nonreciprocal Delay Line for Use in S Band Tubes

R.J. Tiernan and E. Schlomann. "Nonreciprocal Delay Line for Use in S Band Tubes." 1975 Transactions on Microwave Theory and Techniques 23.10 (Oct. 1975 [T-MTT]): 813-818.

In an effort to make ferrites available for broad-band resonance isolator applications in high-power mirowave tubes, seven lithium ferrites and four nonlithium spinel ferrites were tested for resonance-loss behavior near an S band (2.0-4.0-GHz) linear helix. The observed behavior, i.e., the dependence of the absorption on the dimensions of the ferrites, can be attributed to excitation of surface magnetostatic modes. Using the results of the Damon-Eshbach theory for surface magnetostatic modes in semi-infinite slabs, resonance frequency and surface-wave attenuation factors were numerically calculated as a function of the propagation coefficient and the ratio of magnetization to internal field.

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