Abstracts

Microwave Properties of Partially Magnetized Ferrites

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With the surge of design activity of ferrite components for phased array radars, a knowledge of the microwave characteristics of partially magnetized ferrites is a very useful asset. Phase shifters, circulators, and switches are most economically designed if the biasing field can be kept small. A preferred configuration consists of the microwave ferrite being latched into a major or minor loop (flux drive) remanent state. For such operation the internal dc magnetic field is quite small (the order of the coercive force). Anisotropy and demagnetizing effects due to sample shape and local inhomogeneities such as pores and second phase prevent the material from being completely magnetized, and hence the sample is in a partially magnetized state.

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