Abstracts

Quality of a Ferroelectric Material

S.N. Das. "Quality of a Ferroelectric Material." 1964 Transactions on Microwave Theory and Techniques 12.4 (Jul. 1964 [T-MTT]): 440-445.

The paper describes a simple method of measuring the nonlinear properties of a ferroelectric material at microwave frequencies. A composition of commercial polycrystalline barium titanate, of stated Curie temperature of 20°C, and of polythene powder was investigated. The incremental permittivity of the specimen at both increasing and decreasing biasing field was observed at X, C and S band. The effective dielectric constant of the specimen, for the same biasing field, was lower for increasing field, contrary to the theoretical analysis. Diamond's model of polycrystalline ferroelectric materials provides a qualitative explanation for the observed anomalous behavior of the specimens. An experimental arrangement for the observation of the microwave equivalent of a low-frequency ferroelectric loop is suggested.

❑ Return to main document.