Abstracts

Nonlinearity of superconducting transmission line and microstrip resonator

O.G. Vendik, I.B. Vendik and T.B. Samoilova. "Nonlinearity of superconducting transmission line and microstrip resonator." 1997 Transactions on Microwave Theory and Techniques 45.2 (Feb. 1997 [T-MTT]): 173-178.

The simplest model of nonlinear response of a superconducting thin film is used for modeling the nonlinear phenomena in a superconducting transmission line and a microstrip resonator. The specified characteristic power of the transmission line is suggested to use as a fitting parameter for numerical description of the microstrip line nonlinearity at microwaves. Quantitative agreement of simulated and experimental data has been obtained for the incident power dependent transmission coefficient of a microstrip line section and a high quality microstrip resonator. Numerical results have also been obtained for the power of the third harmonic radiated from the nonlinear resonator.

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