Abstracts

Planar Meanderline Ferrite Phase Shifters with Multi-Layer Ferrite/Dielectric Imbedding

E.R.B. Hansson. "Planar Meanderline Ferrite Phase Shifters with Multi-Layer Ferrite/Dielectric Imbedding." 1980 MTT-S International Microwave Symposium Digest 80.1 (1980 [MWSYM]): 232-234.

This paper presents methods for rapid analysis of coupled lines in composite ferrite/dielectric materials. New expessions are given for the calculation of effective dieelectric constants showing a linear relationship with respect to the dielectric constants of the materials in the structure. A similar linearity is shown to characterize the effective relative permeabilities. Conditions for matching of meanderlines are presented which are used in computer programs for the design of meanderline ferrite phase shifters. Measured characteristics of a phase shifter with a four layer ferrite/dielectric imbedding are presented. The phase shifter is well matched in the vicinity of the frequency for maximum differential phase shift. An optimum figure of merit ranging from 340 to 390°/dB for various magnetizations was obtained.

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