Abstracts

Nonreciprocity in Dielectric Loaded TEM Mode Transmission Lines

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An analysis is presented of partially dielectric loaded strip transmission line from the point of view of ferrite applications. It is shown that the microwave magnetic field is elliptically polarized both at the dielectric surface and within the dielectric. The degree of elliptical polarization is expressed analytically as a function of the dielectric constant, the degree of dielectric loading, and the frequency. For specific values of dielectric constant and loading, a high degree of circularity may be made to exist at the dielectric surface over extremely broad frequency bands. Experimental data are presented which are in accord with the theoretical predictions.

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