Abstracts

Application of Slot Line to Miniature Ferrite Devices

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Slot transmission line was introduced by S. B. Cohn in 1968 as an alternative transmission line for microminiature components. Slot line is potentially advantageous when compared to other planar transmission lines for applications requiring regions of circularly polarized magnetic field and/or shunt mounted elements. The line consists of two conductors separated by a gap on one side of a dielectric substrate. The dominant mode is a TE mode as shown in Figure 1. This mode resembles the dominant mode of rectangular waveguide and provides natural regions of circularly polarized magnetic field. Slot line applications will include ferrite phasers, circulators and isolators, diode switches and phasers, and filters. Combined microstrip and slot line circuitry seem to offer new possibilities for systems with the advantage of coupling easily through the substrate from one medium to the other.

❑ Return to main document.