Abstracts

Slot Line Between Oppositely-Magnetized Ferrite Layers for Broadband, High-Nonreciprocity Phase Shifters

C.J. Koza and E.-B. El-Sharawy. "Slot Line Between Oppositely-Magnetized Ferrite Layers for Broadband, High-Nonreciprocity Phase Shifters." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 953-956.

A novel phase shifting structure that exhibits both broadband operation and high nonreciprocity is presented. This structure is comprised of a slot line between two oppositely-magnetized ferrite substrates. A full-wave, spectral-domain analysis is used, where Green's functions are formulated using a transmission matrix approach. By eliminating the use of relatively thick high-dielectric substrates, a bandwidth of 3:1 and a differential phase of 50°/cm are feasible. The addition of thin layers of high-dielectric material is shown to increase the differential phase to over 100°/cm without significantly reducing the bandwidth.

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