Abstracts

A New Isolator Using a Solid-State Plasma Waveguide (Correspondence)

M. Toda. "A New Isolator Using a Solid-State Plasma Waveguide (Correspondence)." 1965 Transactions on Microwave Theory and Techniques 13.1 (Jan. 1965 [T-MTT]): 126-127.

Nonreciprocal microwave circuits involving a tensor permeability were considered by Hogan in 1952 and many examples, such as isolators, circulators, modulators, switches, and phase shifters, have been developed. A gaseous plasma waveguide displays similar nonreciprocal properties, because of the plasma tensor permittivity in a magnetic field. The Faraday rotation and different losses for right-hand-polarized and oppositely-polarized waves lead to characteristics essentially similar to those of ferrites.

❑ Return to main document.