Abstracts

Quasi-Optical Ferrite Reflection Circulator

B. Lax, J.A. Weiss, N.W. Harris and G.F. Dionne. "Quasi-Optical Ferrite Reflection Circulator." 1993 Transactions on Microwave Theory and Techniques 41.11 (Dec. 1993 [T-MTT] (1993 Symposium Issue)): 2190-2197.

A quasi-optical Faraday rotation circulator utilizing a ferrite for microwave or millimeter-wave radiation is investigated experimentally and analyzed theoretically by a matrix formalism. Both reflection and transmission configurations at oblique incidence are examined. Numerical results in the band centered at 35 GHz are evaluated. Theory and experiment are compared over a 10-20% band. Notwithstanding the complexities resulting from oblique incidence, we find bandwidth, low loss, and isolation comparable to those of the transmission-type version now in system deployment. The principal advantage of the reflection configuration lies in the greater heat dissipation capability.

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