Abstracts

High-Power Ferrite Circulators

P.A. Rizzi. "High-Power Ferrite Circulators." 1957 Transactions on Microwave Theory and Techniques 5.4 (Oct. 1957 [T-MTT]): 230-237.

The Faraday rotation and insertion loss of various ferrite-loaded waveguide structures have been studied in order to determine their power-handling capacities. A method of measuring insertion loss to within ±0.05 db is described. Two figures of merit containing this information are defied for the various configurations. The first, defined as the rotation per attenuation, indicates for a given value of rotation the efficiency of power transmission through the device, while the second, defined as the dissipative area per power loss, indicates the power handling capacity of the structure. By utilizing this information, the author has described an X-band ferrite circulator which is capable of handling an average power of 1000 watts. In addition, the design of a 2000-watt gyrator type circulator is indicated.

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