Abstracts

A Latching Ring-and-Post Ferrite Waveguide Circulator

W.W. Siekanowicz, R.W. Paglione and T.E. Walsh. "A Latching Ring-and-Post Ferrite Waveguide Circulator." 1970 Transactions on Microwave Theory and Techniques 18.4 (Apr. 1970 [T-MTT]): 212-216.

This paper presents the performance and normalized design parameters for a latching ring-and-post ferrite circulator in waveguide. A C-band circulator has provided an insertion loss of 0.35 dB and a 20-dB isolation bandwidth of 17 percent. When the circulator was matched for higher maximum isolation (50 dB) but narrower bandwidth (10 percent) at room temperature, the 20-dB isolation bandwidth was 7.8 percent across the -40° to +75°C temperature range. Low-loss operation was obtained at pulsed powers up to 7.5 kilowatts, and at least 20 dB of isolation was maintained up to 100 kilowatts. This performance, in conjunction with a switching speed of a fraction of a microsecond, permits the use of these circulators for transmitting-receiving functions in high-reliability radars.

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