Abstracts

An Improved E-Plane Waveguide Circulator

M. Omori. "An Improved E-Plane Waveguide Circulator." 1968 G-MTT International Microwave Symposium Digest and Technical Program 68.1 (1968 [MWSYM]): 228-236.

This report describes the design and performance of an improved E-plane waveguide circulator. Although the E-plane circulator has the advantages of higher power operation and more compactness, it has received much less attention than its H-plane counterpart. This has probably been due to the difficulty of achieving broadband performance and the lack of adequate design information. It is proposed in this report that best performance occurs when the dimensions of the ferrite cylinder are adequate to support the fundamental cylindrical dielectric resonator mode. The junction dimensions are reduced to enhance the coupling of the incident energy to this dielectric resonator. At the junction, a novel approach is employed to convert the absorption type cavity to a transmission type. Reduced height transformers match the junction to the standard waveguide ports.

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