Abstracts

A Novel Waveguide Y-Junction Circulator with a Ferrite Sphere for Millimeter Waves (Short Papers)

E.K.N. Yung, D.G. Zhang and R.S.K. Wong. "A Novel Waveguide Y-Junction Circulator with a Ferrite Sphere for Millimeter Waves (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.3 (Mar. 1996 [T-MTT]): 454-456.

A novel waveguide Y-junction circulator with a ferrite sphere is developed for uses at millimeter-wave frequencies. Sphere is preferred because the production cost of a pertinent circulator is lower. Performance of the new circulator is comparable to the conventional one with a cylindrical ferrite. A simple formula is derived for determining the center frequency of a circulator. Good agreement between analytical results and measurements is observed. An extremely fast method is developed to analyze the circulator. Various properties of the circulator can be predicted with reasonable accuracy.

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