Abstracts

Characteristics of Circulators Using Planar Triangular and Disk Resonators Symmetrically Loaded with Magnetic Ridges

J. Helszajn, R.D. Baars and W.T. Nisbet. "Characteristics of Circulators Using Planar Triangular and Disk Resonators Symmetrically Loaded with Magnetic Ridges." 1980 Transactions on Microwave Theory and Techniques 28.6 (Jun. 1980 [T-MTT]): 616-621.

Planar triangular and disk resonators may be tuned by loading them with magnetic wall ridges. This method of tuning resonators, particulary attractive at UHF due to the reduction in physical size, may be understood by invoking the duality between a planar circuit with magnetic walls and the dual waveguide problem with three metal ridges and electric walls. Measurements on stripline circulators using this type of resonator indicate good agreement between theory and experiment for both disk and triangular planar geometries. The loaded Q-factor of circulators using such circuits has been formulated using perturbation theory and found to be in good accord with experiment. Thus the paper gives a complete description of junction circulators using disk or triangular resonators loaded with magnetic wall ridges.

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