Abstracts

Broadband Strip-Transmission Line Y-Junction Circulators

J.W. Simon. "Broadband Strip-Transmission Line Y-Junction Circulators." 1965 Transactions on Microwave Theory and Techniques 13.3 (May 1965 [T-MTT]): 335-345.

Broadband circulators have been developed which operate below resonance and cover octave bandwidths in the frequency regions 0.6-8.0 Gc. The interrelationship of voltage standing-wave ratio (VSWR) and isolation between various ports is established without imposing symmetry. The fact that building a three-port circulator is essentially a matching process is used as a basis for a successful experimental development procedure. Empirically determined criteria for broadbanding are reported with particular emphasis placed on the discussion of optimizing saturation magnetization, linewidth, strip-transmission line parameters, and magnetic biasing field. The importance of having a ferrite with low dielectric loss tangent is also discussed. The empirical data are considered in light of theoretical work done in this laboratory and in light of the papers by Bosma.

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