Abstracts

Theoretical Aspects of 3-Port Junction Circulators

Analysis of scattering matrices of lossless 3-port junctions with 3-fold rotational symmetry shows that circulators are obtained when the eigenvalues, which have unit magnitude, make angles of 120 degrees. Zero reflection, zero insertion loss, and infinite isolation coincide at the same values of device parameters such as frequency, saturation magnetization, and size of ferrite.

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