Abstracts

A Method of Producing Broad-Band Circular Polarization Employing an Anisotropic Dielectric

H.S. Kirschbaum and S. Chen. "A Method of Producing Broad-Band Circular Polarization Employing an Anisotropic Dielectric." 1957 Transactions on Microwave Theory and Techniques 5.3 (Jul. 1957 [T-MTT]): 199-203.

A procedure is described whereby it is possible to design circular polarizers for both waveguides and in window form to be used over a broad band of frequencies. The difference in phase constants for two mutually orthogonal E fields while propagating in an anisotropic dielectric is combined with the effect due to guide wall spacing to obtain a reasonably constant differential phase constant for the two fields over a broad frequency band. By properly choosing the length of the anisotropic dielectric in the direction of propagation, and orienting this dielectric properly with respect to an incident linearily-polarized wave, the transmitted wave is circularly polarized over a correspondingly broad band of frequencies.

❑ Return to main document.