Abstracts

A Novel Aperture-Isolation Circuit for Use in Phased Array Systems

A.W. Jacomb-Hood, M. Booth, D.E. Houston and T.S. Alcorn. "A Novel Aperture-Isolation Circuit for Use in Phased Array Systems." 1990 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 90.1 (1990 [MCS]): 51-54.

A novel electronically controlled matching network has been demonstrated as an aperture-isolation circuit. This approach offers smaller size, lower weight, and potentially lower cost than circulators. The demonstrated circuit has comparable loss to a circulator, however in certain applications (e.g., lower frequency of operation) and with improved devices, cited below, it is anticipated that this approach will offer lower insertion loss than circulators. MMIC-compatible GaAs PIN diodes have demonstrated a cutoff frequency of 2.4 THz and a breakdown voltage of 95 V.

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