Abstracts

A 50 MHz-30 GHz Broadband Co-Planar Waveguide SPDT PIN Diode Switch with 45-dB Isolation

K.W. Kobayashi, L. Tran, A.K. Oki and D.C. Streit. "A 50 MHz-30 GHz Broadband Co-Planar Waveguide SPDT PIN Diode Switch with 45-dB Isolation." 1995 Microwave and Guided Wave Letters 5.2 (Feb. 1995 [MGWL]): 56-58.

This paper reports on a GaAs PIN diode SPDT switch design which achieves 45 dB of isolation up to 30 GHz. The switch design uses 2-µm-thick i-region PIN's, a shunt-shunt-series switch topology in each arm, and a quasi-coplanar waveguide (CPW) design environment to achieve its superior isolation performance. By employing CPW ground isolation with a microstrip design, as much as 10-dB improvement in isolation performance was observed at the upper band frequencies. The switch achieves 1.02-dB insertion loss and > 15-dB input and output return-loss across the band. In comparison to previously reported GaAs MMIC PIN diode switches at millimeter-wave frequencies, this design achieves state-of-the-art isolation performance.

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