Abstracts

Optoelectronic Isolator for Microwave Applications

D.B. Huff and J.P. Anthes. "Optoelectronic Isolator for Microwave Applications." 1990 Transactions on Microwave Theory and Techniques 38.5 (May 1990 [T-MTT] (Special Issue on Applications of Lightwave Technology to Microwave Devices, Circuits, and Systems)): 571-576.

A new family of devices is described. The microwave characteristics of high-speed semiconductor laser diodes and photodiodes allow the design of low-loss isolators at high frequencies. A prototype optoelectronic isolator has achieved, for the first time, forward transmission gain without the need for auxiliary amplification. The unilateral transformation between electrical and optical regimes has produced a device with high isolation (>80 dB) and 0.13 dB gain. Prototype characteristics are compared to analytic models.

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