Abstracts

Nonresonant Semiconductor Phase Shifter (Short Papers)

G. Novick, H. Jacobs, C.M. Locasio and J. Londono. "Nonresonant Semiconductor Phase Shifter (Short Papers)." 1982 Transactions on Microwave Theory and Techniques 30.11 (Nov. 1982 [T-MTT]): 2034-2036.

Distributed p-i-n diodes were appended to the sidewalls of dielectric waveguides in order to produce phase shifters and line-scanning antennas since a change in conductivity of the bulk semiconductor material will change the wavelength in the dielectric guide. RF losses have been reported when the p-i-n modulators are used in this manner. One of the mechanisms of loss can be resonance absorption at specific frequencies. In order to eliminate resonant effects, the p-i-n diode modulator has been redesigned into small periodic segments where each modulator chip is much smaller than one half wavelength.

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