Abstracts

Experimental Investigation of Microwave-Optoelectronic Interactions in a Microstrip Ring Resonator

G.K. Gopalakrishnan, B.W. Fairchild, C.L. Yeh, C.-S. Park, K. Chang, M.H. Weichold and H.F. Taylor. "Experimental Investigation of Microwave-Optoelectronic Interactions in a Microstrip Ring Resonator." 1991 Transactions on Microwave Theory and Techniques 39.12 (Dec. 1991 [T-MTT] (1991 Symposium Issue)): 2052-2060.

Microwave optoelectronic mixing is demonstrated on a semi-insulating gallium arsenide substrate, by monolithically integrating Schottky diode photodetectors into a microstrip ring resonator. When operated in the resistive mixing mode, a low frequency difference signal is extracted from the bias pad of the circuit. In the parametric mode, both degenerate and non-degenerate parametric amplification of an optical carrier signal takes place. The circuit shows good potential for application in wide-band fiberoptic systems.

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