Abstracts

Submillimeter-Wave Detection with Submicron-Size Schottky-Barrier Diodes

M. McColl, D.T. Hoidges and W.A. Garber. "Submillimeter-Wave Detection with Submicron-Size Schottky-Barrier Diodes." 1977 Transactions on Microwave Theory and Techniques 25.6 (Jun. 1977 [T-MTT] (Special Issue on the Proceedings of the Second International Conference on Submillimeter Waves and Their Applications)): 463-467.

Schottky-barrier diode detection has been extended to 7.2 THz (42 mu m) using 0.5-mu m-diam diodes. The diodes were fabricated on bulk-doped n-type GaAs using electron lithographic techniques; diameters as small as 1000 /spl Aring/ have been achieved. A new approach in Schottky-barrier design, the contact array diode, is proposed. The diode is fabricated from readily available bulk doped material, and a performance is indicated that is competitive to the conventional epitaxial Schottky-barrier mixer well into the submillimeter wavelength region. A scanning electron microscope (SEM) photograph of diode array structures is shown.

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