Abstracts

Microwave Interactions in Semiconductor Multiple-Quantum-Well Heterostructures Utilizing a Coplanar-Strip Geometry Device

S.W. Kirchoefer. "Microwave Interactions in Semiconductor Multiple-Quantum-Well Heterostructures Utilizing a Coplanar-Strip Geometry Device." 1995 Transactions on Microwave Theory and Techniques 43.5 (May 1995 [T-MTT]): 1122-1127.

A novel device design utilizing a multiple-quantum-well heterostructure conduction channel with an oxide-isolated overlying coplanar-strip transmission line has been constructed. These devices exhibit negative differential conductance in their dc characteristics for current transport in the plane of the quantum-well layers, originating from the change in mobility of the heated electrons within the quantum-well structure. This device design has permitted the observation of nonlinear conduction properties using these multiple-quantum-well heterostructures at microwave frequencies.

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