Abstracts

Power Considerations on IMPATT-Diode Arrays with Incomplete Thermal Isolation

H. Suzuki, O. Kurita, M. Ino, T. Makimura and M. Ohmori. "Power Considerations on IMPATT-Diode Arrays with Incomplete Thermal Isolation." 1980 Transactions on Microwave Theory and Techniques 28.6 (Jun. 1980 [T-MTT]): 632-638.

Power output characteristics are discussed for an IMPATT-diode array in which the thermal isolation between the diodes is not complete. The degree of thermal isolation is treated by modifying the thermal resistance. The power output characteristics, calculated by the theory, agree with the characteristics obtained from experiments for a two-diode array. In this experiment, the diode arrangement is unsymmetrical with respect to the quartz standoff, in constrast to the symmetrical arrangement ordinarily used in X band. The 380-mW (70-GHz) power output obtained from an array composed of two Si DDR diodes is 1.7 times that of single diode operation.

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