Abstracts

High-Frequency Gunn Oscillators (Short Papers)

T.G. Ruttan. "High-Frequency Gunn Oscillators (Short Papers)." 1974 Transactions on Microwave Theory and Techniques 22.2 (Feb. 1974 [T-MTT]): 142-144.

Recent work to achieve high output power of fundamental mode Gunn-effect oscillators at frequencies ranging from 25 to 71 GHz is described. Ambient powers of 370 mW at 6.7-percent efficiency at 25 GHz, 260 mW at 4.5-percent efficiency at 38 GHz 150 mW at 4-percent efficiency at 54 GHz, and 30 mW at 1-percent efficiency at 71 GHz were obtained from single-diode structures. Combining two diodes in a push-pull circuit yielded 400 mW at 3.5-percent efficiency at 32 GHz and 260 mW at 4.0-percent efficiency at 42 GHz. This represents some of the highest powers and efficiencies reported to date from millimeter-wave Gunn-effect oscillators.

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