Abstracts

Microwave Frequency Multiplication Using Hot Electrons in Semiconductors

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The subject of this paper is microwave frequency multiplication by hot carriers in bulk semiconductors which show nonlinear current-voltage characteristics. The fifth, seventh, and ninth harmonics are measured, the fundamental frequeucy being in the X-band. Efficiencies are obtained which are higher than those obtained so far with point-contact multipliers and gas discharge tubes. In addition, higher input power can be applied, and the assembly of a hot carrier multiplier is simpler and more economical than others.

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