

Design and Performance of the Millimeter Wave DBR Gunn Oscillators

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The operation principle and the design method of Distributed Bragg Reflector Gunn oscillators in the millimeter waveband are described based on the theory of coupled-modes in a dielectric grating region, the oscillator is constructed by an inverted-strip dielectric waveguide and an inserted Gunn diode. A practical oscillator with an output of 60~90 mW and 10^{-5} ~ 10^{-6} frequency stability at 36 GHz has been performed, the test results are in agreement with theoretical predictions.

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