Abstracts

Amplitude and Frequency Modulation of a Waveguide Cavity CW Gunn Oscillator

W.C. Tsai and F.J. Rosenbaum. "Amplitude and Frequency Modulation of a Waveguide Cavity CW Gunn Oscillator." 1970 Transactions on Microwave Theory and Techniques 18.11 (Nov. 1970 [T-MTT] (Special Issue on Microwave Circuit Aspects of Avalanche-Diode and Transferred Electron Devices)): 877-884.

The characteristics of bias-voltage-controlled AM and FM of a CW Gunn oscillator are reported. It is found that the loaded Q of the microwave oscillator circuit and the microwave impedance level largely govern these characteristics. Modulation mechanisms are discussed. A particular mechanism, due to the nonlinear I-V curve of the device, is shown to lower the oscillating frequency as the bias voltage is increased. Performance of an automatic frequency control loop (AFC) is also described.

❑ Return to main document.