Abstracts

Gunn Oscillator as a Frequency Memory Device

J. Magarshack. "Gunn Oscillator as a Frequency Memory Device." 1968 G-MTT International Microwave Symposium Digest and Technical Program 68.1 (1968 [MWSYM]): 77-90.

Microwave oscillators based on Gunn or avalanche effects are rapidly expanding the field of microwave applications with possibilities which are far in excess of the capabilities of more conventional sources. Some of these potential applications arise from the ability of these devices to combine several microwave operations in one single device. This paper describes such a property which has hitherto not been reported, namely the ability of a Gunn oscillator to oscillate stably at several predetermined frequencies and to switch from one frequency to another with very little residual oscillation at frequencies other than the selected one. The switching is performed either by a pilot oscillator or oscillators which synchronize the Gunn oscillator at a lower power level and which can be removed after switching, or if there are only two stable frequencies present, by sending a positive or negative going pulse along the bias. Experimental results will be given together with a qualitative explanation of the mechanism.

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