

RF Current and Voltage Waveform Measurement of an Oscillating Avalanche Diode

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A method of measuring the rf impedance of an oscillating avalanche diode is described, and a technique for comparing calculated and measured rf impedance values for a variety of diffused Ge diode structures is considered. The value of this measurement method rests with its ability to provide values of the diode rf impedances under both large-signal and small-signal conditions for CW and pulsed operation in either the single-frequency or multifrequency mode of oscillation. The totality of these characteristics clearly delineates the uniqueness of this technique compared with conventional slotted-line measurements.

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