Abstracts

A New Microwave Measurement Technique to Characterize Diodes and an 800-Gc Cutoff Frequency Varactor at Zero Volts Bias (Jan. 1964 [T-MTT])

B.C. De Loach. "A New Microwave Measurement Technique to Characterize Diodes and an 800-Gc Cutoff Frequency Varactor at Zero Volts Bias (Jan. 1964 [T-MTT])." 1964 Transactions on Microwave Theory and Techniques 12.1 (Jan. 1964 [T-MTT]): 15-20.

A means has been found which enables one to make negligible the complicating effects of posts and shunting cartridge capacitance usually present in microwave diode circuits. This simplification permits the representation of the diode by a simple equivalent circuit and the determination of the effective diode parameters from transmission measurements. Parameters so obtained at X band (8.2 to 12.4 Gc) are compared with audio frequency bridge measurements. Measurements at M band (50-60 Gc) of a new 800-Gc cutoff frequency varactor are also described. This varactor has zero bias junction capacitance in the 0.016 pf range and spreading resistance on the order of 12 Omega. It is expected to extend the useful range of parametric devices well into the millimeter region.

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