Abstracts

Diode Characterization in a Microstrip Measurement System for High Power Microwave Power Transmission

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A method has been devised to experimentally characterize a packaged diode by inserting in a microstrip test mount. The diode is shunt mounted to the ground plane where a network analyzer measures the scattering parameters from the two-port test fixture. The equivalent circuit pararneters are extracted from the measured data. A large signal measurement using the same test mount has also been configured to determine the power conversion efficiency from RF to DC as well as determining the embedded network impedance of the diode. Experimental characterization, conversion efficiencies, and input impedance of a GaAs Schottky barrier diode are presented. The method is quite general and can be used for characterizing solid-state devices for other applications.

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