Abstracts

The Determination of Diode Resistance from the Transmission Using a Waveguide/Coaxial Line Tee Junction

J.R.G. Twisleton. "The Determination of Diode Resistance from the Transmission Using a Waveguide/Coaxial Line Tee Junction." 1995 Transactions on Microwave Theory and Techniques 43.6 (Jun. 1995 [T-MTT]): 1236-1240.

A method of finding the resistance and conductance of a diode terminating the coaxial arm of a tee junction from the minimum transmission obtained by adjusting the position of the diode, from the effect of an incremental change in this position, or from the frequency bandwidth of the transmission characteristic, is described. The method avoids the direct measurement of high reflection encountered at the extremes of bias with diode terminations. The parameters of the junction needed in the derivation are found experimentally. Allowing for loss in the coaxial line, the resistance of diodes determined at 9.4 GHz was in good agreement with the results of coaxial line measurements at 500 MHz and 3 GHz. The effect of the reactance of the diode capsule, not allowed for in the determination, is considered briefly.

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