Abstracts

A New Procedure for Calculating Varactor Q from Impedance Versus Bias Measurements

E.W. Sard. "A New Procedure for Calculating Varactor Q from Impedance Versus Bias Measurements." 1968 Transactions on Microwave Theory and Techniques 16.10 (Oct. 1968 [T-MTT]): 849-860.

The reasons for preferring the impedance versus bias method of measuring varactor Q at high frequencies are pointed out. To circumvent the circuit loss problem, a rigorous procedure has been developed, based on the Weissfloch equivalent circuit of a lossy two-port network, for extracting the varactor junction Q. Parallel circuit loss is automatically corrected for, but correction for series loss requires substitution of a dummy shorted varactor. The procedure is described along with an actual example of its use at 64 GHz. Simulated examples are also worked out to illustrate the effect of the initial reactance in series with the varactor junction, and to demonstrate the numerical correctness of the procedure.

❑ Return to main document.