Abstracts

Numerical Data Processing of Reflection Coefficient Circles

D. Kajfez. "Numerical Data Processing of Reflection Coefficient Circles." 1970 Transactions on Microwave Theory and Techniques 18.2 (Feb. 1970 [T-MTT]): 96-100.

A numerical procedure is described for processing the data of a microwave measurement in which the measured points are distributed in a form of a circle in a complex plane. Instead of plotting the measured data on a Smith chart and analyzing them by graphical methods, the data are analyzed by the method of least squares. The result of this analysis consists of three complex numbers K, L, and M, which define the bilinear transformation in question. The procedure is illustrated on the example of impedance versus bias measurements on a varactor diode which was recently described by E. W. Sard. The necessary formulas are derived for computation of elements of the equivalent circuit from the above constants K, L, and M. The procedure is well-suited for programming a digital computer.

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