

Abstracts

A New Miniature Magnetic Field Probe for Measuring Three-Dimensional Fields in Planar High-Frequency Circuits

Y. Gao and I. Wolff. "A New Miniature Magnetic Field Probe for Measuring Three-Dimensional Fields in Planar High-Frequency Circuits." 1996 Transactions on Microwave Theory and Techniques 44.6 (Jun. 1996 [T-MTT]): 911-918.

A new noncontacting miniature magnetic field probe for measuring the surface current distribution on high-frequency planar circuits in x-, y-, z-directions in the 1-20 GHz band has been designed, fabricated and tested. The field probes have very small dimensions and do not need any connection to the operating circuit under test, therefore there is almost no perturbation of the circuit properties. This simple and practical magnetic field probes can be used to assist the design of microwave circuits, antenna diagnostics and to test products in industry. This paper describes the producing procedure of the magnetic field probes, a scanning diagnostic system, measurement examples and comparisons between measurements and calculations. The measurement results agree very well with theoretically expected field distributions.

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