Abstracts

Analysis of Microstrip Circuits Using Three-Dimensional Full-Wave Electromagnetic Field Analysis in the Time Domain

T. Shibata, T. Hayashi and T. Kimura. "Analysis of Microstrip Circuits Using Three-Dimensional Full-Wave Electromagnetic Field Analysis in the Time Domain." 1988 Transactions on Microwave Theory and Techniques 36.6 (Jun. 1988 [T-MTT]): 1064-1070.

Calculation of the frequency characteristics for microstrip circuits based on a three-dimensional full-wave electromagnetic field analysis in the time domain is proposed. In this method, the circuit is excited by a pulse which includes broadened frequency components. The frequency characteristics are then computed at once from the Fourier transform of the output transient responses. To evaluate the validity and capability of the method, a side-coupled microstrip filter is analyzed and the frequency characteristics are calculated. A quasi-static analysis of this filter is also presented and the results compared with measurements. The frequency characteristics calculated with the full-wave analysis in the time domain show excellent agreement with the measured values, thus demonstrating the validity and the power of the analytical method.

❑ Return to main document.