

Modeling of Multiconductor Microstrip Systems on Microwave Integrated Circuits

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Abstract

The microstrip line is widely used as the planar transmission line in microwave integrated circuits and high speed interconnecting buses. In this paper, we use COMSOL Multiphysics® to study multiconductor microstrip systems on microwave integrated circuits. We specifically illustrate the modeling of open four and five conductors systems. We successfully demonstrated the calculation of the capacitance matrices for the models and their quasi-static spectral of the potential distribution on microwave integrated circuits. Figure 1 shows the contour plot of the open four conductors system and its computational results compared to the Galerkin method. Indeed, excellent agreement with results from the previous methods is demonstrated. Figure 2 shows the potential distribution plot of the second designed model which is the open five conductors system.

Keywords: Finite element method, Capacitance, Microwave integrated circuit, Microstrip lines.

Figures used in the abstract

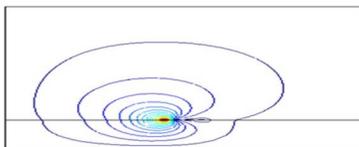


Figure 1. Contour plot the open four conductors system.

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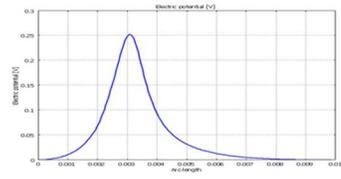


Figure 2. Potential distribution plot of the open five conductors system.

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