Abstracts

Properties of Microstrip Line on Si-SiO/sub 2/ System

H. Hasegawa, M. Furukawa and H. Yanai. "Properties of Microstrip Line on Si-SiO/sub 2/ System." 1971 Transactions on Microwave Theory and Techniques 19.11 (Nov. 1971 [T-MTT]): 869-881.

A parallel-plate waveguide model for the microstrip line formed on the Si-SiO/sub 2/ system is analyzed theoretically and the results are compared with the experiment. The experiment has been performed over wide ranges of frequency, substrate resistivity, and strip width. Existence of three types of fundamental modes is concluded and the condition for the appearance of each mode is clarified. In particular, the slow-wave mode is found to propagate within the resistivity-frequency range suited to the monolithic circuit technology, and its propagation mechanism is discussed. Approximate analysis of the fringing effect is also made for the slow-wave mode.

❑ Return to main document.