Abstracts

New Analysis of Semiconductor Isolators: The Modified Spectral Domain Analysis (Short Papers)

S. Tedjini and E. Pic. "New Analysis of Semiconductor Isolators: The Modified Spectral Domain Analysis (Short Papers)." 1985 Transactions on Microwave Theory and Techniques 33.1 (Jan. 1985 [T-MTT]): 59-64.

This paper addresses semiconductor isolators of the field displacement effect type. The semiconductor is modelized by its surface impedance tensor. This description allows an extension of the well-known spectral domain method to the analysis of the semiconductor isolators. Different configurations are studied and numerical results are given. The finline isolator with InSb is shown to be the best choice-indeed, insertion loss is less than 3 dB/cm and isolation is greater than 18 dB/cm. Experimental results supporting these calculations will be published in a following paper.

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