Abstracts

Finlines in Rectangular and Circular Waveguide Housings Including Substrate Mounting and Bending Effects--Finite Element Analysis

Eswarappa, G.I. Costache and W.J.R. Hoefer. "Finlines in Rectangular and Circular Waveguide Housings Including Substrate Mounting and Bending Effects--Finite Element Analysis." 1989 Transactions on Microwave Theory and Techniques 37.2 (Feb. 1989 [T-MTT] (Special Issue on Quasi-Planar Millimeter-Wave Components and Subsystems)): 299-306.

The finite element method is applied for deriving the dispersion characteristics and field components of dominant and higher order modes in finlines. The method is accurate and covers the metallization thickness, substrate mounting grooves, bending of the substrate, and arbitrary cross sections. Results for structures already obtained with other methods have been found to agree well with available data. As a new contribution, the effect of substrate bending on the propagation constant is studied. Also, the dispersion characteristics for the dominant and higher order modes for bilateral finlines in circular waveguide housing are calculated for the first time. The field plots for all the modes are also given.

❑ Return to main document.