Abstracts

Accurate Hybrid-Mode Finline Configurations Including Analysis of Various Multilayered Dielectrics, Finite Metallization Thickness, and Substrate Holding Grooves

R. Vahldieck. "Accurate Hybrid-Mode Finline Configurations Including Analysis of Various Multilayered Dielectrics, Finite Metallization Thickness, and Substrate Holding Grooves." 1984 Transactions on Microwave Theory and Techniques 32.11 (Nov. 1984 [T-MTT]): 1454-1460.

An accurate analysis of various finline configurations is introduced. The method of field expansion into suitable eigenmodes used considers the effects of finite metallization thickness as well as waveguide wall grooves to fix the substrate. Especially for millimeter-wave range applications, the propagation constant of the fundamental mode is found to be lower than by neglecting the finite thickness of metallization. For increasing groove depth in cases of asymmetrical and "isolated finline," higher order mode excitation reduces the monomode bandwidth significantly. In contrast to hitherto known calculations, this parameter only causes negligible influence on a fundamental mode if the groove depth is lower than hall of the waveguide height.

❑ Return to main document.