Abstracts

Static Capacitance of Some Multilayered Microstrip Capacitors

A.K. Verma and Z. Rostamy. "Static Capacitance of Some Multilayered Microstrip Capacitors." 1995 Transactions on Microwave Theory and Techniques 43.5 (May 1995 [T-MTT]): 1144-1152.

A new unified model, the modified Wolff model (MWM) is presented to determine the lumped capacitance of rectangular, circular, hexagonal and triangular patches on the single layer substrate and under the multilayer condition. Effect of the top shield on the lumped capacitance has also been determined. The MWM is the combination of Wolff-Knoppick model, TTL technique and single layer reduction (SLR) technique. The results of MWM have been compared against the results of SDA, FEM, dual integral method and other forms of the variational methods with accuracy between 0.5-5% for the most of shapes under various conditions. The present model has accuracy of SDA and other rigorous formulations. No single method has been used in the literature to determine the lumped capacitance of patches of several shapes under the multilayer and shielded condition. The MWM is fast even on the desktop computer. Thus, the model is suitable for a unified CAD for the MMIC applications.

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