Abstracts

CAD of Microwave Junctions by Polynomial Curve Fitting

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A circuit representation of lossless reciprocal microwave junctions is presented. Exact scattering parameters of the junction are determined by solving the electromagnetic boundary value problem at few frequencies and for few dimensions. Curve fitting is used to characterize the parameters continuously. This model can be used in any CAD or optimization program, reducing the computation time by several orders of magnitude, while preserving the high accuracy. Application of this model is demonstrated by designs of a low VSWR cavity filter and a broad band diplxer. Experimental data on the diplexer optimized by this method are included.

❑ Return to main document.