Abstracts

Computer-Optimized Multisection Transformers Between Rectangular Waveguides of Adjacent Frequency Bands (Short Papers)

F. Arndt, U. Tucholke and T. Wriedt. "Computer-Optimized Multisection Transformers Between Rectangular Waveguides of Adjacent Frequency Bands (Short Papers)." 1984 Transactions on Microwave Theory and Techniques 32.11 (Nov. 1984 [T-MTT]): 1479-1484.

Design data are given for multisection double-plane step transformers between X- (8.2-12.4 GHz), Ku- (12.4.-18 GHz), K- (18-26.5 GHz), and Ka- (26.5-40 GHz) band waveguides. The calculations, based on a field expansion into orthogonal eigenmodes, take into account the influence of higher order modes. For frequency ranges other than the bands given, simple scaling formulas based on the optimized data yield transformer designs with sufficiently low VSWR. Optimum short transformers are possible if the total transformer length is included within the error function to be optimized. Measurements agree with theory.

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