Abstracts

Waveguide and Ridge Waveguide T-Junctions for Wide Band Applications

H.-W. Yao, A. Abdelmonem, J.-F. Liang, X.-P. Liang and K.A. Zaki. "Waveguide and Ridge Waveguide T-Junctions for Wide Band Applications." 1993 MTT-S International Microwave Symposium Digest 93.2 (1993 Vol. II [MWSYM]): 601-604.

Scattering parameters of waveguide and ridge waveguide stepped T-junctions are obtained using an extension of the three plane mode matching method. An optimization process is applied to find the T-junctions and steps dimensions that yield low reflection coefficient in one of the T-junction arms over a wide frequency band. The optimized wide band T-junctions are useful in the design of wide band high power dividers, diplexers and multiplexer. An example of the design of a wide band T-junction diplexer is presented. Experimental results on the optimized T-junction and the T-junction diplexer are presented. The experimental results of both the T-junction and the diplexer showed excellent agreement with their computed optimum results, respectively.

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