Abstracts

Double-Plane Steps in Rectangular Waveguides and Their Application for Transformers, Irises, and Filters

H. Patzelt and F. Arndt. "Double-Plane Steps in Rectangular Waveguides and Their Application for Transformers, Irises, and Filters." 1982 Transactions on Microwave Theory and Techniques 30.5 (May 1982 [T-MTT]): 771-776.

Double-plane steps in rectangular waveguides are investigated with the method of field expansion into eigenmodes. The method takes into account the influence of evanescent fields and power transmission due to higher order modes. The scattering coefficients of a P- (Ku-) to X-band waveguide transition as well as of resonant irises with finite thickness are calculated and compared with measured results. An optimum short double-plane three-section transformer is designed which shows equal-ripple behavior in passband. The performance of a reactance-coupled four resonator half-wave filter is improved by additional optimized double-plane steps.

❑ Return to main document.