Abstracts

On the Relation Between Modes in Rectangular, Elliptical, and Parabolic Waveguides and a Mode-Classifying System

T. Larsen. "On the Relation Between Modes in Rectangular, Elliptical, and Parabolic Waveguides and a Mode-Classifying System." 1972 Transactions on Microwave Theory and Techniques 20.6 (Jun. 1972 [T-MTT]): 379-384.

The class of waveguides with rectangular, elliptical, and parabolic cross sections and their transition shapes has been investigated. The transition shapes have been described by hyperelliptic functions. By a numerical procedure based on the finite-element method, the cutoff wavelength and the mode patterns of 12 of the lowest-order TM modes and 14 of the lowest-order TE modes of this class have been found. On the basis of the investigation, a mode-classifying system for arbitrary waveguide cross sections is suggested.

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