Abstracts

The Characteristic Impedance of a Family of Rectangular Coaxial Structures with Off-Centered Strip Inner Conductors

H.J. Riblet. "The Characteristic Impedance of a Family of Rectangular Coaxial Structures with Off-Centered Strip Inner Conductors." 1979 Transactions on Microwave Theory and Techniques 27.4 (Apr. 1979 [T-MTT]): 294-298.

A two-parameter family of hyperelliptic integrals is exhibited which maps the upper half-phase into the interior of a rectangle pierced by a reentrant line. Since these integrals can be expressed as the sum of elliptic integrals of the first kind, the odd- and even-mode characteristic impedances of a two-parameter family of coaxial structures whose inner conductors are strips, displaced perpendicularly to their width from the center of the outer rectangular conductor, can be expressed in terms of these well-known functions. Numerical values are given for a range of values of W/B and B/sub 1/ /B. Here W is the width of the strip, B is the height of the outer rectangular conductor, and B/sub 1/ is the distance from the strip to the farthest parallel wall of the outer conductor.

❑ Return to main document.