Abstracts

Hall Field and Magnetoresistance Effects in Rectangular Waveguide Completely Filled with Semiconductor (Short Papers)

J.B. Ness and M.W. Gunn. "Hall Field and Magnetoresistance Effects in Rectangular Waveguide Completely Filled with Semiconductor (Short Papers)." 1976 Transactions on Microwave Theory and Techniques 24.7 (Jul. 1976 [T-MTT]): 473-476.

Microwave propagation through a rectangular waveguide completely filled with semiconductor and subject to a transverse magnetic field is analyzed. When the magnetic field is parallel-to the broad wall of the waveguide (the x axis), propagation is analyzed in terms of the Hall effect. For the magnetic field parallel to the y axis, the effect of the field on the propagation is shown to be due to longitudinal magneto-resistance effects. Good agreement is obtained between theory and experiment in both cases. The experiments were performed at 30 GHz using n-type germanium.

❑ Return to main document.