Abstracts

A Plasma Guide Microwave Selective Coupler (Nov. 1961 [T-MTT])

W.H. Steier and I. Kaufman. "A Plasma Guide Microwave Selective Coupler (Nov. 1961 [T-MTT])." 1961 Transactions on Microwave Theory and Techniques 9.6 (Nov. 1961 [T-MTT]): 499-506.

A new type of microwave coupler has been investigated in the X-band and S-band ranges. In this coupler, a gas discharge tube passes through two rectangular waveguides that are separated by some distance. A metal cylinder surrounds the discharge tube in the separation space. The coupling of microwave power via this plasma guide coupler can be varied electronically over a range greater than 30 db. Pulsed power levels of more than 100 w can be handled. When operated as a switch, a switching time of from 2 to 5 µsec has been observed. This paper describes some of the operating characteristics that have been observed, an approximate theory of operation, and measurements pertinent to a complete description of the coupler.

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