Abstracts

Multiband Cavity for High Temperature Plasma Measurements (Correspondence)

W.T. Maloney. "Multiband Cavity for High Temperature Plasma Measurements (Correspondence)." 1964 Transactions on Microwave Theory and Techniques 12.6 (Nov. 1964 [T-MTT]): 616-617.

The design of microwave cavities for investigating high temperature arc plasmas must provide for adequate cooling, vacuum sealing, high Q, minimum disturbance to gas flow and general versatility. In a typical plasma experiment (shown in Fig. 1) ionized argon gas flows through a one centimeter circular pipe formed by a stack of insulated water cooled copper disks. Ionization is maintained thermally by an electric arc burning along the pipe axis. The heat transferred to the walls may be 100 w/cm² and central temperatures exceed 8000°K at currents in the neighborhood of 100 a. The cavity is located in the stack so that the gas flow is along its axis.

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