Abstracts

A 125--260-GHz Gyrotron

G.F. Brand, N.G. Douglas, M. Gross, J.Y.L. Ma, L.C. Robinson and C. Zhiyi. "A 125--260-GHz Gyrotron." 1984 Transactions on Microwave Theory and Techniques 32.1 (Jan. 1984 [T-MTT]): 58-64.

The second gyrotron constructed at the University of Sydney has produced continuous microwave output at more than 60 frequencies in the range 125-260 GHz at power levels approaching 10 W. A gyrotron like this, with broad frequency coverage and moderate power output, has a wide range of possible applications, from spectroscopy to scattering from waves and fluctuations in plasmas. In this paper, the results of detailed measurements of frequency, magnetic field, frequency pulling, and starting current are compared with theory. Agreement is excellent. We find that mode conversion at the output end of the cavity determines the level of output power.

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