Abstracts

Experimental Proof-of-Principle Results on a Mode-Selective Input Coupler for Gyrotron Applications

J.P. Tate, H. Guo, M. Naiman, L. Chen and V.L. Granatstein. "Experimental Proof-of-Principle Results on a Mode-Selective Input Coupler for Gyrotron Applications." 1994 Transactions on Microwave Theory and Techniques 42.10 (Oct. 1994 [T-MTT]): 1910-1917.

Proof-of-principle results for a mode selective input coupler are presented. Transmission and reflection measurements for the TE/sub 02/ cylindrical waveguide mode are given along with the output mode pattern. The results show good agreement for the cutoff frequency, mode pattern general behavior and variation with frequency for signals above cutoff. A maximum passband of 1.2 GHz (~7%) has been achieved. Comparisons with theory for overall frequency response (from 15 to 18 GHz) and mode pattern characteristics (at 17.5 GHz) are also presented. The design and concept are promising for harmonic gyrotron-traveling-wavetube amplifier and phase-locked gyrotron oscillator applications.

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