Abstracts

Methods of Efficiency Enhancement and Scaling for the Gyrotron Oscillator

K.R. Chu, M.E. Read and A.K. Ganguly. "Methods of Efficiency Enhancement and Scaling for the Gyrotron Oscillator." 1980 Transactions on Microwave Theory and Techniques 28.4 (Apr. 1980 [T-MTT]): 318-325.

It is shown that a gyrotron oscillator operating in a slightly tapered magnetic field can attain an efficiency of ~78 percent, approximately 1.7 times higher than that obtainable in a constant magnetic field. Extensive numerical data have been tabulated and a convenient parameter is introduced to generate numerical efficiency scaling relations through which optimum operating conditions are clearly exhibited. Conditions for reaching the high efficiency operating regime are also studied and numerically illustrated.

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