

Abstracts

Theoretical Investigations of TRAPATT Amplifier Operation

R.K. Mains, N.A. Masnari and G.I. Haddad. "Theoretical Investigations of TRAPATT Amplifier Operation." 1980 Transactions on Microwave Theory and Techniques 28.10 (Oct. 1980 [T-MTT]): 1070-1076.

A device-circuit interaction program has been developed for the study of TRAPATT amplifiers. The device is simulated using the programs developed by Bauhahn. A slug-tuned coaxial circuit is simulated with the circuit parameters chosen to model an amplifier for which experimental results have previously been published. Results including diode waveforms over the entire amplifier frequency band are presented. Separate mechanisms have been identified as being responsible for the fall off in gain and power output above and below the center frequency. The maximum bandwidth which can be attained with TRAPATT amplifier is also estimated.

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