Abstracts

State-of-the-Art Performance Millimetre Wave Gallium Arsenide Gunn Diodes Using Ballistically Hot Electron Injectors

S. Neylon, I. Dale, H. Spooner, D. Worley, N. Couch, D. Knight and J. Ondria. "State-of-the-Art Performance Millimetre Wave Gallium Arsenide Gunn Diodes Using Ballistically Hot Electron Injectors." 1989 MTT-S International Microwave Symposium Digest 89.1 (1989 Vol. I [MWSYM]): 519-522.

Ballistically hot electron injectors have been designed using a graded gap GaAs/AIGaAs structure and incorporated into the cathode side of a GaAs Gunn diode drift region. Epitaxial material has been grown using MBE techniques and diodes fabricated. RF assessment at 94GHz has resulted in efficiencies over 2.3%, above 50mW output power, combined with low sideband noise performance and much improved temperature stability.

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