Abstracts

Microwave Amplifiers Employing Integrated Tunnel-Diode Devices

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A series of shunt-tuned integrated microwave tunnel-diode devices utilizing unencapsulated beam lead tunnel diodes and including tuning and stabilizing circuitry have been fabricated using tantalum thin-film technology for use as the active element in microwave reflection amplifiers. The theoretical properties of such devices have been explored, and data relating to their design and measured performance are presented in detail. Finally, the successful use of these devices as the active elements in a series of absolutely stable circulator-coupled reflection amplifiers at 4 and 6 GHz has been demonstrated.

❑ Return to main document.