Abstracts

Design, Fabrication, and Evaluation of BARITT Devices for Doppler System Applications

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The properties of BARITT devices and their application in self-mixing Doppler systems are presented. A detailed comparison with IMPATT and Gunn devices indicates that the BARITT is superior in this particular application in many respects, particularly when prime power requirements are important. It is shown that, even though the BARITT device will not compete with existing devices with regard to power output and efficiency, it is the best available device for self-mixed Doppler radar applications and therefore should find wide usage in such applications. Simplified design criteria for BARITT devices are given and fabrication procedures for X-band devices with different operating voltages are described.

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