

# Problems of design and fabrication of a C.W. silicon IMPATT diode

## **Abstract**

The theory of the IMPATT diode is briefly described and design criteria proposed. The design of a device which is both an efficient microwave oscillator and suitable for batch production involves electrical, mechanical and thermal considerations. These are discussed with reference to the chosen device.

The problems affecting overall reliability of constructing this device in large reproducible numbers are then discussed and an optimized process outlined. Evidence is provided in the form of thermal resistance and microwave measurements to show that this process is suitable for the batch production of a useful solid state microwave oscillator.