Abstracts

The Effect of Temperature on L S A Oscillations Between 26-40 GHz.

S.E. Gibbs. "The Effect of Temperature on L S A Oscillations Between 26-40 GHz.." 1969 G-MTT International Microwave Symposium Digest of Technical Papers 69.1 (1969 [MWSYM]): 182-190.

Investigations have been carried out on the effect of temperature upon L.S.A. oscillations, in the band 26 to 40 GHz. Measurements on n/sup +/-n/sup ++/-n-n/sup +/ GaAs 'sandwich' devices have been made over a range of ambient temperatures -50°C to +100°C. To avoid significant temperature gradients within the active 'n' region the pulse length was chosen to be short compared with the thermal time constant of the device (about 1µs) and the mean input power was maintained at a low level. The results are interpreted with the aid of a computer analysis of the interaction between device and circuit. The simulation considers a realistic device with doping contacts and various random doping fluctuations and attempts to explain some of the essential elements of the experimental performance.

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