

Abstracts

A simple practical technique for estimating the junction temperature and the thermal resistance of a GaAs HBT

M. Olavsbraten. "A simple practical technique for estimating the junction temperature and the thermal resistance of a GaAs HBT." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 1005-1008 vol.2.

This paper shows a practical technique to find a good estimate of the junction temperature and the thermal resistance in a GaAs HBT. The technique is based on simple calculations from the physical dimensions of the HBT and the thermal material parameters, without using any specialized 3D thermal software or equipment for thermal measurements. This work should be of great value for circuit designers, who need an easy practical way of including good thermal values into models for accurate circuit simulations. Two different HBT's have been used to evaluate the technique presented. Evaluation involves comparing the junction temperature obtained by measurements performed at Caswell Technology with estimated values from the present technique.

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