Abstracts

The Effects of Surface Metallization on the Thermal Behavior of GaAs Microwave Power Devices

X. Gui, G.-b. Gao and H. Morkoc. "The Effects of Surface Metallization on the Thermal Behavior of GaAs Microwave Power Devices." 1994 Transactions on Microwave Theory and Techniques 42.2 (Feb. 1994 [T-MTT]): 342-344.

The effects of surface metalization on the thermal behavior of GaAs microwave power devices have been studied numerically using the three-dimensional transmission-line matrix (3D TLM) method. Thermal results for a representative GaAs power device with no metalization, with an entire metal overlayer, and with realistic geometrical surface features are compared under both steady-state and transient conditions. The peak temperature within the device is found to be reduced by over 20 percent by the presence of surface metallization. The mechanism responsible for this improvement is identified and discussed.

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