

عنوان مقاله:

Investigation of Heating Sources in Single Quantum Well Ridge Laser Diode

محل انتشار:

پنجمین کنفرانس بین المللی محاسبات نرم (سال: 1402)

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خلاصه مقاله:

A typical ridge waveguide laser diode with single GaAs quantum well is theoretically designed and characterized using simulation software PIC3D. The simulator self-consistently combines 3D simulation of carrier transport, self-heating, and optical wave-guiding. Through the simulation, thermal behavior of the laser is investigated. Temperature profile and heat power density are obtained by using a three-dimensional heat generation and dissipation model. Simulation results show that Joule heating is the main heating source in the device.

کلمات کلیدی:

.Simulation, PIC3D, Thermal, Active region, Joule Heating

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