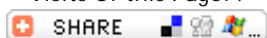




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Research Details :

Research Title : *A new MOSFET IC laser-driver with on-chip thermal and optical stabilization*
A new MOSFET IC laser-driver with on-chip thermal and optical stabilization

Descriptipn : This paper presents a new more advantageous configuration for the laser diode that is used as the principle light source in optical fiber communications and a range of other applications. Most of the common drawbacks have been eradicated through the new design which is integrated through the well known floating gate MOSFET technology. Advantages including improved thermal and optical stabilization and easy direct modulation are realized from a new on-chip laser driver. Besides, the technique guarantees compensation for device leakage and device to device tolerances. The resulting device is cheaper and easy to construct. The voltage control provides better output power modulation and improve linearity for high output power levels. The threshold current required to stimulate emission is also reduced to similar to 10(3) A/cm(2) at 300 K with an active region thickness of similar to 0.5 mu m. In fact the proposed design provides a thinner well defined active region (0.3 mu m) which also acts as an optical cavity resonator, besides satisfying the conditions for the confinement of charged carriers and optical fields.

Research Type : Article

Research Year : 1998

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