Low Power Laser Diode Driver Circuit Design

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ABSTRACT

In this thesis, we present two low-power laser diode drivers (Circuit I, and Circuit II), using DC or AC coupling interface circuit to connect it with laser diode. The TSMC 0.35 m 1P4M technology parameters are used to simulate our design. The simulation data rate is 1.25Gbps. For Circuit I, both DC and AC coupling interface circuits are used and can work at 1.25Gbps date rate. For Circuit II, using DC coupling interface circuit will have "headroom" problem, so that the 1.25Gbps data rate cannot be achieved. However, using AC coupling interface circuit to construct Circuit II can work at 1.25Gbps and has less power consumption.

Keywords : laser diode driver ; low power ; optical-fiber communication

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