Abstracts

Electrical characterization and application of very high speed vertical cavity surface emitting lasers (VCSELs)

V.M. Hietala, K.L. Lear, M.G. Armendariz, C.P. Tigges, H.Q. Hou and J.C. Zolper. "Electrical characterization and application of very high speed vertical cavity surface emitting lasers (VCSELs)." 1997 MTT-S International Microwave Symposium Digest 1. (1997 Vol. I [MWSYM]): 355-358.

Vertical Cavity Surface Emitting Lasers (VCSELs) offer many benefits over conventional edge-emitting lasers including economical microelectronic batch processing, easy extension to 2-D arrays, and of interest here, very large intrinsic bandwidths due to reduced cavity volume. Results of electrical characterization of a 19 GHz bandwidth 850 nm VCSEL are presented. Small-signal characterization and modeling of the frequency response and device impedance is presented. Large signal performance is studied using two-tone RF and high-speed digital measurements. Appropriate drive conditions for high-speed digital applications are demonstrated.

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