

# Integration of 10Gb/sec Silicon Lateral Trench Photodetector with High-Performance CMOS

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## Abstract

We have demonstrated integration of silicon lateral trench photodetectors (LTDs) with high performance CMOS. The AC and DC performance of the transistors are not affected by the additional LTD processing. The LTDs have achieved 10Gb/s open eye operation and good responsivity (0.11 A/W) at 850nm and supply voltages of only 1.5 V. This is the highest speed and lowest operating voltage ever achieved by a fully integrated CMOS photodetector, enabling wider applications for optical interconnect in short distance data communications.