

# Low Power Driver Circuit Design for Liquid Crystal Display

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## ABSTRACT

A high speed, low power output buffer circuit, which is suitable for the liquid-crystal display application is proposed. We add a comparator and one pair charging/discharging transistors to a two-stage conventional amplifier, by employing a comparator circuit to sense the transients of the input to turn on charging/discharging transistors, which are statically " off " when no input is applied. This increases the speed of the circuit without increasing too much static power consumption. The circuit also features a wide input voltage range, a large output swing. The output swing is from 0.5V to 4V and the operation frequency is 100KHz under a 680 PF capacitance load. Rise time and full time are 0.6 and 0.4us. The measured maximum static current is 55uA. This buffer has an improved driving capability during transients but draws little current during static. It is demonstrated in the TSMC 0.6um CMOS technology.

Keywords : buffer ; LCD

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