

8-String, White LED Backlight Controller

❖ GENERAL DESCRIPTION

The AX2008 is a step-up current mode PWM DC/DC converter with built-in power MOSFET and eight channel current sources. It is designed for driving white LED arrays for medium size LCD panel backlight applications.

The AX2008 features dynamic output voltage control function, which automatically chooses the lowest sense voltage of multiple channels to regulate the feedback voltage of step-up converter. Through the function, the AX2008 is able to dynamically adjust output voltage of step-up converter to optimize the system power efficiency.

The internal step-up converter provides soft-start feature which is determined by external compensation components. The switching frequency is programmable by an external resistor, which is helpful for optimizing the external components sizes and improving the efficiency. In shutdown mode, current consumption of converter can be reduced to only 1uA.

The AX2008 provides eight channels constant current sinks with maximum $\pm 3\%$ current matching. The LED current can be adjusted by an external resistor, which provides users flexibility to control the light intensity of LEDs. In addition, users can precisely adjust LED brightness from 0% to 100% via PWM pin with pulse width modulation.

The AX2008 has multiple features to protect the converter from fault conditions. The adjustable over-voltage protection (OVP) function prevents the converter when output loading is open. Over-current protection (OCP) function ensures the system reliability and provides consistent operation. Over-temperature protection (OTP) function protects the converter from overheating in various application conditions.

The AX2008 provides space-saving, thermal enhanced 20-pin TSSOP exposed pad and QFN 4mm x 4mm packages as well to handle power dissipation more efficiently.