AS1109

Constant-Current, 8-Bit LED Driver with Diagnostics

Preliminary Product Brief

1 General Description

The AS1109 was designed to drive up to 8 LEDs through a fast serial interface and features 8 output constant current drivers and an on-chip diagnostic read-back function.

The high clock-frequency (up to 30MHz), adjustable output current, and flexible serial interface makes the device perfectly suited for high-volume transmission applications.

Output current is adjustable (up to 100mA/channel) using an external resistor (REXT).

The serial interface includes an integrated shift register with Schmitt trigger inputs allows display data to be shifted-in. Additionally, an internal data register stores the currently displayed data.

The device features integrated diagnostics for over-temperature, open-LED, and shorted-LED conditions. Integrated shift registers store global fault status information during load as well as the detailed temperature/open-LED/shorted-LED diagnostics results.

The AS1109 also features a low-current diagnostic mode to minimize display flicker during fault testing.

The AS1109 is available in a 16-pin SOIC-150 package and the 16-pin SSOP Package.

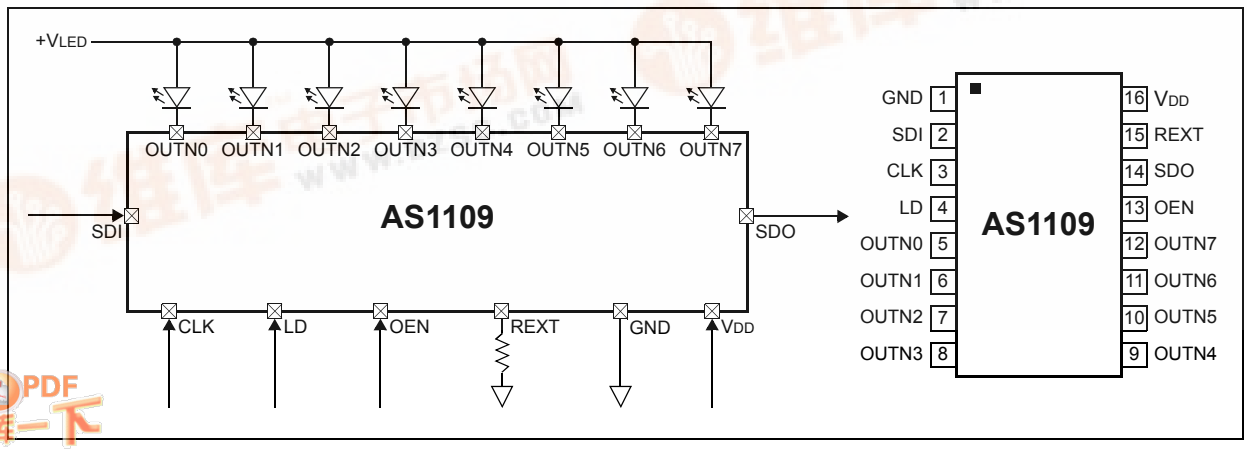
2 Key Features

- 8 Constant-Current Output Channels
- Excellent Output Current Accuracy
  - Between Channels: <±2%
  - Between AS1109 Devices: <±2%
- Output Current Per Channel: 0.5 to 100mA
- Controlled In-Rush Current
- Over-Temperature, Open-LED, Shorted-LED Diagnostics Functions
- Low-Current Test Mode
- Global Fault Monitoring
- Low Shutdown Mode Current: 10µA
- Fast Serial Interface: 30MHz
- Cascaded Configuration
- Extremely Fast Output Drivers Suitable for PWM
- 16-pin SOIC-150 and 16-pin SSOP Package

3 Applications

The device is ideal for fixed- or slow-rolling displays using static or multiplexed LED matrix and dimming functions, large LED matrix displays, mixed LED display and switch monitoring, displays in elevators, public transports (underground, trains, buses, taxis, airplanes, etc.), large displays in stadiums and public areas, price indicators in retail stores, promotional panels, bar-graph displays, industrial controller displays, white good panels, emergency light indicators, and traffic signs.

Figure 1. Main Diagram and Pin Assignments



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