SEMTECH

POWER MANAGEMENT

Features

- Wide input voltage range from 4.5V to 27V
- **Sustain fast Vin fluctuation up to 5v/µs**
- 42V maximum output voltage
- Drives up to 40 WLEDs in 4 strings
- **Programmable LED current for up to 150mA per string**
- **+/- 2% string-to-string current matching**
- **Up to 90% efficiency**
- Wide 0.2% to 100% PWM dimming range
- Enable analog dimming
- Integrated 3.0A power switch
- 700KHz switching frequency for small size
- Adjustable OVP for cost-effective output cap selection
- **Open/short LED protection**
- **Short LED protection enable/disable**
- Thermal protection with auto-recovery
- Thermally enhanced TSSOP-20 EDP package
- Lead-free, Halogen-Free and WeEE/RoHS Compliant

Applications

- Medium-sized LCD panel
- Notebook Display
- Automotive Car Navigation Display
- Sub-Notebook and Tablet Computer Displays
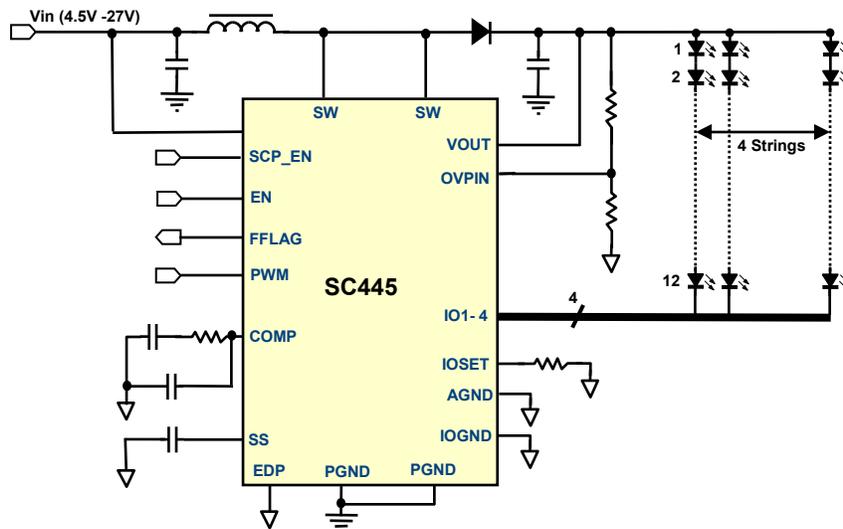- Portable Media Players

Description

The SC445 is a high-efficiency multiple string WLED driver with an integrated boost converter. It operates over a wide input range from 4.5V to 27V and can sustain fast Vin transient up to 5V/µs. It can drive up to forty WLEDs in 4 strings with current up to 150mA per string. The string-to-string current matching is 2% typical, 3% maximum. The overall efficiency is greater than 90% due to the low current sense voltage and a low-impedance internal power switch. The wide PWM dimming range boasts a ratio of 500:1.

The 700KHz switching frequency enables the user to optimize the external component sizes for efficiency. When there are fewer than 10 LEDs in each string, users can adjust the output voltage protection yielding an allowable reduction in associated costs, size and voltage ratings of the output capacitor.

The SC445 also features comprehensive open and short-circuit LED protection functions. It disables the corresponding strings with LED open or LED short conditions while maintaining normal operation of other, unaffected LED strings. This feature allows LCD panels to remain viewable even under LED failure, wire disconnect, or short-circuit conditions. The internal thermal shutdown protects the IC from overheating at abnormal conditions.

The SC445 is available in a thermally-enhanced TSSOP-20 EDP package.

Typical Application Circuit

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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