

## High-Efficiency Three-String with up to 10-WLED White LED Driver

### Features

- Drives up to Three Strings of 10 Series LEDs
- 11-bit Programmable Dimming Resolution
- Exponential or Linear Brightness Control
- PWM Brightness Control for CABC Operation
- Internal Soft-Start Limits Inrush Current
- Wide 2.7 V to 5.5 V Input Voltage Range
- Adaptive Headroom Control
- Selectable Boost Frequency of 500 kHz or 1 MHz.
- 12-Bump WLCSP Package
- Protections
  - . Programmable 16 V / 24 V / 32 V / 35.5 V Overvoltage Protection
  - . LED Open / Short Circuit Protection
  - . Thermal Shutdown
  - . Current Limit

### Applications

- Mobile and Smart Phones LCD Backlight
- Tablets LCD Backlight
- Portable Devices LCD Backlight

### Description

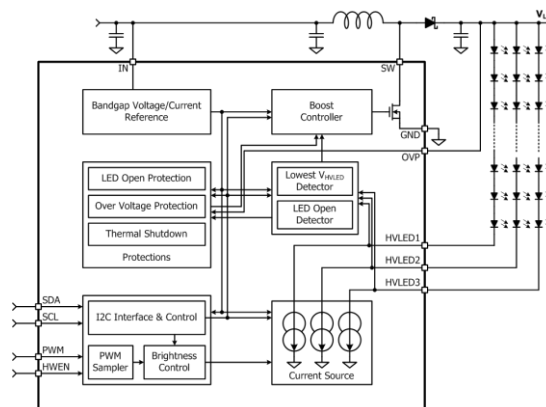
The SM5350 is a current mode boost converter which supplies the power and controls current in up to three strings of 8 LEDs per string. Programming is done over an I<sup>2</sup>C-compatible interface. The maximum LED current is adjustable from 5 mA to 29.8 mA. At any given maximum LED current the LED brightness is further adjusted with exponential or linear dimming steps. Additionally, pulsed width modulation (PWM) brightness control can be enabled allowing for LED current adjustment by a logic level PWM signal.

The boost switching frequency is programmable at 500 kHz for low switching loss performance or 1 MHz to allow the use of tiny low-profile inductors. Overvoltage protection is programmable at 16 V, 24 V, 32 V, or 35.5 V to accommodate a wide variety of LED configurations and Schottky diode/output capacitor combinations. The SM5350 is available in a 12-bump WLCSP package.

### Device Information

Part	Package	Size
SM5350	12 WLCSP	1.61 mm x 1.26 mm

### Simplified Block Diagram



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