



## High Efficiency Step Down LED Driver

### GENERAL DESCRIPTION

The SM8200 is a High efficiency step-down LED Driver, It has very wide input voltage range from 8V to 48V, The device is designed to operate in critical conduction mode (CrM) control scheme (This operating mode results in an average LED current which is equal to half of the peak switching current) optimized to drive high current LEDs. Thus highly efficient and accurate LED current regulation can be achieved. In CrM, the switching frequency will vary with line, load, inductance and switching loss, the current of the inductor starts at zero each switching cycle. So, external power MOSFET can significantly be reduced the peak spike voltage. A external sense resistor ( $R_{SN}$ ) sets the peak inductor current, which is regulated at 300mV (Typically), under this operating mode results in an average current which is equal to half of the peak switching current.

The SM8200 offers the following protection functions: LED open protection, LED short-circuit protection and IC junction over-temperature shutdown with auto recovery feature. The device is available in the low profile 6-lead SOT-23 package and is ideal for space constrained applications.

### FEATURES

- Wide input operating voltage range from 8V to 48V
- Low current sense threshold of 300mV
- Power efficiency up to 94%
- Application from a few mA to more than 1A output
- LED string from one to hundreds
- Excellence Control scheme (CrM)
- LED short-circuit protection (SCP)
- LED open-voltage protection (OVP)
- Junction over-temperature shutdown protection
- Cycle-by-cycle current limit
- Providing SOT-23 6-lead Package

### APPLICATIONS

- MR16
- High power LED drivers
- Signage and decorative LED lighting
- Automotive or Industrial

### TYPICAL APPLICATION CIRCUIT

