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PR4101 – 40V Buck Converter for Power LEDs

PREMA Semiconductor GmbH(www.prema.com) presents an LED driver designed to meet the requirements for a new generation of high-power LEDs.

The inductive converter PR4101 drives single or multiple LEDs with currents from 100mA up to several amps, depending on the configuration of external components, from a supply voltage of 9V up to 40V. The driver is suitable for applications with 12V or 24V batteries as well as in lighting fixtures with transformers, replacing halogen lamps there.

PR4101 offers a multitude of intelligent features, including convenient protection functions. An optional external temperature sensor reduces the output current at high temperatures and thus protects the LEDs from overheating. The IC itself is protected by an over temperature shutoff. When switching the circuit off via a control input, it consumes a standby current of less than 35µA. This allows to activate the driver with low power, e.g. by a remote control circuit.

The regular operation voltage of PR4101 ranges from 9 to 40V DC. With only a few additional components operation is also possible from 12V or 24V AC. PR4101's VDI input uses the phase-cut supply from conventional dimmers as duty cycle for the output current.

A simple circuit allows switching the light softly. The LED current is easily adjusted with an external sense resistor or with a pulse-width modulated signal on the PWM input with a duty cycle between 2 and 100%.

The efficiency varies between 70% and 95%, depending on the respective operating conditions. Furthermore, the EMI is improved by variation of the converter frequency over a range of 10%.

The PR4101 is especially suited for LCD backlighting and other LED operated lightings. Depending on the application different packages are available, the SO14 (PR4101A) offering all features and the SO8 package (PR4101B) for smaller sized PCBs without power-down and PWM function.

For further information about the PR4101 please click the link below:

http://www.prema.com/Application/pr4101_e.html

About Prema

PREMA Semiconductor is a leading ASIC manufacturer for a complete range of analog and mixed-signal ICs; from below 1V up to 100 V supply (analog and digital); from circuit development, chip layout to prototyping and series production; from simple chips to complex systems-on-chip solutions (SoC).

PREMA Semiconductor provides advanced, technologically leading bipolar and BiCMOS semiconductor technologies for Analog and Mixed-Signal Large Scale Integration (ALSI), for midsize to high volume projects. We offer rapid prototype turnarounds for short time-to-market periods.