

DC/DC convertor IC for driving white LEDs

The new A8431 from Allegro MicroSystems Europe is a non-inverting boost DC/DC convertor integrated circuit that provides a programmable constant-current output of up to 32 V from a 2.5-10 V DC input for driving white LEDs in series for backlighting and other applications in portable battery-operated equipment such as mobile phones, PDAs, MP3 players and cameras.

Up to four white LEDs can be driven at 20 mA from a single cell lithium-ion or a multicell NiMH power source, while up to two parallel strings of eight white LEDs can be driven at 20 mA by increasing the supply voltage up to 10 V. Driving the LEDs in series ensures identical currents and uniform brightness.

The A8431 incorporates a power switch and a feedback sense amplifier to minimise the need for external components. The output current can be set by adjusting a single external sense resistor, and can be varied with a voltage or a filtered PWM signal when dimming control is required. The high switching frequency of 1.2 MHz allows the use of small inductor and capacitor values.

The device features a 300 mA switch current limit and a 1 μ A shutdown current. An overvoltage protection pin eliminates the need for an external Zener diode on the output.

The A8431 is provided in a 0.75 mm high, 6-pin, 2 \times 3 mm MLP package. It is lead-free, with 100% matt tin lead-frame plating.
