

# ON Semiconductor Introduces Boost Converters That Simplify Drive Circuitry for White LED Backlighting of Color LCD Displ

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Continuing its focus on development of high performance power management solutions for the cell phones and portable products, ON Semiconductor (Nasdaq: ONNN) today introduced the NCP5007 and NCP5006 – fully integrated white LED boost converters that drive up to five white LEDs in series to simplify and miniaturize color LCD display illumination used in digital cameras, cell phones and PDAs.

“Last year, for the first time, the cell phone replacement market exceeded 50 percent of total units,” said Bernie Weir, ON Semiconductor applications director for Analog Portable and Consumer

Products. “This has created a more sophisticated audience of second- and third-generation consumers who now expect their cell phones to be multimedia voice communication devices with color LCD screens. To effectively support the increased display use time required by color screens, gaming, internet browsing and short messaging features, design engineers must now carefully consider every microwatt utilized.”

Highly power-efficient backlighting - accomplished in a compact PCB footprint - is required for the color LCD displays that are quickly becoming standard equipment in most new digital cellular handsets, PDAs and digital cameras. A series configured array of white LEDs is currently considered the most effective backlighting solution for the design of color LCD displays because this architecture achieves ideal current matching of the LEDs to provide uniform lighting.

The NCP5007 and NCP5006 offer just such a solution. The devices operate as a dc-dc boost converter that regulates the current through the LED string. Dimming is accomplished by applying a pulse width modulated signal (PWM) to change the average output current. In addition to being offered in a compact, low-profile SOT23-5 package, the NCP5007 and NCP5006 incorporate built-in over-voltage protection that eliminates the need for an external zener diode. This works to simplify and miniaturize the circuit. With an input voltage range of 2.7 volts (V) to 5.5 V, the devices are ideal for battery power applications that use 1-cell Li-Ion battery or 3/4-cell NiMH batteries. In addition, the NCP5006 is available in an industry standard pinout which makes it easy to implement in existing platforms.

### **Packaging and Price**

The NCP5007 and NCP5006 are offered in the compact, low-profile SOT23-5 package and priced at \$0.50 per unit in 10,000 unit quantities. For additional technical information or to request samples visit [onsemi.com/tech](http://onsemi.com/tech) .

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