

Exclara Launches High-Voltage LED Driver Solution

Exclara, Inc. announced a breakthrough in solid-state lighting (SSL) with the launch of the Exclara HVXTM family that enables the lowest cost, smallest size LED driver solutions while improving efficiency, power factor and quality. Using Exclara's patented high-voltage driver technology, the HVX family makes high-voltage LED driver economically and physically effective to use in a commercially available product, paving the way for mass-market, sub-\$10 LED lights.

The first member of the new family, the EXC100, is a single-chip power supply for high-voltage LEDs. This lowest-cost driver supports low parts count. Only a handful of supplementary components are needed, thereby reducing driver size and allowing it to fit into the base of a small bulb or on the LED board itself. For example, a 10W power supply only requires 10 to 15 components including the PCB. Integration of all control functionality required for high-voltage AC operation leads to lower cost solutions. This also allows a smaller overall power system and very low bill of materials (BOM) cost.

The HVX family has been specifically designed to deliver -- and improve upon -- the four essential performance requirements for volume LED applications: high efficiency, power factor correction, dimmer support and low EMI with maximum reliability and long life. HVX drivers achieve efficiencies of 90-96%, while the typical flyback DC system achieves 75-82%. HVX-based systems offer a high power factor because there is no utilization of reactive components, and HVX achieves even higher power factors as the internal controller performs the power factor correction. HVX includes dimming capability and is compatible with most dimmers on the market. As for EMI, while HVX performs internal switching, it is implemented in a way that does not produce large harmonics and meets FCC requirements without the use of external components.

We forecast that the market for LED driver ICs for lighting applications will grow at nearly 50% compounded annually, but that segment needs innovative and low-cost solutions that also meet industry and regulatory performance standards, says Dr. Tom Hausken of Strategies Unlimited, a market research firm specializing in LEDs and LED lighting. Exclara's product targets that segment with its novel high-voltage driver design.

The transformation of lighting technology—with the Edison bulb giving way to the LED has been predicted for more than a decade. The challenge behind LED lighting, though, has been the inability to produce a high-performance product at a low enough cost to open the door to mass market penetration, said Shri Dodani, president and CEO of Exclara. Exclara is the first company to offer a LED driver solution that is economically and physically effective to use in commercial systems. It will usher in the sub-\$10 LED bulb and pave the way for widespread adoption of

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LED lighting.

EXC100 Features

The EXC100 supports operation either directly from AC line or from dimmers, making it an excellent drop-in choice. An HVX-based driver system does not require use of an electrolytic capacitor and therefore can match the operating life of LEDs. It also supports millions of ?on/off? actions without failure, a limitation in the traditional DC based drivers. The EXC100 also helps maximize end product safety with advanced features such as protection against over-temperature and output overvoltage to guard against a LED failure. It complies with both UL/CE and FCC requirements in the USA and with equivalent counterparts worldwide.

Availability and Pricing

The EXC100 is packaged in QFN-28L and is available in sample quantities, with full production expected in August 2011. The EXC100 is priced at \$1.29 in quantities of 250K pieces. A broad range of reference designs are available for the EXC100, enabling LED system designers to quickly and easily get their products to market. Reference designs include T8, T10 and A19 form factors and support for worldwide input VAC and a range of power output. The design kits include schematics and Gerber files as well as both a driver board design and a light source LED board design. All use standard low-cost parts.

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