

## New LED Driver Design from Power Integrations Maximizes Efficiency of High-Voltage LEDs, Targets Compact B10, GU10, E17 and A19 Bulbs

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DER-297 uses highly integrated LinkSwitch-PL™ IC in power factor corrected, easy-to-manufacture driver for Cree's new XLamp® XT-E and XLamp XM-L LEDs

SAN JOSE, Calif.--(BUSINESS WIRE)-- Power Integrations (Nasdaq: **POWI**), maker of the world's most efficient, longest-lasting off-line LED driver ICs, today published a reference design (**DER-297**) describing a high-efficiency, ultra-compact driver for a B10-style LED light bulb. Based on Power Integrations' **LinkSwitch-PL** non-isolated, single-stage LED driver IC, the power supply is specifically tailored for use with high-voltage LEDs such as the recently announced XLamp XM-L and XLamp XT-E ranges from Cree. **DER-297** provides the high-voltage output required by the LEDs, optimizing overall system efficiency by reducing power lost due to current flow in the driver inductor and output diode.

The **DER-297** power supply design is very small and cost-effective with a BOM of only 20 components. The high level of integration in the **LinkSwitch-PL** device combines PFC and constant-current functions into a single buck-boost stage requiring only a tiny inductor. The design reaches 87% efficiency at 115 VAC for a 4.3 W LED driver (86% for 2.9 W output) while achieving a power factor greater than 0.9, easily meeting EN61000-3-2 Class C limits, and creating less than 20% Total Harmonic Distortion (THD).

Commented Andrew Smith, product marketing manager for LED applications at Power Integrations: "The tiny B10 and similarly compact form factors are very challenging for LED lamps. The **LinkSwitch-PL** device used in **DER-297** permits the driver to be both small and highly efficient, which allows us to pack the design into a B10 base without using potting compound or compromising performance. The simple BOM also means that the converter has a very

low cost, making **DER-297** ideal for this increasingly price-competitive market."

Mark McClear, applications engineering director at Cree, added: "The very low-volume enclosure of the B10 bulb creates a substantial engineering challenge for the driver designer. Power Integrations' **LinkSwitch-PL** device configured in the buck-boost topology not only drives the LEDs beautifully, but easily meets the physical and thermal specifications due to the low component count and high operational efficiency."

**DER-297** is available at <http://www.powerint.com/sites/default/files/PDFFiles/der297.pdf>.

## About Power Integrations

**Power Integrations, Inc.**, is a Silicon Valley-based supplier of high-voltage integrated circuits and other high-voltage components used in energy-efficient power conversion. The company's innovative technologies enable compact, reliable AC-DC power supplies for a vast range of electronic products including mobile devices, TVs, PCs, appliances, smart utility meters and LED lights. Since its introduction in 1998, Power Integrations' EcoSmart® energy-efficiency technology has prevented billions of dollars' worth of energy waste and millions of tons of carbon emissions. Reflecting the environmental benefits of the company's products, Power Integrations' stock is included in the NASDAQ® Clean Edge® Green Energy Index, The Cleantech Index®, and the Ardour Global IndexSM. For more information, including design-support tools and resources, please visit [www.powerint.com](http://www.powerint.com); visit Power Integrations' **Green Room** for a comprehensive guide to energy-efficiency standards around the world.

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## Media Contact

Power Integrations, Inc.

Peter Rogerson, 408-414-8573

[progerson@powerint.com](mailto:progerson@powerint.com)

or

## Press Agency Contact

Billings Europe PR Agency

Nick Foot, +44 (0) 1491-636 393

[nick.foot@billings-europe.com](mailto:nick.foot@billings-europe.com)

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