

# Power Integrations Introduces Reference Design for 5 W LED Lamps with PFC and Flicker-Free TRIAC Dimming

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LinkSwitch™-PL retrofit design minimizes solution size, targets A19 LED lamps

SAN JOSE, Calif.--(BUSINESS WIRE)-- Power Integrations (Nasdaq: **POWI**), the leader in high-voltage integrated circuits for energy-efficient solid-state lighting, today announced a new reference design (**RDK-251**) for a 5-watt offline LED driver that includes flicker-free TRIAC dimming and single-stage power factor correction (PFC). The reference design is based on Power Integrations' LNK457DG, a member of the innovative **LinkSwitch-PL** family of LED driver ICs optimized for compact, non-isolated installations.

The new **reference design** provides a single constant-current output of 350 mA at a nominal LED string voltage of 15 V. The output current can be reduced using a standard AC mains TRIAC dimmer down to 1% (3 mA) without instability or flickering of the LED array. The supply is compatible with both low-cost, leading-edge dimmers and more sophisticated trailing-edge dimmers. It operates over the universal AC input range (85 VAC to 265 VAC, 47 Hz to 63 Hz) and can withstand an input range of 0 VAC to 300 VAC, improving field reliability and lifetime during line sags and swells.

Power factor is high (>0.9) and input current total harmonic distortion (THD) is low (<10% at 115 VAC and <15% at 230 VAC), meeting international requirements and enabling a single universal input design to be used worldwide. The new reference design is suitable for compact form factors due to its low component count of 38 passives and discretes (29 for non-dimming applications), in addition to the **LinkSwitch-PL** device. Manufacturability and longevity are also enhanced by the elimination of passive components required in older LED driver designs, including bulky and unreliable high-voltage electrolytic capacitors. **LinkSwitch-PL**, like its isolated counterpart

**LinkSwitch-PH**, incorporates the controller and high-voltage power MOSFET into a single silicon die, simplifying PCB layout by further minimizing component count and eliminating parasitics between the controller and high-voltage power MOSFET.

The board fits inside a pear-shaped A19 LED replacement lamp with an E26/27 base. **RDK-251** contains full power supply specifications, schematic, bill of materials, transformer documentation, printed circuit board layout, and performance data.

Comments Bill Weiss, lighting business development manager at Power Integrations: "This design enables SSL lamps with high-quality dimming, high power factor, low THD, small form factors, and high reliability. All regulatory requirements for energy efficiency are met or exceeded, and solid-state lighting manufacturers can create one platform design that operates in both low-line and high-line installations. For system designers, this compact, high-performance design speeds up their time-to-market."

**LinkSwitch-PL** devices are available now in SO-8, eSOP™ and eDIP™ packages and are priced as low as \$0.86 each for 10,000-piece quantities. **RDK-251** and **RDR-251** are available now on the Power Integrations website at [www.powerint.com/rdk](http://www.powerint.com/rdk).

## About Power Integrations

Power Integrations is the leading supplier of high-voltage integrated circuits used in energy-efficient power conversion. The company's innovative technology enables compact, energy-efficient power supplies in a wide range of electronic products, in AC-DC, DC-DC and LED lighting applications. Since its introduction in 1998, Power Integrations' EcoSmart™ energy-efficiency technology has saved an estimated \$4.5 billion of standby energy waste and prevented millions of tons of CO2 emissions. The company's **Green Room** web site provides a wealth of information about "energy vampires" and the issue of standby energy waste, along with a comprehensive guide to energy-efficiency standards around the world. Reflecting the environmental benefits of EcoSmart technology, Power Integrations is included in clean-technology stock indices sponsored by the **Cleantech Group** (Amex: CTIUS) and **Clean Edge** (Nasdaq: CELS). For more information, please visit [www.powerint.com](http://www.powerint.com).

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