

## NEWS RELEASE

# Power Integrations Combines Programmability, High Efficiency and Small Form Factor in New Zero-Voltage-Switching Power-Supply ICs

11/15/2022

InnoSwitch4-Pro family of flyback switchers enable over 95 percent efficient, compact, USB PD and Universal Fast Charging Specification adapters up to 220 W

MUNICH--(BUSINESS WIRE)-- **Electronica – Power Integrations** (NASDAQ: **POWI**), the leader in high-voltage integrated circuits (ICs) for energy-efficient power conversion, today announced the **InnoSwitch™4-Pro** family of digitally controllable, off-line CV/CC Zero Voltage Switching (ZVS) flyback ICs, which substantially reduce the size of power adapters. Incorporating a robust PowiGaN gallium-nitride primary switch and steady-state switching frequency of up to 140 kHz, the highly integrated devices reduce the component count and PCB area required for ultra-compact adapters for cellphone, notebook, tablet and multi-port accessories.

Power Integrations' InnoSwitch4-Pro family of flyback switchers enable over 95% efficient, compact, USB PD and Universal Fast Charging Specification (UFCS) adapters up to 220 W  
(Photo: Business Wire)

"InnoSwitch4-Pro ICs interface seamlessly with Power Integrations' ClampZero™ family of active clamp ICs to achieve

ZVS in both continuous conduction mode (CCM) and discontinuous conduction mode (DCM)," stated Aditya Kulkarni, product marketing manager at Power Integrations. "ZVS, combined with our PowiGaN™ technology, virtually eliminates switching losses. Efficiency exceeds 95 percent, which enables designers to eliminate the heat sinks, spreaders and potting materials typically required for thermal management."

Further size reduction of the adapter can be achieved by the use of a MinE-CAP™ device in combination with InnoSwitch4-Pro and ClampZero ICs. Based also on PowiGaN technology, MinE-CAP ICs enable input capacitance

size reduction of approximately 40 percent.

Capable of delivering up to 220 W, **InnoSwitch4-Pro** ICs combine a 750 V PowiGaN primary switch, controller, FluxLink™ reinforced isolation feedback link for secondary-side control, I2C interface, active clamp drive and synchronous rectification in a compact InSOP™-28 package. The high level of integration greatly simplifies the development and manufacturing of fully programmable, highly efficient power supplies. These programmable flyback ICs in combination with ClampZero and MinE-CAP companion devices enable the ultra-compact and slim form factors highly desired by both OEM accessory and aftermarket USB PD and Universal Fast Charging Specification (UFCS) adapters. UFCS is the new standard released by the China Communications Standards Association.

A unique control algorithm is employed by the InnoSwitch4-Pro ICs to enable ZVS in both DCM and CCM. When paired with the ClampZero IC, the algorithm allows for higher-frequency operation without a corresponding drop in efficiency. InnoSwitch4-Pro also supports quasi-resonant switching in DCM and CCM when used as a standalone product. DCM-only operation can be selected to reduce SR FET voltage stress. The new ICs also feature an optimized command set to reduce I2C traffic.

InnoSwitch4-Pro flyback switcher ICs provide exceptional CV/CC accuracy, independent of external components, and consume less than 30 mW no-load while offering line-sensing and comprehensive protection features. Devices are fully protected featuring auto-restart or latching fault response for output overvoltage and undervoltage protection, multiple output undervoltage fault thresholds, latching or hysteretic primary over-temperature protection, and output bus switch short-circuit protection.

### Availability & Resources

Two reference designs, **DER-960** (100 W), **RDK-942** (65 W), are available for designers wishing to evaluate the InnoSwitch4-Pro IC. Devices are priced at \$1.85 for 10,000-unit quantities. For further information contact a Power Integrations sales representative or one of the company's authorized worldwide distributors: **Digi-Key**, **Farnell**, **Mouser** and **RS Components**, or visit **power.com**. For more information, watch this **video**.

### About Power Integrations

**Power Integrations, Inc.** is a leading innovator in semiconductor technologies for high-voltage power conversion. The company's products are key building blocks in the clean-power ecosystem, enabling the generation of renewable energy as well as the efficient transmission and consumption of power in applications ranging from milliwatts to megawatts. For more information, please visit **www.power.com**.

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Source: Power Integrations, Inc.