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NEWS RELEASE

# Power Integrations Incorporates Lossless Zero-Cross Detection and X-Capacitor Discharge into New LinkSwitch-TNZ Offline Switcher ICs

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LinkSwitch-TNZ compact switcher reduces component count, addresses smart home and appliance applications

SAN JOSE, Calif.--(BUSINESS WIRE)-- **Power Integrations** (Nasdaq: **POWI**), the leader in high-voltage integrated circuits for energy-efficient power conversion, today announced **LinkSwitch™-TNZ**, a new switching power supply IC that combines offline power conversion, lossless zero-cross detection and, optionally, X-capacitor discharge functions in a compact SO-8C package. The highly efficient LinkSwitch-TNZ IC can be used for non-isolated buck and buck-boost power supplies up to 575 mA output current and provides up to 12 W output for universal-input isolated flyback designs.

Power Integrations Incorporates Lossless Zero-Cross Detection and X-Capacitor Discharge into New LinkSwitch-TNZ Offline Switcher ICs. LinkSwitch-TNZ compact switcher reduces component count, addresses smart home and appliance applications. (Photo: Business Wire)

Adnaan Lokhandwala, product marketing manager at Power Integrations said: “The new LinkSwitch-TNZ ICs provide an accurate signal indicating that the sinusoidal AC line is at zero volts. This signal is used by smart home and building automation (HBA) products and appliances to control the switching of relays, IGBTs and TRIACs to minimize switching stress and system in-rush current. LinkSwitch-TNZ’s detection of the zero-cross point consumes less than 5 mW, allowing systems to reduce standby power losses versus alternative approaches that require ten or more discrete components and burn 50 to 100 mW of continuous power.”

Note to editors: You can view a video overview of the LinkSwitch-TNZ IC **here**.

Devices such as light switches, dimmers, sensors, and plugs connect and disconnect the AC line periodically using a relay or TRIAC. A discrete circuit is typically implemented to detect the AC line zero-crossing to control the turn-on transition of the main power device while reducing switching losses and in-rush current. This approach requires many components and is very lossy, consuming almost half of the standby power budget in some cases. Similarly, appliances often use a discrete zero-cross detection circuit to control motor and MCU timing. These applications also require an auxiliary power supply for functions such as wireless connectivity, gate drivers, sensors and displays.

LinkSwitch-TNZ ICs provide best-in-class light-load efficiencies, enabling more system features to be powered while meeting stringent standby regulations such as: the European Commission (EC) standard for home appliances (1275), which requires equipment to consume no more than 0.5 W in standby or in off mode; ENERGY STAR's version 1.1 for Smart Home Energy Management Systems (SHEMS), which limits standby consumption of smart lighting control devices to 0.5 W; and China's GB24849, which limits the off-mode power consumption in microwave ovens to 0.5 W. LinkSwitch-TNZ ICs also reduce component count by 40% or more when compared to discrete designs.

Optionally, an X-capacitor discharge function can also be included in the package for high power applications, leading to greater PCB space reduction, low BOM count and increased reliability (LNK331x).

LinkSwitch-TNZ switching power supply ICs enable ±3% regulation across line and load, no-load consumption of less than 30 mW with external bias and have an IC standby current of less than 100 µA. Parts are simple to design in, feature an integrated soft start, and work with both isolated and non-isolated topologies.

## Availability & Resources

LinkSwitch-TNZ switching power supply ICs are priced at $ 0.84 in volume for one thousand units. Four reference design examples are available for download. **DER-874** and RDR-866 are non-isolated buck designs delivering 6V/80mA output and 5V/500mA output respectively. **RDR-877** describes a 12V/0.5A output isolated flyback with secondary-side ZCD signal, while **DER-879** describes a 12V/0.75A and 5V/0.2A isolated flyback with ZCD and integrated X-capacitor discharge circuitry. 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**.

## 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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