



## **Diodes Incorporated's Synchronous Rectifier Controller Delivers Higher Efficiency and Saves Board Space**

**Plano, Texas – February 27, 2018** – Diodes Incorporated (Nasdaq: DIOD), a leading global manufacturer and supplier of high-quality application specific standard products within the broad discrete, logic, analog and mixed-signal semiconductor markets, today announced the ZXGD3113. This synchronous rectifier controller continues Diodes' strategy to meet the industry-wide demand for increased power density and improved efficiency. When coupled with a MOSFET, the pairing can be used to replace lossy Schottky rectifiers in power supplies based on a flyback or resonant converter topology. The ZXGD3113 controls an external MOSFET, such as the 100V 16mΩ N-channel DMT10H015LPS, configured to operate as an ideal diode. Replacing a Schottky rectifier with the ZXGD3113+MOSFET can significantly increase the efficiency of AC-DC power supplies targeting the industrial, consumer and telecommunications markets.

With improved efficiency, this negates the need for a heatsink to save space compared to a lossy Schottky rectifier. Furthermore, the smaller form-factor SOT26 reduces the solution size from the industry-standard SO8 and, by operating up to 250kHz, the PSU designers can use smaller transformers, further saving space and BOM costs.

Providing the control to a low  $R_{DS(on)}$  MOSFET, the ZXGD3113 achieves greater efficiency by using proportional gate drive, enabling it to rapidly turn off the synchronous MOSFET when operating in continuous conduction mode (CCM), although it can also operate in discontinuous conduction mode (DCM) and critical conduction mode (CrCM). Other features include a low threshold voltage of less than 10mV enabling the control of low  $R_{DS(on)}$  MOSFET, and peak source/sink currents of 1.5/3A, respectively, to support efficient driving of the synchronous MOSFET. A wide operating voltage of between 3.5V to 40V means the device can be driven directly by a PSU output as low as 3.5V, while giving sufficient headroom to handle overvoltage

spikes or operate at higher  $V_{CC}$  rails such as 24V. Further information is available at [www.diodes.com](http://www.diodes.com).

### **About Diodes Incorporated**

Diodes Incorporated (Nasdaq: DIOD), a Standard and Poor's SmallCap 600 and Russell 3000 Index company, is a leading global manufacturer and supplier of high-quality application specific standard products within the broad discrete, logic, analog and mixed-signal semiconductor markets. Diodes serves the consumer electronics, computing, communications, industrial, and automotive markets. Diodes' products include diodes, rectifiers, transistors, MOSFETs, protection devices, function-specific arrays, single gate logic, amplifiers and comparators, Hall-effect and temperature sensors, power management devices, including LED drivers, AC-DC converters and controllers, DC-DC switching and linear voltage regulators, and voltage references along with special function devices, such as USB power switches, load switches, voltage supervisors, and motor controllers. Diodes' corporate headquarters and Americas' sales office are located in Plano, Texas and Milpitas, California. Design, marketing, and engineering centers are located in Plano; Milpitas; Taipei, Taiwan; Taoyuan City, Taiwan; Zhubei City, Taiwan; Manchester, England; and Neuhaus, Germany. Diodes' wafer fabrication facilities are located in Manchester and Shanghai, China. Diodes has assembly and test facilities located in Neuhaus, Shanghai, Jinan, Chengdu, and Yangzhou, China. Additional engineering, sales, warehouse, and logistics offices are located in Taipei; Hong Kong; Manchester; Shanghai; Shenzhen, China; Seongnam-si, South Korea; and Munich, Germany, with support offices throughout the world.

Recent news releases, annual reports and SEC filings are available at the Company's website: <http://www.diodes.com>. Written requests may be sent directly to the Company, or they may be e-mailed to: [diodes-fin@diodes.com](mailto:diodes-fin@diodes.com).

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