



## **Motor Pre-Driver from Diodes Incorporated Simplifies Speed Control**

**Plano, Texas – June 26, 2013** – Diodes Incorporated (Nasdaq: DIOD), a leading global manufacturer and supplier of high-quality application specific standard products within the broad discrete, logic and analog semiconductor markets, today announced the ZXBM1021. This single-phase, brushless, DC motor pre-driver provides a small, feature-rich variable speed control solution for cooling fans, blowers, extractors, motors and pumps deployed in a variety of consumer and industrial products. By integrating an array of normally external components, including a PWM integrator and MOSFET buffers, this flexible pre-driver enables designers to greatly simplify system architecture and reduce overall board component count.

The pre-driver can closely control motor speed via the direct application of either an external PWM signal, DC voltage signal or thermistor network input. Through the integration of Hall bias and amplifier circuits, compatibility with all types of Hall effect sensor is assured. An open-collector frequency generator pin provides a tachometer output enabling external monitoring of rotation and speed. To prevent motor stalling or speed falling below a minimum value in the event of loss of control signals, the ZXBM1021 allows the setting of a minimum speed.

Offering high-side and low-side drive outputs, with 50mA sink and 100mA source/sink capability, the ZXBM1021 can be accurately matched to the needs of external H-bridge switches and motor powers without the need for additional buffering. A separate low-side output drive supply voltage pin also provides the ability to adjust external low-side MOSFET turn-on speed independently of turn-off speed to help minimize EMI noise and shoot-through.

An operating voltage range of 6.8V to 18V means the pre-driver will support 12V motors directly, and 24V and 48V motors via an external voltage regulator. With a programmable over current limit, the pre-driver is able to detect locked rotor conditions and protect the H-bridge and motor windings from over-heating or burn-out, instigating a soft start on removal of the rotor lock to minimize motor inrush current.

Supplied in the small footprint, low-profile and thermally enhanced U-QFN4040-20 chip package and with a wide operating temperature range of -40°C to +110°C, the ZXBM1021 is well-suited for space-constrained and thermally demanding applications. A QSOP20-packaged variant will be introduced later in the year. For further information, visit the Company's website 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 and analog semiconductor markets. Diodes serves the consumer electronics, computing, communications, industrial, and automotive markets. Diodes' products include diodes, rectifiers, transistors, MOSFETs, protection devices, functional 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, logistics center, and Americas' sales office are located in Plano, Texas. Design, marketing, and engineering centers are located in Plano; San Jose, California; Taipei, Taiwan; Manchester, England; and Neuhaus, Germany. Diodes' wafer fabrication facilities are located in Kansas City, Missouri and Manchester, with two more located in Shanghai, China. In addition, two assembly-test facilities are located in Shanghai; two are located in Chengdu, China, with one in Neuhaus and one in Taipei. Additional engineering, sales, warehouse, and logistics offices are located in Fort Worth, Texas; Taipei; Hong Kong; Manchester; Shanghai; Shenzhen, China; Seongnam-si, South Korea; Suwon, South Korea; Tokyo, Japan; and Munich, Germany, with support offices throughout the world. For further information, including SEC filings, visit Diodes' website at <http://www.diodes.com>.

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