



*For immediate release*

## **GPIO Port Expander From Diodes Incorporated Provides I<sup>2</sup>C Interface And Level Shifting For Any Peripheral**

**Plano, TX – March 13, 2019** – 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 PI4IOE5V6416 16-bit I/O expander, which enables any digital device to be accessed and controlled over an I<sup>2</sup>C interface, across a range of input and output voltages from 1.8V to 5V. The PI4IOE5V6416 offers an ultra-low power solution to expanding the available GPIO on a microprocessor, microcontroller, ASSP, ASIC, or FPGA, using the ubiquitous I<sup>2</sup>C interface. With 16 individually configurable I/Os, developers can easily add an I<sup>2</sup>C interface to legacy peripherals such as keypads, push-button switches, or digital sensors. The I<sup>2</sup>C bus complies with both fast and standard modes.

Each of the 16 ports on the PI4IOE5V6416 is configurable as either an input or output by writing to the relevant register. All of the I/O pins feature a push/pull FET configuration: when configured as an input the FETs are turned off; when configured as an output the corresponding FET provides a low impedance path to either  $V_{DD(P)}$  or  $V_{SS}$ . Each port also features a programmable pull-up or pull-down resistor and programmable output current. A programmable latch is also provided for each pin when configured as an input.

As the PI4IOE5V6416 provides flexible, bidirectional voltage level shifting between the host and the outputs, it represents an ideal solution to interfacing legacy digital devices operating at up to 5.5V, with modern hosts operating at supply voltages as low as 1.65V.

In addition to providing bidirectional voltage level shifting and highly configurable I/O, the PI4IOE5V6416 also offers a maskable open-drain active-low interrupt output that can be configured to trigger on the change of state on any of the 16 GPIOs. This powerful feature has many potential uses where a specific condition can be used to initiate a system-level action, avoiding the need for the host to continuously poll the peripheral.

The PI4IOE5V6416 offers exceptionally low stand-by current consumption of just 1.5 $\mu$ A at 5V and 1.0 $\mu$ A at 3.3V. Active current consumption during continuous register read at an I<sup>2</sup>C bus speed of 400kHz and supply voltage of 1.65 to 2.3V is typically 20 $\mu$ A (45 $\mu$ A, max).

The PI4IOE5V6416 is available in a 24-pin TQFN (PI4IOE5V6416LE) package or 24-pin TSSOP (PI4IOE5V6416ZDE) package. 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 also has timing, connectivity, switching, and signal integrity solutions for high-speed signals. 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 facility is located in Manchester, with an additional facility located in Shanghai, China. Diodes has assembly and test facilities located in Shanghai, Jinan, Chengdu, and Yangzhou, China, as well as in Hong Kong, Neuhaus, and Taipei. Additional engineering, sales, warehouse, and logistics offices are located in Taipei; Hong Kong; Manchester; Shanghai; Shenzhen, China; Seongnam-si, South Korea; Munich, Germany; and Tokyo, Japan, 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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