



Self-Adapting USB 2.0 Signal Conditioner IC from Diodes Incorporated Saves Power and Simplifies System Design

Plano, Texas – April 25, 2024 – Diodes Incorporated (Diodes) (Nasdaq: DIOD) today announces the introduction of the [PI5USB212](#), a USB 2.0 signal conditioner that operates from a supply voltage down to 2.3V. Designed for use in notebooks, PCs, docking stations, cable extenders, TVs, and monitors, the PI5USB212 automatically detects a USB 2.0 high-speed connection. It also preserves signal integrity when driving long PCB traces or cables of up to 5 meters.

This IC symmetrically boosts the USB D+ and D– channels for common-mode stability and applies pre-emphasis to compensate for intersymbol interference (ISI). The wide supply voltage range simplifies system design and extends the operating window of portable and battery-powered equipment.

The device is configured using either I2C commands or pin strapping, adjusting signal-boost and ISI-compensation levels. It has two control pins (boost/SEN); pulling the boost pin down via different resistors controls the AC gain/pre-emphasis levels. The SEN pin selects high, low, or medium receiver sensitivity (DC gain) to ensure optimum signal integrity, depending on channel conditions. It automatically detects a low-speed (LS) mode/full-speed (FS) connection to avoid applying signal compensation when not needed.

The PI5USB212 is compatible with USB 2.0, OTG 2.0, and battery-charging (BC) 1.2, and supports USB features including device-attach and high-speed detection, as well as a 5.5V tolerance. It automatically detects when no USB attachment is present and saves energy by reducing its supply current to 0.7mA (typical), and 13µA (typical) when disabled via the RSTN disable pin.

The [PI5USB212](#) is supplied in a 12-pin, 1.6mm x 1.6mm, quad flat no-lead (QFN) package, and is available at \$2.70 in 3,500-piece quantities.

About Diodes Incorporated

Diodes Incorporated (Nasdaq: DIOD), a Standard and Poor's SmallCap 600 and Russell 3000 Index company, delivers high-quality semiconductor products to the world's leading companies in the automotive, industrial, computing, consumer electronics, and communications markets. We leverage our expanded product portfolio of discrete, analog, and mixed-signal products and leading-edge packaging technology to meet customers' needs. Our broad range of application-specific solutions and solutions-focused sales, coupled with worldwide operations of 32 sites, including engineering, testing, manufacturing, and customer service, enables us to be a premier provider for high-volume, high-growth markets. For more information visit www.diodes.com.

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