



Mode-Programmable Synchronous Boost Converter from Diodes Incorporated Raises Power Efficiency Levels in Consumer Devices

Plano, Texas – July 26, 2022 – Diodes Incorporated (Diodes) (Nasdaq: DIOD) has introduced a high-efficiency synchronous boost converter. The DIODES™ [AP72250](#) is targeted at step-up conversion in consumer and industrial applications where small form factors are a priority. These include battery-powered devices, USB power supply units, power banks, supercapacitor charging equipment, and metering systems.

The AP72250 supports a 900kHz switching frequency with a 20µA quiescent current (I_Q). It covers a wide input voltage range between 0.6V and 5.5V, with a minimum 1V input startup, and has a 1.7V to 5.5V output voltage range. Integrated into this boost converter are a 20mΩ high-side power MOSFET and a 26mΩ low-side power MOSFET.

Several different operating modes can be selected for the AP72250, and these can be programmed according to users' needs. They are: pulse frequency modulation (PFM), ultra-sonic mode (USM), and forced pulse width modulation (FPWM) mode. This choice of modes allows engineers to adjust operation under either heavy or light load conditions in order to maximize efficiency. As a result, even when in light load situations, up to 89% efficiency can be attained. Through its USM mode, switching in the audible frequency range is prevented.

The AP72250 has excellent line and load transient responses, and delivers a seamless transition between boost and pass-through operation (in applications where this is required). The peak current mode control scheme of the AP72250 allows it to handle a wide variety of input-to-output ratios. Consequently, the number of external components needed to support it are significantly less than for competing solutions, and this keeps the bill-of-materials (BOM) costs down. Undervoltage lockout, thermal shutdown, peak current limit, negative current limit, and output short-circuit protection functions are also included.

The [AP72250](#) is supplied in a WLCSP-12 package (measuring 1.75mm x 1.35mm x 0.45mm). It is available at \$0.31 in 1000 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 consumer electronics, computing, communications, industrial, and automotive 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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