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Alpha and Omega Semiconductor Announces Application-Specific EZBuck™ Regulator to Power 5V System Rails

AOZ2295QI-05 with Ultrasonic Mode and 5V LDO Provides Highest Power Density Solution for System 5V Rails

SUNNYVALE, Calif., July 12, 2023, [Alpha and Omega Semiconductor Limited](#) (AOS) (Nasdaq: AOSL), a designer, developer, and global supplier of a broad range of power discretes, ICs, modules, and digital power solutions, today introduced a new family of application-specific EZBuck™ regulators. The highly integrated [AOZ2295QI-05](#) has the most compact footprint in the industry to support 5V rails in desktop and laptop computing systems.

High-performance, personal computing systems, supporting add-on features, and more USB type-C ports, increase the 5V output current to more than 10A today. In such feature-rich personal computing systems, typical power implementations require either a controller with external discrete power FETs or two low-current converters to achieve the high current required of the 5V rail. This results in increased component count and larger PCB area, increasing system cost. In contrast, AOS' highly integrated solution includes all the power silicon in a single, thermally enhanced QFN 4mm x 4mm package for 12A, providing a compact solution size with industrial-leading efficiency and thermal performance.

Technical Highlights

- The AOZ2295QI-05 converter includes features specifically designed to meet key requirements of the 5V rail. The AOZ2295QI-05 is designed with a T_{ON} extension mode so the converter can still output stable 5V while the battery cell voltage drops to 5.5V.
- In many practical design and application environments, there is also a high possibility of having audible noise when system 5V goes to light load with less than 20kHz switching frequency. AOS' proprietary Constant On-Time architecture provides an ultrasonic mode to guarantee operating frequency working above 30kHz to prevent audible noise in the full application range.
- The new device also features a high level of integration and protection features of the AOS EZBuck™ product family; featuring a PGOOD output, an integrated bootstrap diode, and an integrated soft start. Protection features include cycle-by-cycle current limit, short-circuit protection (SCP), Overvoltage Protection (OVP), and Thermal shutdown.

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Key Features

- Wide input voltage range: 5.5V to 25V
- High Current Capability: 12A
- High Peak Current: 16A
- Low RDS(ON) internal NFETs: 7mΩ HS FET, 3.6mΩ LS FET
- 5V LDO Output
- T_{ON} Extension Mode
- Ultrasonic Mode
- Thermally enhanced 4mm x 4mm QFN package to support up to 60W output power

“The load current capability of the AOZ2295QI-05 offers designers an easy-to-use solution to support high power 5V system in a compact size. In today’s ever-shrinking desktop motherboard or laptop form factors, PCB real estate is at a premium. Utilizing AOS’ EZBuck™ regulator technology enables AOS to ease the job of the system designer,” said Wayne Lee, Power IC Marketing at AOS.

Pricing and Availability

The AOZ2295QI-05 is immediately available in production quantities with a lead time of 12 weeks. The unit price for 1,000 pieces is \$1.48 for the AOZ2295QI-05.

About AOS

Alpha and Omega Semiconductor Limited, or [AOS](#), is a designer, developer, and global supplier of a broad range of power discretes, ICs, modules, and digital power solutions, including a wide portfolio of [Power MOSFET](#), [IGBT](#), [IPM](#), [TVS](#), [Gate Drivers](#), [SiC](#), [Power IC](#), and [Digital Power](#) products. AOS has developed extensive intellectual property and technical knowledge that encompasses the latest advancements in the power semiconductor industry, which enables us to introduce innovative products to address the increasingly complex power requirements of advanced electronics. AOS differentiates itself by integrating its Discrete and IC semiconductor process technology, product design, and advanced packaging know-how to develop high-performance power management solutions. AOS’ portfolio of products targets high-volume applications, including portable computers, flat-panel TVs, LED lighting, smartphones, battery packs, consumer and industrial motor controls, automotive electronics, and power supplies for TVs, computers, servers, and telecommunications equipment. For more information, please visit www.aosmd.com.

Forward-Looking Statements

This press release contains forward-looking statements that are based on current expectations, estimates, forecasts, and projections of future performance based on management’s judgment, beliefs, current trends, and anticipated product performance. These forward-looking statements include, without limitation, references to the efficiency and capability of new products and the potential to expand into new markets. Forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. These factors include but are not limited to, the actual product performance in volume production, the quality and reliability of the product, our ability to achieve design wins, the general business and economic conditions, the state of the semiconductor industry, and other risks as described in the Company’s annual report and other filings with the U.S. Securities and Exchange Commission. Although the Company believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee future results, level of activity, performance, or achievements. You should not place undue reliance on these forward-looking statements. All information provided in this press release is as of today’s date unless otherwise stated, and AOS undertakes no duty to update such information except as required under applicable law.

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