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Alpha and Omega Semiconductor Introduces Digital Multiphase Controller for Telecom and General-Purpose Applications

AOZ97774 Dual Output 3+1 Phase Digital VCOT controller with pin strap selectable device configurations. Provides high performance and flexibility to support multiple platforms with a single device

SUNNYVALE, Calif., Aug. 18, 2021, [Alpha and Omega Semiconductor Limited](#) (AOS) (Nasdaq: AOSL), a designer, developer, and global supplier of a broad range of power semiconductors, power ICs, and digital power products, today introduces the first product of the AOS Digital Controller product portfolio. The [AOZ97774QE](#) is offered in a QFN 5mm x 5mm package and provides the industry's most flexible DC/DC controller supporting 5G Wireless, Networking, Optical Communication, and General-Purpose DC/DC applications.

The AOZ97774QE provides DC/DC power conversion from the 12V power rail to Point-of-Load voltage for all main subsystems of the 5G wireless network, including CU, DU, and RU platforms. The part can be used for all 12V input applications where multi-phase power is required, and the main output is three phases or less. The Control Unit (CU), Digital Unit (DU), and Radio Unit (RU) are all critical subsystems that require the higher power that is supported with the AOZ97774QE and AOS Power Stages. The AOZ97774 offers up to 15 stored pin-strapped configurations, which is significantly more stored configurations than other solutions on the market. The multiple configurations allow for the one controller to behave as 15 separate power designs minimizing product management, faster system design, and easier logistics control. The controller also has NVM configuration, with 1,000 times read/write capability, which is also provided for maximum flexibility. This is very useful during the system bring-up and debug process, saving time and improving the reliability of results.

Technical Highlights

The AOZ97774QE Digital Dual Output Multiphase Controller also includes features specifically designed to meet the specifications of the Intel VR13 infrastructure applications. The controller has the SVID Digital High-Speed interface for those applications that have this requirement.

The AOZ97774QE supports the high accuracy IMON/TMON input for use with AOS or competitor Smart Power Stages (SPS). The recommended companion SPS products are AOZ5276, AOZ5273, and AOZ5277. Using the AOZ5276 (80A peak current) SPS, 240A peak can be supported with the three-phase output and 80A peak on the 2nd output. The typical application DC current load per phase is in the range of 25-50A.

The AOZ97774QE is powered by a single 3.3V supply and provides output voltage with 0.5% accuracy. AOS's proprietary Digital COT architecture provides ultra-fast load transient response and enables stable and low voltage ripple operation with small-sized ceramic capacitors, further reducing solution size and cost.

Key Features

- Powered from a single 3.3V supply
- Digital Voltage Mode Constant On-Time Control
- Fully configurable through PMBUS™
- Provides 15 pin strap selectable device configurations, including NVM configuration
- Supports high accuracy IMON/TMON with AOS's industry standard footprint SPS
 - AOS SPS AOZ5276QI (90A),
 - AOZ5273QI (70A),
 - AOZ5277QI (60A)
- Supports Intel VR13 SVID
- Power monitoring of the 12V input supply
- Auto DPM – Dynamic Phase Management
- 0.5% Vout accuracy
- Ripple Reduction at light load
- Ceramic capacitor stable
- Overvoltage, Undervoltage, and Overcurrent protection
- Overtemperature protection
- Phase Fault and Feedback Disconnection protection
- Black Box fault recording
- QFN 5 x 5 package

“The AOZ97774QE and companion, Smart Power Stage, offer a highly flexible and configurable solution for Information Infrastructure applications including Wireless and Wired Networking, Optical Communication, Server, Cloud Computing, and General-Purpose applications including FPGA and ASIC power. The 15 configurations allow for fast time to market and minimizes the number of part numbers required to support a large portfolio of customer products,” said Daniel Lenskold, Director of Digital Power Marketing at AOS.

Pricing and Availability

The AOZ97774QE is currently available in production quantities with a lead-time of 12 weeks. The unit price for 1,000 pieces is \$2.88.

About AOS

Alpha and Omega Semiconductor Limited, or [AOS](#), is a designer, developer, and global supplier of a broad range of power semiconductors, including a wide portfolio of [Power MOSFET](#), [IGBT](#), [IPM](#), [TVS](#), [HVIC](#), [SiC/GaN](#), [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's 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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