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Alpha and Omega Semiconductor Introduces a 20V, 7A Type-C Sourcing Protection Switch Designed to Enhance USB Type-C Efficiency and Safety

The advanced features of the AOZ1377DI capable to support up to 7A at max 23VIN and programmable current limit, and true reverse current blocking protection

SUNNYVALE, Calif., April 11, 2024 – [Alpha and Omega Semiconductor Limited](#) (AOS) (Nasdaq: AOSL), a designer, developer, and global supplier of a broad range of discrete power devices, wide band gap power devices, power management ICs, and modules, today announced the release of its [AOZ1377DI](#) Type-C Protection Switch. Designed to enhance USB Type-C efficiency and safety, these new protection Type-C switches have a current-limiting switch targeting applications that require comprehensive protections. AOZ1377DI boasts a unique feature supporting up to 7A with an input voltage of up to 20V input voltage, making it versatile for both Sink and Source applications.

The AOZ1377DI offers advanced features that significantly reduce voltage drop and power loss compared to back-to-back p-channel devices typically used in such applications. The device supports an input operating voltage range of 3.4V to 23V, with both VIN and VOUT terminals rated at a maximum of 28V, and is capable of up to 7A. These devices are ideal for high-power applications requiring multi-port Type-C PD 3.0 current source supporting up to 100W. They are particularly well-suited for use in high-performance laptops, personal computers, monitors, docking stations, and other Type-C port applications.

The AOZ1377DI has a True Reverse Current Blocking (TRCB) protection, which prevents undesired reverse current from VOUT to VIN. It also features an internal current-limiting and short-circuit current limit that protects the source device from large load current. The current limit threshold can be set externally with a resistor. Furthermore, the integrated back-to-back MOSFET delivers the industry's lowest ON resistance and highest SOA to safely handle high currents and a wide range of output capacitances on VOUT. An internal soft-start circuit controls inrush current from high capacitive loads, and an external capacitor can adjust the slew rate.

In addition, it has a wealth of protection features, including input Under-Voltage Lock Out (UVLO), Input Over-Voltage Protection (OV), and Thermal Shut Down Protection (TSD). In shutdown, the device consumes a mere 3uA.

“The AOZ1377DI offers a highly integrated solution for Type C sourcing up to 20V and is capable of sourcing over 140W for systems implementing a high-power source. To simplify system compliance testing, the AOZ1377DI is UL 2367 and IEC62368-1 certified,” said Jongchul Song, Sr. Marketing Manager for Protected Switch products at AOS.

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AOZ1377DI comes in two variants: AOZ1377DI-01 will automatically restart once fault conditions are cleared, whereas AOZ1377DI-02 will latch the power switch off, and the EN must be reset to restart the device.

Technical Highlights

- Back-to-Back N-channel MOSFETs with 19 mΩ typical ON resistance
- 3.4 V to 23 V operating input voltage, VIN, and VOUT rated at 28 V abs max.
- Programmable Current Limit
- True Reverse Current Blocking (TRCB)
- Programmable soft-start, Short Circuit Protection (SCP), VIN discharge
- VIN Under-Voltage Lockout (UVLO), VIN Over-Voltage Protection (OVP), Thermal Shutdown Protection (TSD)
- IEC61000-4-2: ±8K
- IEC61000-4-5: 40 V on VOUT, no capacitor
- IEC62368-1:2018 (3rd Edition)
- UL2367 recognition
- AOZ1377DI-01 (Auto-Restart) and AOZ1377DI-02 (Latch-off)
- Thermally enhanced DFN3x3-10L package

Pricing and Availability

The AOZ1377DI-01 and AOZ1377DI-02 are immediately available in production quantities with a lead time of 16 weeks. The unit price in 1,000-piece quantities is \$1.356.

About AOS

Alpha and Omega Semiconductor Limited, or [AOS](http://www.aosmd.com), is a designer, developer, and global supplier of a broad range of discrete power devices, wide band gap power devices, power management ICs, and modules, including a wide portfolio of [Power MOSFET](#), [SiC](#), [IGBT](#), [IPM](#), [TVS](#), [HV Gate Drivers](#), [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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