



- Alpha and Omega Semiconductor, Inc.  
475 Oakmead Parkway  
Sunnyvale, California 94085 USA
- 408.830.9742

**FOR IMMEDIATE RELEASE**

Media Contact: Mina Galvan  
Tel: 408.789.3233  
Email: [mina.galvan@aosmd.com](mailto:mina.galvan@aosmd.com)

## **Alpha and Omega Semiconductor Introduces an Ideal Diode Protection Switch with Limited Power Source (LPS) Feature as a Safeguard for Multiport USB-C Applications**

*The advanced LPS feature of the AOZ1390DI significantly mitigates the risks in hazardous conditions*

**SUNNYVALE, Calif., Sep. 25, 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 [AOZ1390DI-01](#) and [AOZ1390DI-02](#) ideal diode protection switches. The new devices are particularly well-suited for multi-port Type-C PD 3.0 current sinking applications up to 100W, such as high-performance laptops, personal computers, monitors, docking, and other Type-C port applications.

Designed to enhance USB Type-C efficiency and safety, the AOZ1390DI features Limited Power Source (LPS) functionality. For multi-port ORing or parallel power applications, the LPSB pin of the AOZ1390DI can be connected to the DISB pin of one or more AOZ1390DI devices at other ports. This LPS feature works as a watchdog, disabling the port when another port in the same system is faulty or damaged. In doing so it prevents excessive power flow through the device from other faulty or damaged ports, making the AOZ1390 ideal for multi-port Type-C Power Delivery (PD) applications.

The new device has advanced features that substantially reduce voltage drop and power loss compared to a discrete implementation. The AOZ1390DI offers an Ideal Diode True Reverse Current Blocking (IDTRCB) protection, which prevents the undesired reverse current from VOUT to VIN. 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. The input operating voltage range of the AOZ1390DI is between 3.3V and 23V, and both VIN and VOUT terminals are rated at 30V Absolute Maximum with the capability to support up to 8A switch current. 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) and Input Over-Voltage Protection (OVP). The FLTB pin flags Thermal Shut Down Protection (TSD), Short Circuit Protection (SCP), and Over Voltage faults.

“With our AOZ1390DI ideal diode protection switches, designers can implement simple, efficient, and safe USB Type-C PD3.0 Standard Power Range (SPR) current sinking applications up to 100W,” said Starry Tsai, Sr. Director of Product Marketing of Power IC Product Line at AOS. “With our unique Limited Power Source (LPS)

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feature, the reliable and safe design of systems with multiple Type C Ports is simplified. At the same time, AOS' high SOA, low RDS(on) trench back-back MOSFETs enable an industry-leading low resistance, reducing the power dissipation in the system and enabling good thermal design.”

AOZ1390DI comes in two variants: AOZ1390DI-01 will automatically restart once fault conditions are cleared, whereas AOZ1390DI-02 will latch the power switch off, and the EN or power must be reset to restart the device.

### **Technical Highlights**

- 18 mΩ typical ON resistance
- 3.3 V to 23 V operating input voltage, VIN, and VOUT rated at 30 V abs max.
- Ideal Diode True Reverse Current Blocking (IDTRCB)
- Fast recovery from reverse current condition
- Supports Limited Power Source (LPS)
- Programmable soft-start, Short Circuit Protection (SCP), VIN discharge
- VIN Under-Voltage Lockout (UVLO), VIN Over-Voltage Protection (OVP), Thermal Shutdown Protection (TSD)
- IEC61000-4-5: 55 V on VIN, no capacitor
- Thermally enhanced DFN3.5x3-14L package

### **Pricing and Availability**

The AOZ1390DI-01 and AOZ1390DI-02 are immediately available in production quantities with a standard lead time of 12 weeks. The unit price in 1,000-piece quantities is \$1.40.

### **About AOS**

Alpha and Omega Semiconductor Limited, or [AOS](#), 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](http://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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