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Alpha and Omega Semiconductor Unveils Powerful Duo of Protection Switches that Support Type-C EPR 3.1 Extended Power Levels

The AOZ13058DI Type-C sink and AOZ15953DI Type-C source protection switches overcome risks of short circuits, enabling efficient, reliable, and safe Type-C EPR 3.1 designs up to 240W

SUNNYVALE, Calif., Sep. 16, 2025 – [Alpha and Omega Semiconductor Limited](#) (AOS) (Nasdaq: AOSL) a designer, developer, and global supplier of a broad range of discrete power devices, wide bandgap power devices, power management ICs, and modules, today announced two powerful Type-C sink and source protection switches. AOS designed these switches to increase the power delivery capability of USB Type-C ports to 240W, paving the way for Type-C extended power range (EPR) implementations. The [AOZ13058DI](#) offers overvoltage/overcurrent protection features suited for 48V Type-C sinking applications, while the [AOZ15953DI](#) provides the additional protection features needed for Type-C sourcing applications. These new switches help designers safeguard 48V Type-C EPR capabilities to enhance reliability and functionality in high-performance and gaming laptops, personal computers, monitors, docking, and other higher-power connected portable devices.

The AOZ13058DI features an ultra-low 20 milliohm resistance and provides a comprehensive set of features including programmable soft-start, overvoltage, ideal diode reverse-current, short-circuit, overcurrent, overtemperature, and ESD protection. These features also help isolate and protect downstream components from abnormal VBUS voltage and potentially harmful current conditions. Ideal diode fast reverse current protection allows multiple power paths to be connected in parallel without interference. The switch's integrated positive and negative transient voltage suppression at VIN enhances immunity to voltage spikes meeting IEC safety standards (IEC61000-4-2: ±8kV contact, ±15kV contact; IEC61000-4-5: 20A (8/20µs) on VIN and VOUT). The AOZ13058DI also features a programmable current limit function, permitting its application as a sourcing switch in an EPR 3.1 docking system.

The AOZ15953DI can source 5V at 3.5A while blocking up to 48V, and is UL 2367 and IEC 62368-1:2018 (3rd Edition) certified as a current limiting switch optimized for Type-C sourcing applications. This protection switch shields against numerous fault conditions, providing VIN Overvoltage Protection (OVP), Startup Short-Circuit Protection (SCP), Overtemperature Protection (OTP), and has a programmable ILIMIT pin.

"The AOZ13058DI and AOZ15953DI are a powerful duo of protection switches that enable designers to implement simple, efficient, and safe USB Type-C PD3.1 EPR applications up to 240W," said James Wang, Manager, Power ICs at AOS. "With the ability to withstand up to +55V on VBUS, these new sink and source switches deliver the safety margin developers require to build 48V systems. AOS' packaging expertise enables the integration of industry-leading, back-to-back, high SOA, low RDS(on) trench MOSFETs with an IC controller. This approach reduces solution footprint, lowers power dissipation and provides ideal diode functionality as well as protection features that enhance system reliability."

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Technical Highlights

48V Type-C EPR Source: AOZ15953DI

- 2.7V to 5.5V Operating range, Absolute Maximum at VOUT = 60V
- 3.5A current capability
- 35 milliohm On-resistance in DFN4x4-16L package
- Ideal Diode True reverse current blocking (IDTRCB)
- Supports Fast Role Swap (FRS)
- VIN Overvoltage Protection (OVP), Startup Short-Circuit Protection (SCP), Overtemperature Protection (OTP)
- Programmable ILIM

48V Type-C EPR Sink (and high-power sourcing): AOZ13058DI

- 3.3V to 55V Operating range, Absolute Maximum = 60V
- RON = 20 milliohm
- 7A continuous current capability, 20A peak for 10ms @ 2% duty cycle
- Ideal Diode True reverse current blocking
- Programmable soft start
- VIN Overvoltage Protection (OVP), Startup Short-Circuit Protection (SCP), Overtemperature Protection (OTP)
- Programmable ILIM for high power sourcing applications
- Meet IPC-2221A standard
- DFN5.2x4-20L package

Pricing and Availability

The AOZ15953DI and AOZ13058DI are available in production quantities with a lead-time of 16 weeks. The unit price in 1,000-piece quantities is \$2.12 for the AOZ15953DI and \$2.77 for the AOZ13058DI. AOS products are offered in packages with Pb-free plating and are RoHS compliant.

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 bandgap 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 personal computers, graphics cards, data centers, AI servers, smartphones, consumer and industrial motor controls, TVs, lighting, automotive electronics, and power supply units for various 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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