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Alpha and Omega Semiconductor Unveils AmpStack™ Packaging: A Leap Forward in MOSFET Power Density

Innovative vertically stacked packaging DFN6x5 technology in a half-bridge configuration

SUNNYVALE, Calif., July 07, 2026 – 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 introduced its AOPL66801 80V MOSFET in a half-bridge configuration available in a state-of-the-art DFN6x5 AmpStack™ MOSFET package. This breakthrough packaging technology enables high-density designs for various power conversion applications, ranging from next-gen Megawatt AI factories to everyday power tools.

Designed to support high power-density requirements, AOS' new, innovative advanced packaging uses vertically stacked die technology with two MOSFETs connected as a high-side and low-side MOSFET, forming a half-bridge. This configuration effectively increases power density and maximizes available PCB space compared to a two DFN5x6 discrete MOSFET solution. The AOPL66801 also features an optimized clip design for the switch node connecting the two MOSFETs, which minimizes parasitic inductance between the high-side and low-side MOSFETs. Compared to a standard discrete solution, the AOPL66801 minimizes parasitic inductance on the PCB, reducing phase-node voltage ringing and decreasing stress on the MOSFET.

The PCB layout can affect gate-driving performance and degrade switching performance due to parasitic inductance. The AOPL66801 has a Kelvin sense pin that maintains gate-voltage stability during large di/dt switching and provides a more effective drive path for the high side, reducing losses. In addition, AOPL66801 has a maximum junction temperature of 175 °C, providing increased capability. These factors provide significant system-level improvements that support higher power density and increased operational efficiencies.

"Our new AmpStack™ half-bridge packaging is a game-changer for designers looking to increase power density compared to solutions using two DFN 5x6 packages," said Peter H. Wilson, Sr. Director of the MOSFET product line at AOS. "In addition, by designing the package for low source parasitic inductance, we've drastically reduced phase node ringing and MOSFET stress. Customers don't just get more power—they get significantly higher application reliability."

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Technical Highlights

Part Number	Package		V_{DS} (V)	V_{GS} (±V)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=10V	I_D (A)	Ciss (pF)	Coss (pF)	Crss (pF)	Qg (nC)
AOPL66801	DFN 6x5	High Side (Q1)	80	20	2.2	304	4900	1400	34	70
		Low Side (Q2)	80	20	2.2	215	4900	1400	34	70

Pricing and Availability

The AOPL66801 is immediately available in production quantities, with a 16-week lead time. The unit price in 1,000-piece quantities is $6.16.

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-bandgap power devices, power management ICs, and modules, including a wide portfolio of Power MOSFET, SiC, GaN, 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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