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Alpha and Omega Semiconductor Announces Automotive Grade 80V and 100V MOSFETs in TO-Leadless Packaging Technology for e-Mobility

SUNNYVALE, Calif., Dec. 13, 2023 – [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 state-of-the-art automotive TO-Leadless (TOLL) package for the company's automotive grade 80V and 100V MOSFETs. AOS's TOLL package is developed to optimize the company's power semiconductors as essential components in the evolution of e-mobility such as 2- and 3-wheel and other light vehicles. This new package helps designers meet the ongoing trend to electrify vehicles with the latest battery technology to meet clean energy zero-emission goals. These capabilities make AOS 80V and 100V MOSFETs ideally suited for automotive BLDC motor and battery management applications for e-mobility.

The AOS automotive TOLL package is designed to achieve the highest current capability using AOS's innovative approach which utilizes advanced clip technology to achieve a high in-rush current rating. In addition, AOS TOLL packaging with clip technology offers a very low package resistance and inductance, enabling improved EMI performance compared to other TOLL packages utilizing standard wire-bonding technology. With the combination of low ohmic and high current capability, utilizing AOS TOLL packaging also allows designers to reduce the number of parallel MOSFETs in high current applications. This, in turn, helps to enable higher power density requirements without compromising reliability in applications where robustness and reliability are key design objectives.

Providing a more compact solution for space-constrained designs, the [AOTL66810Q](#) (80V) and [AOTL66912Q](#) (100V) have a 30 percent smaller footprint compared to a TO-263 (D2PAK) package. These new devices in TOLL packaging are qualified to AEC-Q101, PPAP capable, and are manufactured in IATF 16949 certified facilities making them ideally suited for demanding application requirements in e-mobility. AOS TOLL devices are also compatible with automated optical inspection (AOI) manufacturing requirements.

"Using the AOS Automotive TOLL package with clip technology offers significant performance improvements in a robust package. The advanced technologies in our AOTL66810Q and AOTL66912Q MOSFETs will help simplify new designs allowing them to reduce the number of devices in parallel while providing the necessary higher current capability to enable overall system cost savings," said Peter H. Wilson, Marketing Sr. Director of MOSFET product line at AOS.

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Technical Highlights

Part Number	V _{DS} (V)	V _{GS} (±V)	Continuous Drain Current (A)		Pulsed Drain Current (A)	R _{DS(ON)} Max (mOhms) @10V
			@25°C	@100°C	@25°C	
AOTL66810Q	80	20	445	247	1780	1.25
AOTL66912Q	100	20	370	269	1480	1.7

Pricing and Availability

The AOTL66810Q and AOTL66912Q MOSFETs are immediately available in production quantities with a lead time of 14-16 weeks. The unit prices in 1,000-piece quantities are \$4.3 and \$4.56, respectively.

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](#), [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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