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Alpha and Omega Semiconductor Introduces a New Family of High Performance Common-Drain MOSFETs

The new devices help battery pack designers simplify their design and minimize footprint area

SUNNYVALE, Calif., Oct. 18th, 2013 – [Alpha and Omega Semiconductor Limited](#) (AOS) (Nasdaq: AOSL), a designer, developer and global supplier of a broad range of power semiconductors and power ICs, today release a new dual MOSFET family in the common-drain configuration in both DFN 5x6 and Micro-DFN 3.2x2 packages. These devices are suitable for battery pack applications where two n-channel MOSFETs are connected back-to-back for safe charging and discharging as well as voltage protection. The products provide ultra-low R_{SS} (source-to-source resistance) of less than 10mOhms at 10V gate drive. [AON6810](#), [AON6812](#), and [AOC4810](#) provide ideal solutions for enhancing battery pack performance in the latest generation Ultrabooks and tablets, where low conduction loss is a must for optimizing battery life.

The new devices use the latest AlphaMOS™ technology to accomplish very low $R_{DS(ON)}$ along with 4kV ESD protection to enhance battery pack safety. AON6810 and AON6812 use a bottom-exposed DFN5x6 package for enhanced thermal capability. The AON6812 features a low 8mOhm max total R_{SS} (source-to-source) resistance at 10V drive. Rated with a 30V breakdown voltage, it is capable of charging and discharging a laptop battery pack with the least amount of power loss and heat dissipation. The AON6810 provides an extra level of protection with an internal temperature sense diode that provides first-hand thermal information to the battery control IC. By utilizing the temperature sense pins of AON6810, designers can accurately monitor the MOSFETs' thermal condition in a real time basis to prevent any abnormal overheating.

To meet the demand of ultra-thin battery packs, the AOC4810 takes advantage of AOS's innovative Micro-DFN package, which features an ultra-low profile of only 0.4mm. Unlike conventional CSP (chip scale packaging), the Micro-DFN eliminates the risk of die chipping by encapsulating the silicon to provide full protection to the die as well as providing excellent moisture isolation. When board space is a key concern, AOC4810 provides a great option to further enhance power density. With dimensions of only 3.2mm x 2mm, AOC4810 offers a maximum R_{SS} level of 8.8mOhms to minimize conduction loss and heat dissipation.

“The new AOS common-drain MOSFETs help simplify battery pack circuitry and save space in today's compact battery pack designs. Combined with their high ESD capability and ultra-low on-resistance, this new family enables a new level of size and safety for enhanced battery performance.” said George Feng, Senior Manager of Product Marketing.

The AON6810, AON6812, and AOC4810 are all RoHS and Halogen-Free compliant.

Device Specification Table

Part Number	V _{DS}	V _{GS}	Max R _{DS(ON)}		Max R _{SS(ON)}	ESD (HBM)	ID Max	Package Dimension
			@ 10V	@ 4.5V	@10V		@ T _A =25°C	
AON6810	30	±20	4.4mΩ	5.6mΩ	8.8mOhms	4kV	25A	5mm x 6mm
AON6812	30	±20	4.0mΩ	6.0mΩ	8.0mOhms	4kV	27A	5mm x 6mm
AOC4810	30	±20	4.4mΩ	7.2mΩ	8.8mOhms	4kV	8A	3.2mm x 2mm

Availability

All devices are immediately available in production quantities with a lead-time of 12-14 weeks. The unit price for 1,000 pieces for AON6812, AON6810, and AOC4810 are \$0.825, \$0.78, and \$0.525 respectively.

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 power semiconductors, including a wide portfolio of [Power MOSFET](#), [IGBT](#) and [Power IC](#) 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's portfolio of products targets high-volume applications, including portable computers, flat panel TVs, LED lighting, smart phones, battery packs, consumer and industrial motor controls 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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