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Alpha and Omega Semiconductor Releases New 100V FETs for Flyback SR

AlphaSGT™ technology provides solutions for both 5V fixed and adaptive voltage topologies

SUNNYVALE, Calif., Dec 6, 2016 – [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 announced the release of two new products in the 100V MOSFET family, AO4290A and AON6220. These products are designed for synchronous rectification for flyback converters, used in high-speed charger and PD adapters. Both parts are designed to be fully driven with 4.5V gate drive voltage. The AO4290A is offered in an SO-8 package with a maximum on-resistance (Rdson) of 7.6mohm at 4.5V gate drive voltage. The AON6220 is packaged in a low profile DFN5x6 package with a maximum Rdson of 7.4mohm at 4.5V gate drive voltage. The minimum break down voltage is 100V, which is suitable for usage in flyback circuit designs featuring adjustable output voltage, such as an adaptive quick charge for mobile phones and USB PD adapters.

High-capacity batteries extend the mobility of the newest smart phones and laptop computers, and have driven the demand for high power chargers and adapters. Synchronous rectification has become the standard circuit design of choice for more and more flyback converters by enabling higher efficiency and lower heat generation while keeping the charger or adapter slim with improved power density. The latest digitally controlled synchronous rectifier ICs provide an option to fully eliminate the Schottky diode paralleled with the synchronous MOSFET. This also requires further reduction of the MOSFET switching loss. The AO4290A and AON6220 are designed to address the demand for higher output power and lower switching loss. With similar specs provided in both the SO-8 and DFN5x6 packages, the design engineer has more flexibility in selecting the right part in accordance with the target thermal dissipation and manufacturing requirements from the PCB factories.

“The power supply industry sees a tremendous acceleration in the adoption of synchronous rectification in flyback applications. It has been proven to be an effective way of reducing heat generation and achieving a compact design. The evolution in Quick Charge and Direct Charge continues to drive new demand. Furthermore, the standardization of USB Type C is propelling the output power to a higher level. AOS has been the major supplier from the first generation of fast chargers. Our AlphaSGT™ technology provides the solutions for both 5V fixed voltage and 5V/9V/12V/20V adaptive voltage topologies. These two newly released parts will help our partners and customers design high-efficiency flyback converters,” said Lei Feng, Sr. Marketing Director of MOSFET product line at AOS.

Device Specification Table

The following table shows the major specification of the two new parts together with the full 100V AlphaSGT™ family offered for SR FET in flyback converters.

Package	Part Number	V _{DS} (V)	V _{GS} (±V)	R _{DS(ON)} (mΩ max) at VGS=10V	R _{DS(ON)} (mΩ max) at VGS=4.5V	Qg (nC)
SO-8	AO4290A	100	20	6.4	7.6	30
	AO4296	100	20	8.3	10.6	18.5
	AO4294	100	20	12	15.5	15
	AO4292E*	100	20	23	33	8
TO-252	AOD2910E*	100	20	23	33	8
	AOD2916	100	20	34	43.5	5.5
TO-251A	AOI296A	100	20	8.3	10.6	18.5
DFN 5x6	AON6220	100	20	6.2	7.4	30
	AON6226	100	20	7.9	10.2	18.5
	AON6224	100	20	12	15.5	15
DFN 3.3x3.3 EP	AON7230	100	20	11.5	15.5	13
	AON7232	100	20	13.5	16.5	12

* With integrated ESD protection

Pricing and Availability

All the products released are immediately available in production quantities with a lead-time of 12-14 weeks. The unit price for 1,000 pieces are shown below:

Part Number	AO4290A	AON6220
Unit Price (for 1Kpcs)	\$0.93	\$0.96

About AOS

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