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Alpha and Omega Semiconductor Announces Innovatively Designed Double-Sided Cooling DFN 5x6 Package

The AONA66916 Power MOSFET in AOS' new top-exposed DFN 5 x 6 achieves industry leading thermal performance to enable cooler, more reliable designs

SUNNYVALE, Calif., Jan. 24, 2024 – [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 [AONA66916](#), a 100V MOSFET packaged in the company's innovatively designed top and bottom side cooling DFN 5 x 6 package. Designers have long trusted AOS power semiconductors as essential components that help them meet a wide variety of high-performance application requirements. Now, in delivering a state-of-the-art package that keeps its semiconductor products cooler, AOS is taking a huge step in enabling engineers to develop more efficient designs in telecommunications and industrial applications that must frequently operate in harsh conditions.

Typically, when using the standard DFN 5x6 package, the bottom contact is the main contributor for cooling, and most of the heat generated by the Power MOSFETs will be transferred to the PCB. This increases the PCB thermal management design considerations to meet system requirements. AOS' new top and bottom cooling DFN 5x6 package is designed to achieve the highest heat transfer between the exposed top contact and heat sink due to its large surface contact area construction. This allows the device to achieve a low thermal resistance ($R_{thc-top\ max}$) of $0.5^{\circ}C / W$ with results being transferred to the PCB board, enabling significant thermal performance improvements. The top exposed DFN 5x6 package of the AONA66916 shares the same 5mm x 6mm footprint as AOS' standard DFN 5x6 package, eliminating the need to modify existing PCB layouts.

Another benefit of the AONA66916 is that it utilizes AOS' 100V AlphaSGT™ technology, providing excellent FOM for balanced performance in hard switching applications. AONA66916 has a maximum $R_{DS(on)}$ rating of 3.4mOhms and has a 175°C junction temperature rating. .

“Cooling the power MOSFET in high power design can be challenging, and AOS has successfully addressed this essential issue with our advanced top exposed package design. It not only enables better thermal transfer from its top side exposed contact to heat sink due to large exposed surface area, our new package delivers a much cooler device that contributes to a more efficient and robust final design,” said Peter H. Wilson, Marketing Sr. Director of the MOSFET product line at AOS.

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Technical Highlights

Part Number	V _{DS} (V)	V _{GS} (±V)	RDS(ON) Max (mOhms) @10V	R _{thjc} – max (C/W)		Junction Temp (C)	Continuous Drain Current (A)
				Top	bottom		@25°C
AONA66916	100	20	3.4	0.5	0.55	175	197

Pricing and Availability

The AONA66916 is immediately available in production quantities with a lead time of 14-16 weeks. The unit price for 1,000 pieces is \$1.85.

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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