



## **Boost/SEPIC Controller from Diodes Incorporated Enables 50kHz LED-Wide PWM Dimming in Automotive Lighting Applications**

**Plano, Texas – September 12, 2023** – Diodes Incorporated (Diodes) (Nasdaq: DIOD) today launches a boost/single-ended primary inductance converter (SEPIC) controller for various automotive LED applications. The [AL8853AQ](#) is an automotive-compliant and highly integrated boost/SEPIC controller that provides high performance with a reduced bill of materials (BOM) in automotive LED applications including exterior lights, headlamps, head-up displays (HUD), and backlight displays.

Automotive headlamp manufacturers can use SEPIC topology to enable high or low beam LED array drivers that operate directly from a vehicle's battery, instead of using the conventional two-stage topology of a boost followed by a buck converter or a full-bridge buck-boost topology. The SEPIC functionality of the AL8853AQ supports cost-effective, simple buck-boost-like topology, which is well-suited for head-up display systems: an increasingly popular feature in automotive designs.

The wide input range (6V to 40V) of the AL8853AQ supports a typical 12V vehicle battery voltage input. Its 200mV feedback reference voltage has  $\pm 3\%$  tolerance to maintain tight brightness control while improving efficiency. The fixed 400kHz switching frequency of the AL8853AQ supports low electromagnetic interference (EMI) by using a fundamental frequency outside the medium wave (MW) band. In addition, this controller's fast (50kHz) pulse width modulation (PWM) to analog dimming mode (100% down to 1%) prevents visible low or high-frequency flickering usually associated with PWM dimming. The AL8853AQ also includes robust protection features to guard against unexpected overvoltage, overcurrent, overtemperature, and diode and inductor short-circuit events.

The [AL8853AQ](#) is qualified to AEC-Q100 Grade 1, manufactured in IATF 16949 certified facilities, and is PPAP capable. This controller is available in a SO-8 package at \$0.33 in 1,000 piece quantities.

**About Diodes Incorporated**

Diodes Incorporated (Nasdaq: DIOD), a Standard and Poor's SmallCap 600 and Russell 3000 Index company, delivers high-quality semiconductor products to the world's leading companies in the automotive, industrial, computing, consumer electronics, and communications markets. We leverage our expanded product portfolio of discrete, analog, and mixed-signal products and leading-edge packaging technology to meet customers' needs. Our broad range of application-specific solutions and solutions-focused sales, coupled with worldwide operations of 32 sites, including engineering, testing, manufacturing, and customer service, enables us to be a premier provider for high-volume, high-growth markets. For more information visit [www.diodes.com](http://www.diodes.com).

*Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.*

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