



Analog and Discrete  
Power Solutions

## **Boost Controller from Diodes Incorporated Featuring Four-Channel Current Sinks and Diagnostic Functions for Backlighting in Automotive Applications**

**Plano, Texas – November 20, 2025** – Diodes Incorporated (Diodes) (Nasdaq: DIOD) introduces the [AL3069Q](#), an automotive-compliant\* high-efficiency 60V boost controller for backlight applications. The device includes four 80V high-precision current sink channels to accommodate larger LED display panels, and extensive diagnostic functions for optimum system safety and reliability. Applications include infotainment panels, instrument clusters, and heads-up displays.

With built-in adaptive boost voltage control, the AL3069Q operates over a wide input voltage range from 4.5V to 60V. This covers the common automotive power supply rails (12V, 24V, and 48V), providing greater flexibility in system design. Its boost operating switching frequency is adjustable from 100kHz to 1MHz to address various application requirements toward high-efficiency or compact PCB layouts.

The four integrated 80V LED current sink channels can be set using an external resistor with a current matching of  $\pm 0.5\%$  (typ.) between channels and devices, ensuring display uniformity and consistent brightness. Each string can deliver 250mA, with a pulse current of up to 400mA, supporting a longer string of LEDs for higher output power. This capability makes the device suitable for differently sized and larger LED panels up to 32" diagonal. The AL3069Q supports PWM-to-analog dimming, achieving a minimum duty cycle of 1/5000 at 100Hz, enhancing brightness control precision and reducing LED color shift.

Designed with system robustness in mind for automotive applications, it incorporates extensive fault diagnostics and robust protection features. These include cycle-by-cycle current limit, soft-start, undervoltage lockout (UVLO), programmable overvoltage protection (OVP), overtemperature protection (OTP), LED-open/-short protection, Schottky diode-short and -open protection, inductor-short-circuit protection, and  $V_{OUT}$ -short protection. A dedicated fault indicator (FAULTB) pin is also included to report faulty conditions.

The [AL3069Q](#) is supplied in the TSSOP-16EP (Type DX) and U-QFN4040-16/SWP (Type UXB) packages, offering a cost-effective solution with low pin counts and compact sizing. It is available at \$0.54 in 1,000-piece quantities. A standard compliance version, the [AL3069](#), is available and suitable for industrial and commercial applications.

For more information, please visit the Diodes Incorporated website:  
<https://www.diodes.com/products/automotive/power-management-automotive/automotive-led-drivers/linear-led-drivers-automotive/>

**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 analog and discrete power solutions combined with leading-edge packaging technology to meet customers' needs. Our broad range of application-specific products and solutions-focused sales, coupled with global operations including engineering, testing, manufacturing, and customer service, enable 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 facilities certified to IATF 16949, supporting PPAP documents.*

*The Diodes logo is a registered trademark of Diodes Incorporated in the United States and other countries.*

*All other trademarks are the property of their respective owners.*

*© 2025 Diodes Incorporated. All Rights Reserved.*

**Company Contact:**

Gurmeet Dhaliwal  
Vice President, Corporate Marketing & Investor Relations  
Diodes Incorporated  
+1 408-232-9003  
[Contact Us](#)