# 80V/100V Asynchronous Buck Converters from Diodes Incorporated Deliver High Efficiency in Automotive 48V PoL Applications

**Plano, Texas – August 21, 2025 –** Diodes Incorporated (Nasdaq: DIOD) today introduces four new automotive-compliant* asynchronous buck converters for 48V low-voltage rail point-of-load (PoL) applications. The AP68255Q/AP68355Q and AP6A255Q/AP6A355Q incorporate 500mΩ power MOSFETs to deliver high-efficiency step-down DC-DC conversion with up to 3.5A of continuous output current. These converters cover the full automotive battery range from 5.5V to 80V/100V, including load dump scenarios. They can be used in various applications, including 48V motor control, advanced driver assistance systems (ADAS), telematics, infotainment, body control, instrument clusters, and lighting systems.

The new buck converters employ constant on-time (COT) control to maintain a nearly constant switching frequency (300kHz). This technique results in fast load/line transient response, easy loop stabilization, and low output voltage ripple, making the devices easier to incorporate by requiring fewer external components. The proprietary gate-driver arrangement in these devices reduces switch node ringing effects without sacrificing the turn-on and turn-off times of the N-channel MOSFET switch. This method helps reduce the high-frequency radiated electromagnetic interference (EMI) noise normally associated with MOSFET switching.

The built-in overcurrent protection (OCP) with frequency foldback mode ensures high load-current support while reducing junction temperature under fault conditions. The overtemperature protection (OTP) circuit immediately shuts down the controller's output voltage at 160°C. When the temperature drops below the 140°C safety threshold, the converter automatically restarts. These protection features prevent controller damage or malfunction, maximizing system reliability.

The AP68255Q/355Q and AP6A255Q/355Q asynchronous buck converters are available in the thermally enhanced SO-8EP package with an operating temperature range of -40°C to +125°C. The devices are available at $0.80 [AP68255Q], $0.86 [AP68355Q], $0.90 [AP6A255Q], and $0.96 [AP6A355Q] in 1,000-piece quantities. Standard-compliance versions are also available for industrial and commercial applications.

**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.

**Automotive-compliant—qualified to AEC-Q100 Grade 1, manufactured in facilities certified to IATF 16949, supporting PPAP documents.*



## Company Contact:

Gurmeet Dhaliwal
Director, Investor Relations & Corporate Marketing
Diodes Incorporated
+1 408-232-9003
Contact Us