



**Product news**

## **40V Synchronous Buck Converters from Diodes Incorporated Deliver High Efficiency with Low EMI for Automotive POL Applications**

**Plano, Texas – July 14, 2020** - Diodes Incorporated (NASDAQ: DIOD) today announced the [AP64350Q](#)/[AP64351Q](#)/[AP64352Q](#) series of automotive-compliant, 3.5A, synchronous buck converters for point of load (POL) applications. The AP6435xQ combines a low quiescent current with a wide input voltage range of 3.8V to 40V. The devices have been developed for use in automotive applications including infotainment systems, instrument clusters, telematics, advanced driver assistance systems (ADAS), and forward lighting.

With a fully integrated 75mΩ high-side power MOSFET and 45mΩ low-side power MOSFET, AP6435xQ provides high-efficiency step-down DC-DC conversion. The design of the AP6435xQ's gate drive/bootstrap enables the devices to operate in low drop out (LDO) mode, allowing near 100% duty cycle.

To increase efficiency as the load current approaches zero, the devices enter pulse frequency modulation (PFM), resulting in a quiescent current of just 22μA. They also feature frequency spread spectrum (FSS) with a switching frequency jitter of ±6% and a proprietary gate driver scheme, which reduces high frequency radiated EMI noise caused by MOSFET switching.

The [AP64350Q](#), [AP64351Q](#), and [AP64352Q](#) have distinct additional feature sets that optimize performance in slightly different ways. The AP64350Q and AP64352Q have an adjustable switching frequency (100kHz - 2.2MHz) and can also be synchronized to an external clock. This provides the design flexibility to deliver a choice of low frequency with extremely high efficiency, or high frequency for small form factor solutions whose switching frequency is outside the AM band. The AP64351Q and AP64352Q have programmable soft-start, which reduces in-rush currents, while the AP64350Q and AP64351Q have external compensation to optimize loop response.

The AP64350Q, AP64351Q, and AP64352Q are qualified to AEC-Q100 Grade 1, support PPAP documentation, and are manufactured in IATF 16949 certified facilities. The devices are available in the SO-8EP package priced at \$0.93 in 1000 piece quantities.

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**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 consumer electronics, computing, communications, industrial, and automotive 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 28 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).

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