



Complete Ultra-High-Power-Density Charger Solution from Diodes Incorporated Delivers Improved Efficiency and Reduced Size

Plano, Texas – November 2, 2021 – Diodes Incorporated (Nasdaq: DIOD) has launched a three-chip solution for enhancing the performance of ultra-high-power-density USB Type-C® power delivery (PD) systems. These products can be used in a wide variety of consumer electronics applications, including smartphone chargers and notebook adapters.

The [AP43771V](#) USB Type-C PD decoder is compatible with PD3.0, PPS Rev 3.0, V1.2 (TID – 4305), and Qualcomm® Quick Charge™ QC4/QC4+/QC5 (QC20201127203) protocols. It supports a 3.3V to 24V operating voltage range and incorporates both a one-time programmable (OTP) ROM for all the main firmware, and a multi-time programmable (MTP) ROM to accommodate user configuration data.

With I2C and GPIO pins and built-in application firmware, the AP43771V backs various intelligent power management systems during charging states. These include smart power sharing among multiple charging ports, thermal power derating, LED light indication, and fault indication.

The [AP3306](#) is an active clamp flyback (ACF) controller that reaches elevated operational efficiency via zero voltage switching (ZVS) and magnetic energy recycling. It can be used with an integrated driver GaN FET, a Cascode GaN FET, or a MOSFET serving as the main low-side switch. With integrated high-side ACF gate driver control, the AP3306 supports leakage energy recycling circuitry via a reduced-current-capability high-side MOS switch. This high degree of integration and use of cost-effective components reduces bill-of-material (BOM) costs and board space.

The [APR340](#) is a secondary-side synchronous rectification (SR) MOSFET driver optimized for use with the AP3306. It features a built-in pulse linear regulator and operates in constant current (CC) mode to safeguard the charging system. The system output voltage can go as low as 2V, which is a significant benefit in programmable power supply (PPS) applications.

The AP43771V is available in both W-DFN3030-14 and W-QFN4040-24 package options. The AP3306 is supplied in a SO-10 package format, while the APR340 comes in a SOT26 package. These devices are respectively priced at \$0.49 (AP43771V, W-DFN3030-14), \$0.52 (AP43771V, W-QFN4040-24), \$0.41 (AP3306), and \$0.14 (APR340) each in 1000 piece quantities.

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Qualcomm® Quick Charge™ is a product of Qualcomm Technologies, Inc.

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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 31 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.

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