



## **Diodes Incorporated Addresses USB PD 3.1 SPR, PPS, and QC Protocols Using Automotive-Compliant, Dual-Channel Decoder**

**Plano, Texas – December 6, 2022** – Diodes Incorporated (Diodes) (Nasdaq: DIOD), responding to rapidly growing opportunities in pre-installed in-vehicle USB charging, has announced a highly integrated dual-channel USB Type-C® protocol decoder. The DIODES™ [AP43776Q](#) supports USB power delivery (PD) 3.1 standard power range (SPR) and programmable power supply (PPS) as well as Quick Charge™ QC5, fast charging protocols. It also supports legacy battery charging (BC) 1.2 and is highly optimized for multi-port automotive USB device charging systems.

The AP43776Q features a built-in microcontroller unit (MCU) with 12kB of one-time programmable (OTP) ROM, plus a multi-time programmable (MTP) ROM resource tool. Each PD 3.1 port is fully PPS compliant, featuring a 3.3V to 21V output voltage range with 20mV/step and 50mA/step adjustment. They enable independent charging output voltages for greater power usage optimization.

An I2C interface enables inter-chip communication with DC-DC controllers and converters in the charging system. This simplifies the control loop and lowers overall component costs. Using the UART interface, two separate AP43776Q devices can be interconnected, so that smart power-sharing may be conducted across all four of their combined USB ports. Besides managing power negotiation attachment procedure, the AP43776Q enables DisplayPort™ over USB-C™ by detecting USB Type-C Alternate Mode and driving a suitable USB/DP mux. This facilitates the carrying of video data over the system's USB connection.

The [AP43776Q](#) is AEC-Q100 Grade 1 qualified, manufactured in IATF 16949 certified facilities, and PPAP capable. It is supplied in a 20-pin W-QFN4040 wettable flank package format (with a 4mm x 4mm footprint) and is available at \$1.18 in 1000 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 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 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).

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