Automotive-Compliant, Three-Channel, Linear LED Driver from Diodes Incorporated Provides Independent Controls for Brightness and Color

Plano, Texas – March 6, 2024 – Diodes Incorporated (Diodes) (Nasdaq: DIOD) today releases a new automotive-compliant* linear LED driver that enables users to independently control the brightness and color of its three channels.

Human-centric automotive design is driving the demand for multi-channel LED drivers, which allow vehicle occupants to easily change interior lighting colors to match their mood. By simultaneously enabling animated turning-indicator signals and exterior grill lighting for different road conditions, these drivers help increase safety levels. The AL1783Q driver has LED current settings by an external REF pin, independent dimming controls for each channel, and pulse width modulation (PWM) to perform LED dimming. It is well-suited for multiple interior and exterior lighting applications in electric vehicles (EV) and internal combustion engine (ICE) vehicles.

The automotive industry is trending towards using higher voltage rails to power vehicle subsystems and this has seen battery voltages increasing from 12V and 24V to 48V. In response to this development, the AL1783Q has been designed to operate from a 55V rail, providing it with an advantage over other LED drivers which typically only operate up to 40V. This feature also enables the AL1783Q to support increasing LED chain voltages.

Another advantage of this driver is that it delivers up to 66% more current per channel (250mA compared with a standard 150mA), enabling greater flexibility to support higher LED current ranges in a wider range of lighting applications. For additional flexibility, the current in each of the three channels can be set using individual resistors.

Thermal robustness is an important consideration when designing with linear LED drivers and, for this reason, the AL1783Q is housed in a thermally efficient TSSOP-16EP package that has an exposed cooling pad for superior heat dissipation. For added system level reliability, the AL1783Q has multiple fault detection features including undervoltage lockout (UVLO) and overvoltage protection (OVP), as well the ability to detect LED open and short circuit conditions.

The AL1783Q is automotive compliant* — qualified to AEC-Q100, manufactured in IATF 16949 certified facilities, and supporting PPAP documentation. Supplied

in the space-saving TSSOP-16EP (5.1mm x 6.6mm) package, the AL1783Q is available at $0.43 in 2,500 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 automotive, industrial, computing, consumer electronics, and communications 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.

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