



Automotive-Compliant Current Shunt Monitors from Diodes Incorporated Enable High-Precision Voltage Sensing in Electric Vehicles

Plano, Texas – June 21, 2023 – Diodes Incorporated (Diodes) (Nasdaq: DIOD) introduces a series of high-precision current shunt monitors designed to measure small sense voltages across a wide common-mode voltage range in electric vehicles (EVs): the [ZXCT21xQ](#) family. Automotive applications for these single-stage instrumentation amplifiers include current sensing of load/rail currents in brushless DC (BLDC) motor controllers, e-compressors, high-power DC-DC converters, on-board chargers (OBC), battery management systems (BMS), ADAS power supplies, and wireless phone chargers.

Low offset voltage ($\pm 30\mu\text{V}$) and gain error ($\pm 0.5\%$ and $\pm 0.8\%$) of the zero-drift core (typical $\pm 100\text{nV}/^\circ\text{C}$) in these devices enable current sensing across the shunt, with maximum voltage drops as low as 10mV (full-scale). This allows small-value sense resistors to be used in high-accuracy monitoring of large-magnitude currents, while reducing the power lost during measurement. Furthermore, the low quiescent current consumption of 100 μA (maximum) also helps to minimize power consumption.

These current monitors have a 0-26V rail-to-rail common-mode sense voltage range (irrespective of supply voltage), enabling both high-side and low-side precision current measurement, while its REF pin enables bi-directional current flow measurement. The ZXCT21xQ family has six voltage gain options (50V/V, 75V/V, 100V/V, 200V/V, 500V/V, and 1000V/V), each with its own unique order number with three accuracy variants.

All devices in the ZXCT21xQ series are AEC-Q100 Grade 1 qualified, manufactured in IATF 16949 certified facilities, and support PPAP documentation. Each operates over a -40°C to $+125^\circ\text{C}$ temperature range and are available in industry-standard SOT363 package. The [ZXCT21xQ](#) devices are available from \$0.321 to \$0.451 in 1,000 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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