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Microchip Delivers Accuracy and Energy-efficiency of Current Monitoring in High-temperature Automotive Applications

New high-side current sense amplifier offers the industry's lowest offset for AEC-Q100 Grade 0 qualified devices, enabling a more accurate and energy efficient current measurement solution for those applications exposed to extreme temperatures

CHANDLER, Ariz., Feb. 16, 2021 (GLOBE NEWSWIRE) -- With the proliferation of automation and connectivity throughout the automotive and industrial markets, the need to accurately measure a dynamic current in the presence of high frequency noise often plagues modern vehicle and factory applications. In order to combat electrically noisy environments and address the need for higher accuracy current measurement, Microchip Technology Inc. **(Nasdaq: MCHP)** today introduced its **high-side current sense amplifiers** — featuring the industry's lowest offset for AEC-Q100 Grade 0 qualified high-side current sense amplifier devices.

AEC-Q100 qualified, the MCP6C02 amplifier is offered in both a Grade 1 6-pin SOT-23 package and a Grade 0 8-pin 3x3 VDFN package. Delivering a maximum offset error of only 12 µV, the VDFN package offers the lowest offset voltage for any Grade 0 high-side current sense amplifier. Specified over a temperature range of -40°C to +150°C, its market-leading offset error allows the use of smaller value shunt resistors while also maintaining a high measurement resolution. This enables a more accurate and energy efficient current measurement solution for those applications exposed to extreme temperatures, like the motor within a vehicle's water pump. In addition, the VDFN package is processed with wettable flank plating, allowing for visual inspection of the solder joints and removing the need for x-ray scanning as required for traditional DFN packages.

Microchip's MCP6C02 and MCP6C04 devices also feature an on-chip electromagnetic interference (EMI) filter and a zero-drift architecture. The EMI filter helps provide added protection against high-frequency electrical interference, such as wireless hotspots and radio frequencies, while the self-correcting architecture brings increased accuracy to current measurement. Together these features enable developers to create higher performance solutions in a wide variety of applications, such as creating a current controlled feedback loop for a power supply or motor, monitoring and charging batteries, or monitoring current levels for safety reasons.

"The addition of high-side current sense amplifiers to Microchip's portfolio augments our total system solution for critical functions such as motor control, power supplies and battery management," said Bryan Liddiard, vice president of Microchip Technology's mixed signal linear business unit. "Combined with our mixed signal solutions, microcontrollers, power

management and communication offerings, Microchip enables our clients to move quickly from concept to production by utilizing a low-risk, proven supply partner."

Development Tools
Microchip's new ADM01104 evaluation board supports both the MCP6C02 and MCP6C04 high-side current sense amplifiers, and each device is pin, package and function compatible. To avoid subjection to high voltages and currents, the evaluation board ships pre-populated, providing proper filtering and protection of the input pins. Offering multiple reference voltage options, it enables a quick evaluation of the device for unidirectional and bidirectional modes of operation.

Pricing and Availability
The MCP6C02 6-pin SOT-23 package option is available for $1.22, while the MCP6C02 8-pin 3x3 VDFN package option is available for $1.41, each in 10,000-unit quantities. The MCP6C04 6-pin SOT-23 package is available for $0.98, also in 10,000-unit quantities.

For additional information, contact a Microchip sales representative, authorized worldwide distributor or **visit Microchip's website**. To purchase products mentioned here, **click to order now** or contact a Microchip authorized distributor.

Resources
High-res images available through Flickr or editorial contact (feel free to publish):

- Application image: **https://www.flickr.com/photos/microchiptechnology/48708004607**
- MCP6C02 SOT-23 Package image: **https://www.flickr.com/photos/microchiptechnology/48707521038**
- MCP6C02 VDFN Package image: **https://www.flickr.com/photos/microchiptechnology/48707863916**
- MCP6C04 SOT-23 Package image: **https://www.flickr.com/photos/microchiptechnology/48707531493**
- Evaluation board image: **https://www.flickr.com/photos/microchiptechnology/50723312931**

About Microchip Technology
Microchip Technology Inc. is a leading provider of smart, connected and secure embedded control solutions. Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs which reduce risk while lowering total system cost and time to market. The company's solutions serve more than 120,000 customers across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at www.microchip.com.

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