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Microchip Technology Enables Smart Sensor Applications With New Family of the World's Smallest and Most Cost-Effective DSCs

dsPIC33FJ12GP is First Digital Signal Controller Family in 18-pin, 6x6 mm Packages With Prices as Low as $1.99 Each in 10,000-unit Quantities

CHANDLER, Ariz.--(BUSINESS WIRE)--

Microchip Technology Inc. (NASDAQ: MCHP), a leading provider of microcontroller and analog semiconductors, today announced the dsPIC33FJ12GP family of Digital Signal Controllers (DSCs), which are uniquely suited for a new class of "Smart Sensor" applications. Because they are the world's smallest DSCs (in 18- and 28-pin packages as small as 6x6 mm) and the lowest priced (starting at $1.99 each in 10,000-unit quantities), the 40 MIPS dsPIC33FJ12GP family enables a new class of sensor processing, dubbed Smart Sensors, which can enhance sensor performance and extend product life.

All embedded applications react to inputs from sensors, and often the performance of the overall system (and system reliability) is gated by the quality of sensor inputs. With dsPIC33FJ12GP package sizes as small as 6x6 mm, the processor can be moved closer to the sensor--eliminating lead noise and offloading this workload from a central processor--creating a Smart Sensor scenario.

Using libraries and filter design tools, digital filters can replace analog filters to reduce noise. The dsPIC33FJ12GP's on-chip Analog-Digital-Converters (ADCs), with up to 1.1 Msps, permit signal oversampling to improve signal-to-noise ratios. Spectral analysis can be conducted adjacent to the sensor, permitting more robust application performance and a digital connection to upstream processors. Additionally, the dsPIC33FJ12GP family has sufficient performance and resources to serve as the sole processor in some Smart Sensor applications.

"As digital signal controllers achieve new low price points and package sizes, we see new worlds of opportunity waiting for just such a solution," said Sumit Mitra, vice president of Microchip's Digital Signal Controller Division.

"Embedded applications work no better than the quality of their input, which is usually some sort of sensor," Mitra continued. "Now sensor processing can be handled in an entirely new way, whether it be analyzing signals in the frequency domain, improving signal-to-noise, or simply making an inexpensive sensor act like an expensive sensor."

Microchip is also the only company to offer seamless migration between its 16-bit microcontrollers and DSP-enabled DSCs, by providing pin, peripheral, software and tool

compatibility. Being able to easily migrate among the 92 dsPIC(R) DSCs and PIC24 microcontrollers in Microchip's rapidly growing 16-bit portfolio accelerates time to market and provides a path to quickly respond to requirement changes during the design process.

"With their dsPIC DSCs and PIC24 MCUs, Microchip is the only company on the planet with truly unified DSP and MCU product lines," said Will Strauss, president of Forward Concepts. "The dsPIC33 family gives MCU people an easy migration path to DSP performance."

The dsPIC33FJ12GP family also features Peripheral Pin Select, which allows designers to remap digital I/O to optimize board layout--enabling smaller boards, less noise and the use of a lower pin-count DSC. Other key features of the new family include:

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--  40 MIPS performance in 6x6 mm packages

--  12 Kbytes of Flash and 1 Kbyte of RAM

--  ADC w/ up to 10 channels, and user-selectable 10-bit or 12-bit
    mode (10-bit mode enables simultaneous sampling, eliminating
    lag time between samples)

--  1 UART, 1 SPI and 1 I2C(TM) Port

Development Support and Availability
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Within Microchip's MPLAB(R) Integrated Development Environment, high-level resources are added in a microcontroller-friendly way to allow the utilization of DSC features with minimal effort. These features include Microchip's Visual Device Initializer, which can generate initialization code in a few clicks. Additionally, the low-cost Digital Filter Design tool and the free dsPICworks(TM) software can help users define filters to their specifications, simulate performance and generate code, all without immersion in DSP theory. Finally, the new 16-bit 28-pin starter board (part # DM300027) can be used for development with any of Microchip's 28-pin 16-bit microcontroller and DSCs.

Both members of the dsPIC33FJ12GP family are available today for general sampling and volume production, with prices starting at $1.99 each in 10,000-unit quantities. The dsPIC33FJ12GP201 is available in 18-pin SOIC and SDIP packages. The dsPIC33FJ12GP202 is available in 28-pin QFN, SOIC and SDIP packages. For additional information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's Web site at www.microchip.com/16bit.

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About Microchip Technology

Microchip Technology Inc. (NASDAQ: MCHP) is a leading provider of microcontroller and analog semiconductors, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. 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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