

Infineon's New 8-bit Microcontrollers Operate With No Limitations at 150 C

March 3 2010

At the Embedded World Show 2010 in Nuremberg today, Infineon Technologies introduced a complete and scalable high-temperature 8-bit microcontroller (MCU) family capable of operating at up to 150 °C ambient temperature, meeting the most rigorous industry standard for use in automotive and industrial electronics application environments.

The new XC800 150°C family is specified without limitations for the temperature range from -40 °C up to 150 °C. This provides a highly effective alternative to the costly and complex [heat dissipation](#) and cooling systems and other alternative approaches used today to incorporate MCUs into harsh operating environments.

The XC800 150°C family is ideally suited for use in automotive applications, such as turbo chargers, engine control fans, throttle or valve control, EPS, fuel/oil sensors, and water, oil or fuel pumps. The range of potential industrial applications includes, for example, heating control and furnace systems or electronic control systems inside of motors.

AEC-Q100 is a set of reliability stress tests defined by the Automotive Electronics Council (AEC). The new high-temperature devices are qualified and tested in accordance with the AEC-Q100 Grade 0 (-40 °C to 150 °C) requirements, which makes the MCUs ideal for automotive applications in the engine compartment and industrial solutions in extreme and harsh environments.

The XC800 150°C devices can be placed closer to sensors or actuators to

enable better connectivity, efficient motor control, and lower system cost when compared to previously available electronic or mechanical solutions. The elimination of heat shields and extra wiring saves cost and reduces complexity in both automotive and industrial applications. All XC800 150°C products are based on Infineon's robust and proven Flash technology and high-quality manufacturing, ensuring high reliability.

XC800 150°C family with powerful peripherals

The XC800 150°C family extends the powerful and proven XC800 MCUs into an emerging and important class of applications. Based on an 8051 processor core, the family offers different flash memory sizes (4kByte to 32kByte) and integrates such features as oscillator, voltage regulator, EEPROM and supervisory circuits to reduce overall system costs. Powerful peripherals supporting various motor control and power conversion applications are offered on different devices in the XC800 family. These include a Capture/Compare Unit (CCU6) for flexible PWM generation, an enhanced fast A/D converter for precise measurement and hardware synchronization to PWM, and MultiCAN modules with up to two CAN nodes. XC800 150°C MCUs featuring on-chip CAN modules reduce the CPU load by performing most of the functions required by the networking protocol (masking, filtering and buffering of CAN frames). In addition, the XC800 150°C family is equipped with a 16-bit vector computer supporting trigonometric calculations needed for field oriented motor control (FOC). The new devices are offered in various packages including T-SSOP with 24, 28 and 38 pins and QFP with 48 pins.

Engineering samples of the first XC800 150°C devices, the FOC capable XC886 Grade 0 with 24kByte and 32kByte Flash memory, are available. Start of production is scheduled for July 2010. Other devices in the new family are planned for introduction in 2011.

More information: www.infineon.com/XC800/150C

Source: Infineon

Citation: Infineon's New 8-bit Microcontrollers Operate With No Limitations at 150 C (2010, March 3) retrieved 24 April 2024 from <https://phys.org/news/2010-03-infineon-bit-microcontrollers-limitations.html>

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