WHAT'S SO IMPORTANT ABOUT 8 PINS?

Many everyday applications are *space* and *weight* constrained. System designers that traditionally relied on simple electronic logic circuits, ASICs of a few hundred gates or electromechanical design to develop low-cost applications are now turning to the PIC12CXXX 8-pin MCU family. Why?

• 8 pins are very user friendly and easy to use.

• The 8-pin SOIC package occupies *only* .04-square-inch of board space.

• The PIC12CXXX MCU family is fully pin-compatible allowing for seamless migration between product families.

• PIC12CXXX one-time programmable (OTP) MCUs offer high design flexibility, quick time-to-revenue, the ability to make custom changes via firmware and reduced inventory risk.

• High-speed, high-performance RISC architecture (all arithmetic and logical instructions execute in 1 microsecond) allows one MCU to perform required embedded control functions.

The PIC12CXXX is opening a whole world of flexibility, ease of use, time-to-market advantages and development tool support never enjoyed before.

TYPICAL PIC12CXXX MCU LOW-COST APPLICATIONS

Battery Chargers	Clocks	Curling Irons
Electric Motors	Electric Shavers	Gas Detectors
Hair Dryers	Pointing Devices	Remote Controls
Remote Sensors	Rheostats	Rice Cookers
Security Systems	Thermometers	Thermostats
Toasters	Toys	Wristwatches

USE YOUR IMAGINATION

Think of any product that has always wanted to use the embedded intelligence offered by a MCU but in the past had to settle for discrete logic circuits, programmable logic devices, and/or electromechanical control to obtain shorter leadtime benefits, increased flexibility and reduced inventory risk. Then think PIC12CXXX MCUs.

Microchip Worldwide Sales and Distribution

Find out how the power of an 8-pin PICmicro MCU can make your designs smarter. Visit our Web Site at www.microchip.com or call your nearest Microchip sales representative now to find out more.

WORLDWIDE SALES & SERVICE

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Germany	49 89 627 144 0
Italy	39 39 689 9939

As of 8/29/97

MICROCHIP

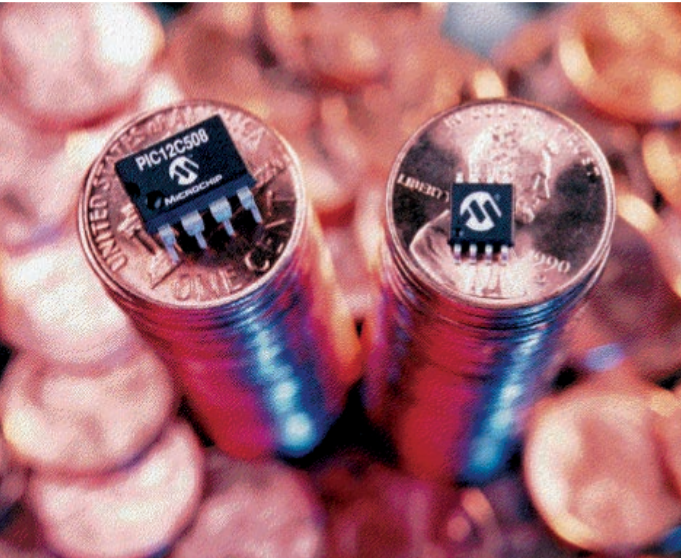# PIC12CXXX 8-PIN, 8-BIT MICROCONTROLLERS
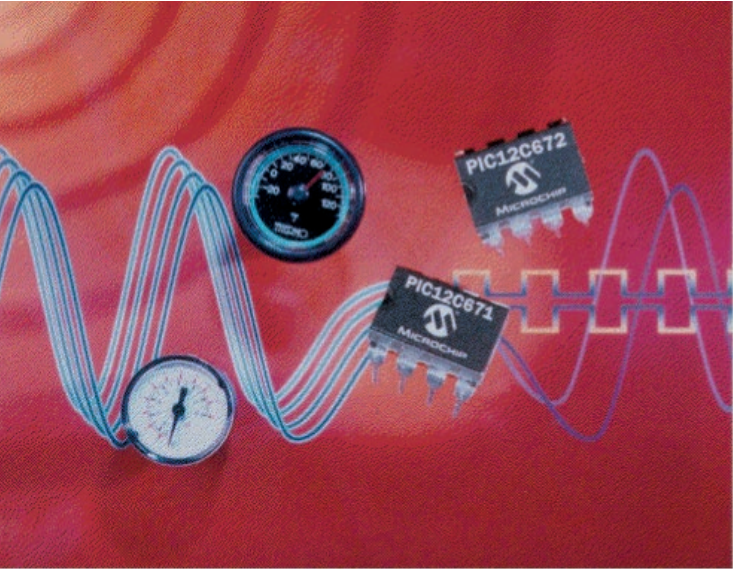
ALL THE POWER OF A PICmicro™ MCU IN AN 8-PIN PACKAGE.

Actual Size SOIC

MICROCHIP

The PIC12CXXX MCU family packs the powerful PICmicro 8-bit high-speed RISC architecture into 8-pin PDIP and SOIC packages, creating the world's smallest 8-bit MCUs. The first two members of this revolutionary product family, the PIC12C508 and PIC12C509, are the world's first 8-pin MCUs.

THE WORLD'S FIRST 8-BIT RISC MCU IN AN 8-PIN PACKAGE

Microchip – the worldwide leader in low-cost, high-performance embedded control technology – introduces the PIC12CXXX MCU family which packs the high-speed, high-performance PICmicro 8-bit RISC architecture into tiny, .04-square-inch, 8-pin packages.

The PIC12CXXX MCU family provides intelligence, data acquisition and mixed-signal capability to new applications where this performance was not previously possible because of cost and space constraints. In addition, each PIC12CXXX device is code compatible with the complete Microchip PICmicro 8-bit OTP family, allowing for easy migration of code to higher performance silicon solutions.

The PIC12C508 and PIC12C509, the world's first 8-bit MCUs available in 8-pin packages, are the first members of the PIC12CXXX MCU family. Extending the family are the PIC12C671 and PIC12C672 with integrated analog-to-digital converter (ADC) technology and the PIC12CF518 and PIC12CF519 with on-board *FLASH* data memory.

All these devices are absolutely ideal solutions for personal care appliances, remote transmitters, portable voice recorders and security systems. Additionally, the MCUs are suited to measuring environmental conditions such as temperature, pressure, motion and voltage for applications like sensors and detectors.

PIC12C5XX KEY FEATURES:

- OTP EPROM program memory
- Fast single cycle instructions (1 µs at 4 MHz)
- Multiplexed pins that can provide five bi-directional I/O and one input
- Internal 4 MHz RC oscillator with programmable calibration
- Software selectable internal pull-ups
- Software selectable Wake Up from SLEEP on pin change
- Watchdog Timer and 8-bit real time clock/counter
- In-Circuit Serial Programming™ for system programming and customization during board production
- Only 33 instructions to learn

PIC12C67X KEY FEATURES:

All the PIC12C5XX features *plus*:
- On-chip 8-bit analog-to-digital converter
- Only 35 instructions to learn
- Interrupts
- Maximum speed up to 10 MHz

PIC12CF51X KEY FEATURES:

All the PIC12C5XX features *plus*:
- 16 bytes *FLASH* data memory

THE MECHATRONIC REVOLUTION

Mechatronics, the integration of mechanical systems, microelectronics and software, has been proceeding at a rapid pace since the introduction of cost-effective 8-bit microcontrollers (MCUs). Microchip Technology Inc.'s PICmicro™ – the world's most popular 8-bit RISC MCU with over half-a-billion devices shipped since 1990 – is at the center of this mechatronic revolution. These devices provide MCU intelligence for everyday consumer products and home appliances that were once the province of expensive industrial controls and electromechanical designs.

Microchip continues innovating the electronics industry by opening a whole universe of applications and everyday products to the benefits of the PICmicro 8-bit RISC MCU architecture. The thousands of designers and millions of products using the PICmicro MCU family is a testament to the increasing content of intelligent electronics in consumer goods, appliances, automobiles, industrial equipment, computers, keyless entry systems and communications equipment.

PIC12CXXX 8-BIT, 8-PIN MCU FAMILY

PRODUCT	PROGRAM MEMORY	DATA RAM	FLASH DATA	MAX. SPEED	I/O	ADC
PIC12C508	512 x 12	25 Bytes	–	4 MHz	6	-
PIC12C509	1024 x 12	41 Bytes	_	4 MHz	6	-
PIC12C671	1024 x 14	128 Bytes	–	10 MHz	6	4-ch, 8-bit
PIC12C672	2048 x 14	128 Bytes	–	10 MHz	6	4-ch, 8-bit
PIC12CF518	512 x 12	25 Bytes	16 Bytes	4MHz	6	–
PIC12CF519	1024 x 12	41 Bytes	16 Bytes	4 MHz	6	–

DEVELOPMENT TOOL SUPPORT

Microchip is committed to providing useful and innovative solutions for embedded system designs. The Company has the industry's most comprehensive set of development tools which allow system engineers to quickly prototype, make code changes and get designs to market faster than ever before.

More than 100,000 development systems have shipped since 1990. In addition, more than 125 third party suppliers provide application development systems and tools to support the popular PICmicro architecture.

PIC12CXXX MCU DEVELOPMENT TOOLS	
MPLAB™	Integrated Development Environment (IDE)
MPLAB-C	C compiler for PICmicro MCUs
PICMASTER®	Full-featured modular in-circuit emulator
PRO MATE™ II	Full-featured, modular device programmer
PICSTART® Plus	Entry-level development kit with programmer

THE COMPLETE PRODUCT SOLUTION – MICROCHIP DELIVERS IT.

Microchip Technology Inc. is the worldwide leader in low-cost, high-performance embedded control technology. The combination of 8-bit RISC MCUs, advanced OTP, EEPROM, FLASH and ROM memory technologies and the industry's most comprehensive set of development tools provide the basis for Microchip's MCU leadership.

The high level of integration offered by PICmicro MCUs can reduce external component count and development costs, enhance system reliability, reduce electromagnetic interference, minimize power consumption and quicken time to market. In addition, the Microchip global network of experienced field application engineers and technical support personnel provides technical product and system assistance to further streamline design, prototype and production activities.

PICmicro MCUs offer upward compatible instruction sets, a broad variety of peripherals and a wide range of packaging styles and voltage ranges – all to meet today's demanding embedded system requirements.