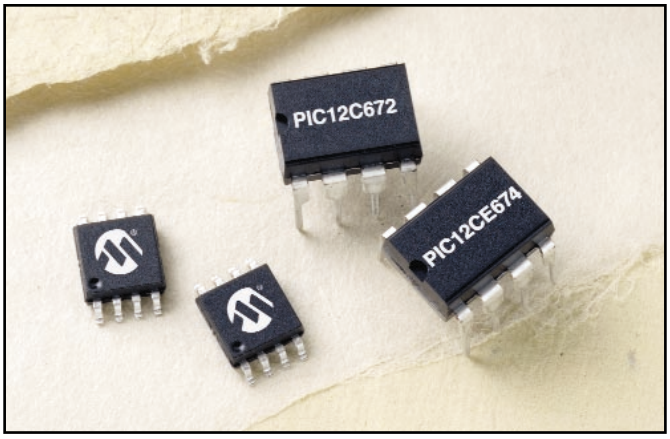
PIC12C6XX Microcontroller Family

Product Information

The PIC12C6XX microcontroller (MCU) family packs Microchip's powerful RISC-based PICmicro® MCU architecture into 8-pin DIP and SOIC packages. The PIC12C6XX products feature a 14-bit instruction set, small package footprints, low operating voltage of 2.5 volts, interrupt handling capability, internal oscillator, on-board EEPROM data memory and a deeper stack. The industry's first 8-pin devices bring features and provide electronic intelligence not previously available in mechanical applications, because of cost or size considerations. The PIC12C6XX family is ideally suited for applications ranging from security and remote sensors to appliance control and automotive.



High Performance RISC CPU:

- Only 35 single word instructions to learn
- All instructions are single cycle (400 ns) except for program branches which are two-cycle
- Operating speed: DC - 10 MHz clock input
  DC - 400 ns instruction cycle
- 1024 x 14 words to 2048 x 14 words of EPROM/OTP program memory
- 128 bytes of user RAM
- 14-bit wide instructions
- 8-bit wide data path
- Special function hardware registers
- 8-level deep hardware stack
- Direct, indirect and relative addressing modes for data and instructions
- 6 I/O pins
- 8-pin DIP and SOIC packages

Peripheral Features:

- 8-bit real-time clock/counter (TMR0) with 8-bit programmable prescaler
- Interrupt-on-pin change (GP0, GP1, GP3)
- Up to 16 bytes of EEPROM data memory
  – 1,000,000 erase/write cycle EEPROM data memory
  – EEPROM data retention > 40 years
- Four-channel, 8-bit A/D Converter

Special Microcontroller Features:

- In-Circuit Serial Programming™ (ICSP™) of program memory (via two pins) for EPROM/OTP
- Internal 4 MHz oscillator with programmable calibration
- Selectable clockout
- Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Programmable code protection
- Power saving SLEEP mode
- Internal pull-ups on I/O pins
- Internal pull-up on $\overline{\text{MCLR}}$ pin
- Selectable oscillator options:
  INTRC: Precision internal 4 MHz oscillator
  EXTRC: External low cost RC oscillator
  XT: Standard crystal/resonator
  HS: High speed crystal/resonator
  LP: Power saving, low frequency crystal

CMOS Technology:

- Low power, high speed CMOS EPROM/EEPROM technology
- Fully static design
- Wide operating voltage range: 2.5V to 5.5V
- Commercial, Industrial and Extended temperature ranges
- Low power consumption:
  < 2 mA @ 5V, 4 MHz
  15 µA typical @ 3V, 32 kHz
  < 1 µA typical standby current

PIC12C6XX Microcontroller Family *Continued*

Additional Information:

- Microchip's web site: ***www.microchip.com***
- Microchip's Technical Library CD-ROM, Order No. DS00161
- Application Notes are available in:
  – *Embedded Control Handbook,* Order No. DS00092
  – *Embedded Control Handbook, Volume 2, Math Library,* Order No. DS00167
  – *Embedded Control Handbook Update 2000,* Order No. DS00711
- Microchip's *Overview, Quality Systems and Customer Interface System,* Order No. DS00169
- Third party software and hardware support:
  – Emulators
  – Programmers
  – Gang Programmers
  – Software Tools
  – Development Boards and Accessories
  – Design Consultants
  – *Third Party Guide,* Order No. DS00104

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Product	Program Memory OTP Bytes	Words	EEPROM Data Memory	Data RAM Bytes	Max. Speed MHz	I/O Pins	ADC 8-Bits	Timers	ICSP™	Other Features	Pins
PIC12C671	1792	1024x14	—	128	10	6	4	1+WDT	Yes	25mA source/sink per I/O, internal oscillator	8
PIC12C672	3584	2048x14	—	128	10	6	4	1+WDT	Yes	25mA source/sink per I/O, internal oscillator	8
PIC12CE673*	1792	1024x14	16	128	10	6	4	1+WDT	Yes	25mA source/sink per I/O, internal oscillator	8
PIC12CE674*	3584	2048x14	16	128	10	6	4	1+WDT	Yes	25mA source/sink per I/O, internal oscillator	8

**Available in DIP only*

Development Tools from Microchip		Resale Price*
MPLAB® IDE	Integrated Development Environment (IDE)	FREE
MPASM™ Assembler	Universal PICmicro macro-assembler	FREE
MPLINK™ Object Linker/ MPLIB™ Object Librarian	Linker/Librarian	FREE
C compiler	Sold by third-party vendors (HI-TECH, IAR, CCS)	Contact Vendor
MPLAB® SIM	Software Simulator	FREE
ICEPIC™	Low cost in-circuit emulator	Starting at $789
MPLAB® ICE 2000	Full featured modular in-circuit emulator	Starting at $2,045
PICSTART® Plus	Entry level program loader & dev. kit with PICC Lite™ Compiler	$199
PRO MATE® II	Full featured, modular device programmer	Starting at $854

*All prices are manufacturer's suggested resale for North America.
†Contact Microchip for instructions on how to use the MPLAB® ICD with PIC16C72/73/74/76/77

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