

μPD78C1X Family Of 8-Bit, Single-Chip CMOS Microcomputers With A/D Converters

NEC
NEC Electronics Inc.

Description

The μPD78C1X family of single-chip microcomputers integrates sophisticated on-chip peripherals normally provided only by external components. The family's internal 16-bit ALU, data paths, and powerful instruction set significantly improve system throughput. The combination of powerful on-chip peripherals and a high-performance microcomputer core make the μPD78C1X family ideal for a wide variety of embedded control applications.

These devices integrate a 16-bit ALU, up to 16K bytes of ROM, 256-byte RAM, an eight-channel A/D converter, a multifunction 16-bit timer/event counter, two 8-bit timers, a USART, and two zero-crossing detect inputs on a single die. This mix of peripheral functions allows the μPD78C1X family to be used in applications requiring both analog and digital signal interface and processing.

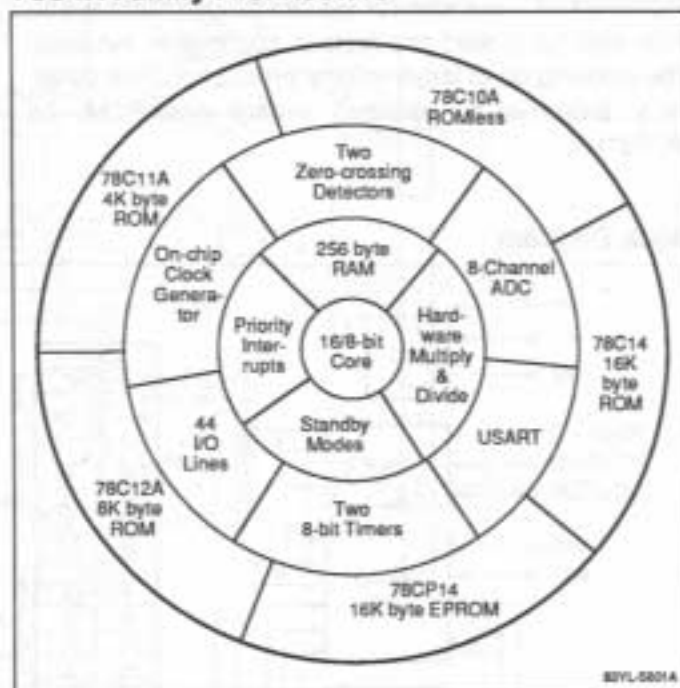
The family includes the μPD78C10A ROMless device, the μPD78C11A 4K-byte mask ROM device, the μPD78C12A 8K-byte mask ROM device, and the μPD78C14 16K-byte mask ROM version.

Features

- CMOS technology
 - Single +5 V supply
 - 25 mA operating current (78C10A/C11A)
 - 30 mA operating current (78C14)
- Complete single-chip microcomputer
 - 16-bit ALU
 - 4K x 8 ROM (78C11A)
 - 8K x 8 (78C12A)
 - 16K x 8 ROM (78C14)
 - 256-byte RAM
- 44 I/O lines
- Two zero-cross detect inputs
- Two 8-bit timers
- Expansion capabilities
 - 8085A-like bus
 - 60K-byte external memory address range
- Eight-channel, 8-bit A/D converter
 - Autoscan mode
 - Channel select mode
- Full-duplex USART
 - Synchronous and asynchronous
- 154 instruction
 - 16-bit arithmetic
 - Hardware multiply and divide
 - HALT and STOP instructions

- 0.8-μs instruction cycle time (15-MHz operation)
- Prioritized interrupt structure
 - Three external
 - Eight internal
- Standby function
- On-chip clock generator
- 64-pin plastic QUIP, shrink DIP or miniflat; 68-pin PLCC

78C1X Family Architecture



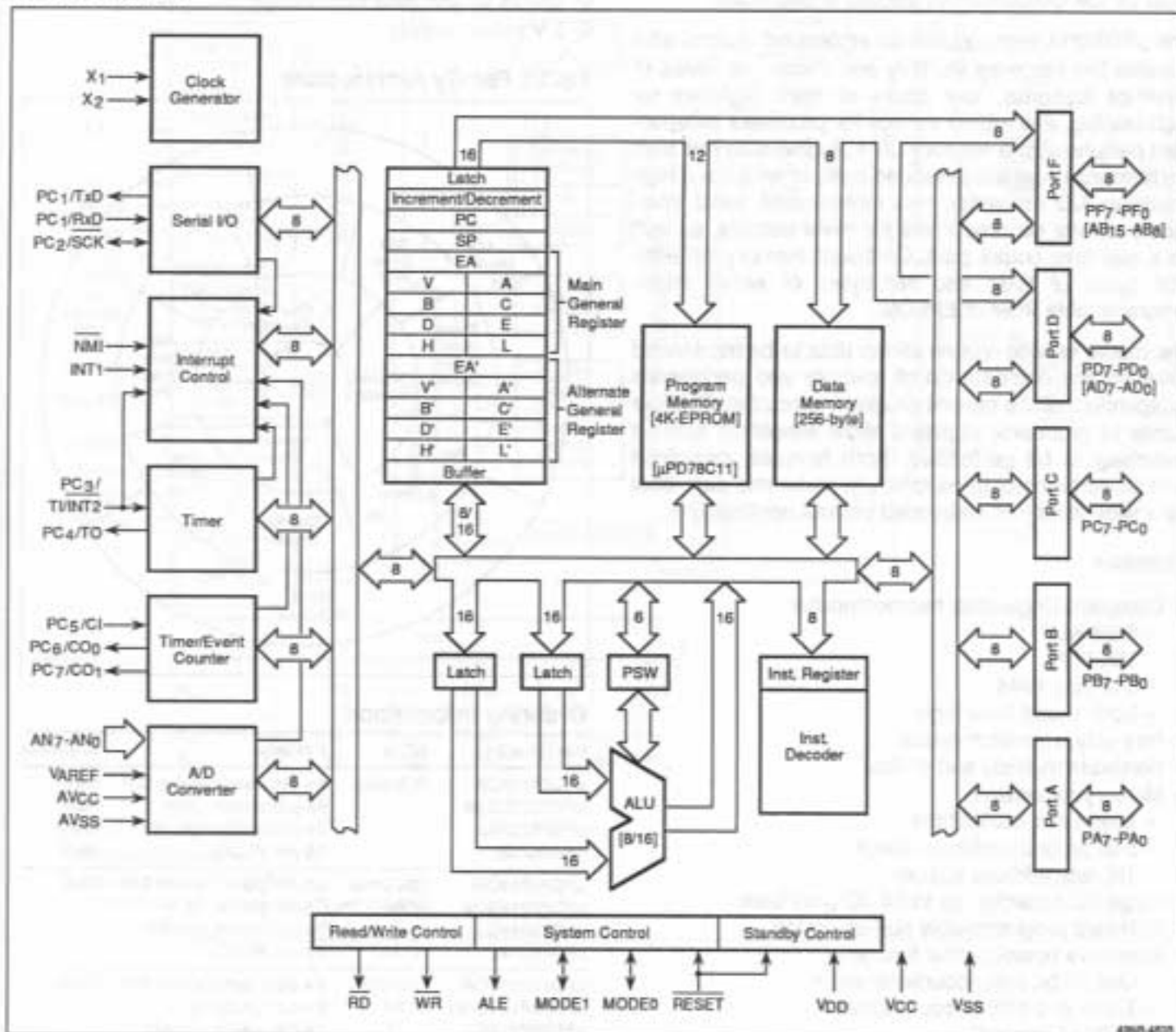
Ordering Information

Part Number	ROM	Package	Availability
μPD78C10AG-36	ROMless	64-pin plastic QUIP	Now
μPD78C10ACW		64-pin plastic shrink DIP	
μPD78C10AG-1B		64-pin plastic miniflat	
μPD78C10AL		68-pin PLCC	
μPD78C11AG-36	Mask ROM	64-pin plastic QUIP	Now
μPD78C11ACW	4K	64-pin plastic shrink DIP	
μPD78C11AG-1B		64-pin plastic miniflat	
μPD78C11AL		68-pin PLCC	
μPD78C12AG-36	Mask ROM	64-pin plastic QUIP	Now
μPD78C12ACW	8K	64-pin plastic shrink DIP	
μPD78C12AG-1B		64-pin plastic miniflat	
μPD78C12AL		68-pin PLCC	
μPD78C14G-36	Mask ROM	64-pin plastic QUIP	Now
μPD78C14CW	16K	64-pin plastic shrink DIP	
μPD78C14G-1B		64-pin plastic miniflat	
μPD78C14L		68-pin PLCC	

Ordering Information (cont)

Part Number	ROM	Package	Availability
μPD78CP14G-36	16K OTP	64-pin plastic QUIP	Now
μPD78CP14CW	ROM	64-pin plastic shrink DIP	
μPD78CP14G-1B		64-pin plastic miniflat	
μPD78CP14L		68-pin PLCC	
μPD78CP14R	16K UV	64-pin ceramic QUIP	Now
μPD78CP14DW	EPROM	64-pin shrink cerdip	

Block Diagram



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