

NEC

MOS INTEGRATED CIRCUIT

 μ PD75004(A), 75006(A), 75008(A)**4-BIT SINGLE-CHIP MICROCOMPUTER****DESCRIPTION**

The μ PD75008(A) is one of the 75X Series 4-bit single-chip microcomputer.

In addition to high-speed operation with 0.95 μ s minimum instruction execution time for the CPU, the μ PD75008(A) employs a serial bus interface with standard NEC format, the μ PD75004(A) is a powerful product with a high cost/performance ratio.

The μ PD75P008 with PROM, which is provided with μ PD75008(A), is applicable for evaluating systems under development.

Detailed functions are described in the following user's manual. Be sure to read it for designing.

μ PD7500X Series User's Manual: IEM-5033

FEATURES

- More reliable than the μ PD75008
- Capable of high-speed operation and variable instruction execution time to power save
 - 0.95 μ s, 1.91 μ s, 15.3 μ s (Main system clock: operating at 4.19 MHz)
 - 122 μ s (Subsystem clock: operating at 32.768 kHz)
- 75X architecture comparable to that for an 8-bit microcomputer is employed
- Built-in NEC standard serial bus interface (SBI)
- Clock operation at reduced power dissipation (5 μ A TYP. : operating at 3 V)
- Enhanced timer function (3 channels)
- Interrupt functions especially enhanced for applications, such as remote control receiver

APPLICATIONS

Suitable for automotive and transportation equipments, etc.

Unless otherwise specified, μ PD75008(A) is treated as the representative model throughout this manual.

The information in this document is subject to change without notice.

ORDERING INFORMATION

Part Number	Package	Quality Grade
μPD75004CU(A)-xxx	42-pin plastic shrink DIP (600 mil)	Special
μPD75004GB(A)-xxx-3B4	44-pin plastic QFP (□10 mm)	Special
μPD75006CU(A)-xxx	42-pin plastic shrink DIP (600 mil)	Special
μPD75006GB(A)-xxx-3B4	44-pin plastic QFP (□10 mm)	Special
μPD75008CU(A)-xxx	42-pin plastic shrink DIP (600 mil)	Special
μPD75008GB(A)-xxx-3B4	44-pin plastic QFP (□10 mm)	Special

Remarks: xxx is code number.

Please refer to "Quality Grade on NEC Semiconductor Devices" (Document Number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

DIFFERENCES BETWEEN μPD7500X(A) AND μPD7500X SERIES

Item		Product	μPD75004(A) μPD75006(A) μPD75008(A)	μPD75004 μPD75006 μPD75008
		Quality Grade	Special	Standard
Directly Driving LED	Not offered	Offered		
Electrical Specifications	Absolute Maximum Ratings	Differ in high level and low level output current.		
	DC Characteristics	Differ in low level output voltage.		

FUNCTIONAL OUTLINE

Item	Function			
Instruction Execution Time	0.95, 1.91, and 15.3 μs, (Main system clock: operating at 4.19 MHz) 122 μs (Subsystem clock: operating at 32.768 kHz)			
Internal Memory	ROM	4096 × 8-bit (μPD75004(A))		
		6016 × 8-bit (μPD75006(A))		
		8064 × 8-bit (μPD75008(A))		
	RAM	512 × 4-bit		
General-Purpose Registers	<ul style="list-style-type: none"> • 4-bit manipulation: 8 • 8-bit manipulation: 4 			
I/O Port	34	8	CMOS Input pins	Internal pull-up resistor specification by software is possible. : 25
		18	CMOS input/output pins	
		8	N-ch open-drain input/output	Withstand voltage: 10V Internal pull-up resistor specification by mask option is possible.
Timer	3 chs	Timer/event counter Basic interval timer: Also serves as watchdog timer Watch timer: Buzzer output possible		
Serial Interface	<ul style="list-style-type: none"> • 3-line serial I/O mode • 2-line serial I/O mode • SBI mode 			
Bit Sequential Buffer	16 bits			
Clock Output Function	$\Phi, f_x/2^3, f_x/2^4, f_x/2^6$			
Vector Interrupt	External: 3, Internal: 3			
Test Input	External: 1, Internal: 1			
System Clock Oscillator	<ul style="list-style-type: none"> • Main system clock oscillation ceramic/crystal oscillator • Subsystem clock oscillation crystal oscillator 			
Standby Function	STOP/HALT mode			
Operating Temperature Range	-40 to +85°C			
Operating Supply Voltage	2.7 to 6.0 V			
Package	<ul style="list-style-type: none"> • 42-pin plastic shrink DIP (600 mil) • 44-pin plastic QFP (□10 mm) 			

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