

MN101C23A / 23C / 23D

Type	MN101C23A (under planning) / 23C (under planning) / 23D (under development)
ROM (x8-bit)	32K/48K/64K
RAM (x8-bit)	1024/1536/2048
Minimum Instruction Execution Time	0.10 μs (at 4.5 to 5.5V, 20MHz) 0.25 μs (at 2.7 to 5.5V, 8MHz) 1.00 μs (at 2.0 to 5.5V, 2MHz)* 125 μs (at 2.0 to 5.5V, 32kHz)* * The lower limit for operation guarantee for EPROM built-in version is 2.7V.
Interrupts	• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 5 • Clock Timer • Serial 0 • Serial 1 • Serial 2 • Automatic Transfer finish • A/D Conversion finish • Key Scan
Timer Counter	Timer Counter 0 : 8-bit x 1 (Square-wave/8-bit PWM Output, Event Count, Generation of Remote Control Carrier) Clock Source1/1, 1/4 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input Interrupt SourceCoincidence with Compare Register 0 Timer Counter 1 : 8-bit x 1 (Square-wave Output, Event Count, Synchronous Output Event) Clock Source1/16, 1/64 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt SourceCoincidence with Compare Register 1 Timer Counter 0, 1 can be cascade-connected. Timer Counter 2 : 8-bit x 1 (Square-wave/8-bit PWM Output, Event Count, Synchronous Output Event) Clock Source1/1, 1/4 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt SourceCoincidence with Compare Register 2 Timer Counter 3 : 8-bit x 1 (Square-wave Output, Event Count, Generation of Remote Control Carrier, Serial 0 Baud Rate Timer) Clock Source1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input Interrupt SourceCoincidence with Compare Register 3 Timer Counter 2, 3 can be cascade-connected. Timer Counter 4 : 16-bit x 1 (Square-wave/16-bit PWM Output, Event Count, Synchronous Output Event, Input Capture) Clock Source1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input Interrupt SourceCoincidence with Compare Register 4 Time Base Timer (One-minute Count Setting, Five independently operable 8-bit Timer Counter) Clock Source1/4 of System Clock, 1/1, 1/8192 of OSC Oscillation Clock, 1/1, 1/8192 of XI Oscillation Clock Interrupt SourceCoincidence with Compare Register 5, 1/8192 Prescaler Overflow Watchdog Timer Clock Source1/2097152 of System Clock
Serial Interface	Serial 0 : 8-bit x 1 (Synchronous Type/Simple UART[Half-duplex]) Clock Source1/2, 1/4, 1/16 of System Clock 1/2 of Timer Counter 3 Serial 1 : 8-bit x 1 (Synchronous Type) Clock Source1/2, 1/8, 1/64 of System Clock 1/2 of Timer Counter 3 Serial 2 : 8-bit x 1 (Synchronous Type/Simple I²C) Clock Source1/1, 1/2, 1/4 of System Clock 1/2 of Timer Counter 0

I/O Pins	I/O	36	• Common use : 28 • Specified pull-up Resistor available • Input / Output selectable (bit unit)
	High Voltage	53	• Output: 29 • Number of I/O: 24 • Pch open drain (Breakdown Voltage -30V): FL drive: 53 • Specified pull-down resistor mask option: 35
A/D Inputs		10-bit x 8ch (with S/H)	
FL		(35 to 43) segments x (18 to 10) digits	
Special Ports		Buzzer Output, Remote Control Carrier Signal Output	
Package		LQFP100-P-1414	

Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc = 20MHz, VDD = 5V			60	mA
	IDD2	fx = 32kHz, VDD = 3V			100	μA
Supply Current at HALT	IDD3	fx = 32kHz, VDD = 3V			8	μA
Supply Current at STOP	IDD4	VDD = 5V			2	μA

Support Tool

In-Circuit Emulator	PX-ICE101C + PX-PRB101C04D
EPROM built-in Type	Use MN101CP23D (under development) in LQFP100-P-1414 package.
Pin Assignment	

