

MN101C309 / 30A

Type	MN101C309 (under planning) / 30A (under development)	
ROM (×8-Bit)	24 K / 32 K (External memory can be expanded)	
RAM (×8-Bit)	1 024 / 1 536 (External memory can be expanded)	
Minimum Instruction Execution Time	0.10 μs (at 4.5 V to 5.5 V, 20 MHz) 0.25 μs (at 2.7 V to 5.5 V, 8 MHz) 1.00 μs (at 2.0 V to 5.5 V, 2 MHz)* 125 μs (at 2.0 V to 5.5 V, 32 kHz)* * The lower limit for operation guarantee for EPROM built-in version is 2.7 V.	
Interrupts	<ul style="list-style-type: none"> • RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 5 • Time Base • Serial 0 • Serial 1 • Automatic Transfer finish • A/D Conversion finish 	
Timer Counter	<p>Timer Counter 0 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Generation of Remote Control Carrier)</p> <p>Clock Source 1/1, 1/4 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input</p> <p>Interrupt Source Coincidence with Compare Register 0</p> <p>Timer Counter 1 : 8-Bit × 1 (Square-Wave Output, Event Count, Synchronous Output Event)</p> <p>Clock Source 1/16, 1/64 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input</p> <p>Interrupt Source . Coincidence with Compare Register 1</p> <p>Timer Counter 0, 1 can be cascade-connected.</p> <p>Timer Counter 2 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Synchronous Output Event)</p> <p>Clock Source 1/1, 1/4 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input</p> <p>Interrupt Source Coincidence with Compare Register 2</p> <p>Timer Counter 3 : 8-Bit × 1 (Square-Wave Output, Event Count, Generation of Remote Control Carrier, Serial 0 Baud Rate Timer)</p> <p>Clock Source . 1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input</p> <p>Interrupt Source Coincidence with Compare Register 3</p> <p>Timer Counter 2, 3 can be cascade-connected.</p> <p>Timer Counter 4 : 16-Bit × 1 (Square-Wave/16-Bit PWM Output, Event Count, Synchronous Output Event, Input Capture)</p> <p>Clock Source 1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input</p> <p>Interrupt Source Coincidence with Compare Register 4</p> <p>Time Base Timer (One-Minute Count Setting, Independently operable 8-Bit Timer Counter 5)</p> <p>Clock Source . . . 1/4 of System Clock, 1/1, 1/8192 of OSC Oscillation Clock, 1/1, 1/8192 of XI Oscillation Clock</p> <p>Interrupt Source . . . Coincidence with Compare Register 5, 1/8192 Prescaler Overflow</p> <p>Watchdog Timer</p> <p>Interrupt Source 1/65536, 1/262144, 1/1048576 of System Clock (ROM Option)</p>	
Serial Interface	<p>Serial 0 : 8-Bit × 1 (Synchronous Type/Simple UART[Half-Duplex])</p> <p>Clock Source 1/2, 1/4, 1/16 of System Clock 1/2 of Timer Counter 3</p> <p>Serial 1 : 8-Bit × 1 (Synchronous Type)</p> <p>Clock Source 1/2, 1/8, 1/64 of System Clock 1/2 of Timer Counter 3</p>	
I/O Pins	I/O	41 • Common use • Specified pull-up Resistor available • Input/Output selectable (bit unit)
	Input	13 • Common use • Specified pull-up Resistor available

A/D Inputs	10-Bit × 8ch (with S/H)
Special Ports	Buzzer Output, Remote Control Carrier Signal Output, High-Current Drive Port
Package	MN101C309 LQFP064-P-1414 MN101C30A LQFP064-P-1414, SDIP064-P-0750 (under planning)

Electrical Characteristics

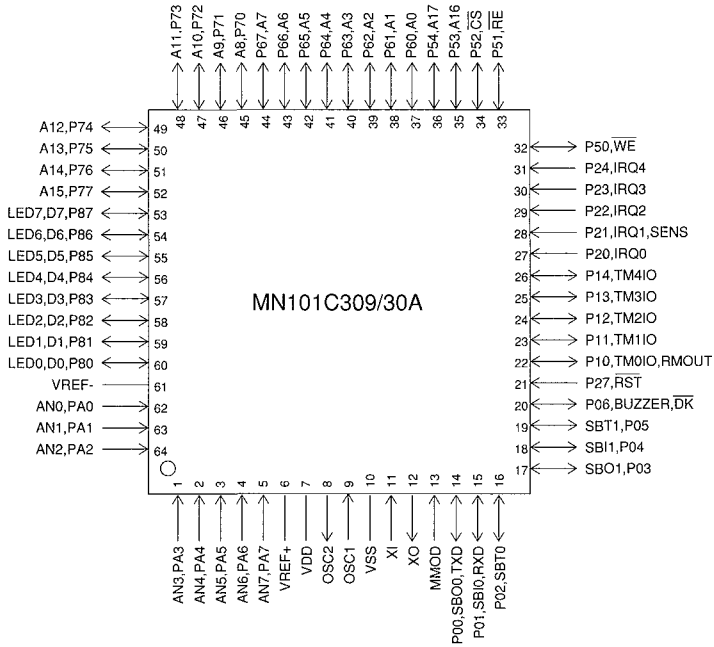
Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	$f_{osc} = 20 \text{ MHz}$, $V_{DD} = 5 \text{ V}$			60	mA
	IDD2	$f_x = 32 \text{ kHz}$, $V_{DD} = 3 \text{ V}$			100	μA
Supply Current at HALT1	IDD3	$f_x = 32 \text{ kHz}$, $V_{DD} = 3 \text{ V}$, $T_a = 25 \text{ }^\circ\text{C}$			8	μA
		$f_x = 32 \text{ kHz}$, $V_{DD} = 3 \text{ V}$, $T_a = 85 \text{ }^\circ\text{C}$			18	μA
Supply Current at STOP	IDD4	$V_{DD} = 5 \text{ V}$, $T_a = 25 \text{ }^\circ\text{C}$			2	μA
		$V_{DD} = 5 \text{ V}$, $T_a = -40 \text{ }^\circ\text{C}$ to $+85 \text{ }^\circ\text{C}$			20	μA

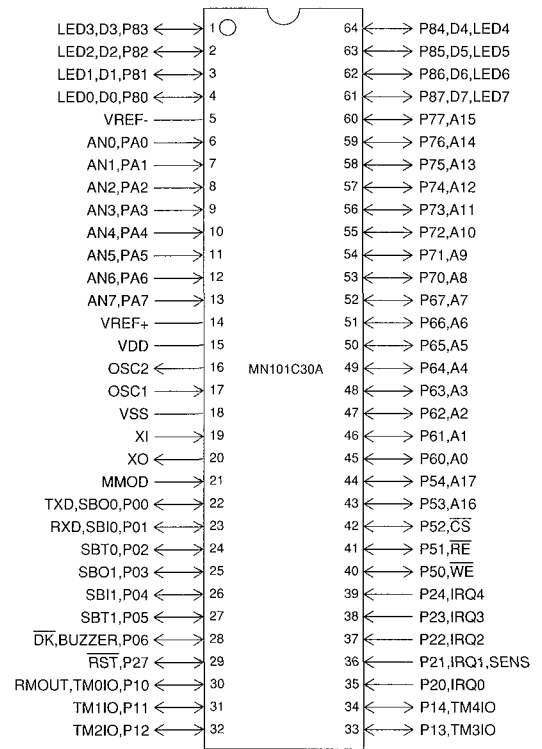
Support Tool

In-Circuit Emulator	PX-ICE101C / D + PX-PRB101C30-C / D	
EPROM built-in Type	Type	MN101CP30ABL (under development)
	ROM (× 8-Bit)	32 K
	RAM (× 8-Bit)	1 536
	Minimum Instruction Execution Time	0 10 μs (at 4 5 V to 5.5 V, 20 MHz)
		0 25 μs (at 2 7 V to 5.5 V, 8 MHz)
	Package	LQFP064-P-1414, SDIP064-P-0750 (under planning)

Pin Assignment



LQFP064-P-1414



SDIP064-P-0750 (under planning)