❑ 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	• 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	**Timer Counter 0 : 8-Bit × 1** (Square-Wave/8-Bit PWM Output, Event Count, Generation of Remote Control Carrier) Clock Source 1/1, 1/4 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input Interrupt Source Coincidence with Compare Register 0 **Timer Counter 1 : 8-Bit × 1** (Square-Wave Output, Event Count, Synchronous Output Event) Clock Source 1/16, 1/64 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt Source . Coincidence with Compare Register 1 **Timer Counter 0, 1 can be cascade-connected.** **Timer Counter 2 : 8-Bit × 1** (Square-Wave/8-Bit PWM Output, Event Count, Synchronous Output Event) Clock Source 1/1, 1/4 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt Source Coincidence with Compare Register 2 **Timer Counter 3 : 8-Bit × 1** (Square-Wave Output, Event Count, Generation of Remote Control Carrier, Serial 0 Baud Rate Timer) Clock Source . 1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input Interrupt Source Coincidence with Compare Register 3 **Timer Counter 2, 3 can be cascade-connected.** **Timer Counter 4 : 16-Bit × 1** (Square-Wave/16-Bit PWM Output, Event Count, Synchronous Output Event, Input Capture) Clock Source 1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input Interrupt Source Coincidence with Compare Register 4 **Time Base Timer** (One-Minute Count Setting, Independently operable 8-Bit Timer Counter 5) Clock Source . . . 1/4 of System Clock, 1/1, 1/8192 of OSC Oscillation Clock, 1/1, 1/8192 of XI Oscillation Clock Interrupt Source . . Coincidence with Compare Register 5, 1/8192 Prescaler Overflow **Watchdog Timer** Interrupt Source 1/65536, 1/262144, 1/1048576 of System Clock (ROM Option)
Serial Interface	**Serial 0 : 8-Bit × 1** (Synchronous Type/Simple UART[Half-Duplex]) Clock Source 1/2, 1/4, 1/16 of System Clock 1/2 of Timer Counter 3 **Serial 1 : 8-Bit × 1** (Synchronous Type) Clock Source . 1/2, 1/8, 1/64 of System Clock 1/2 of Timer Counter 3

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

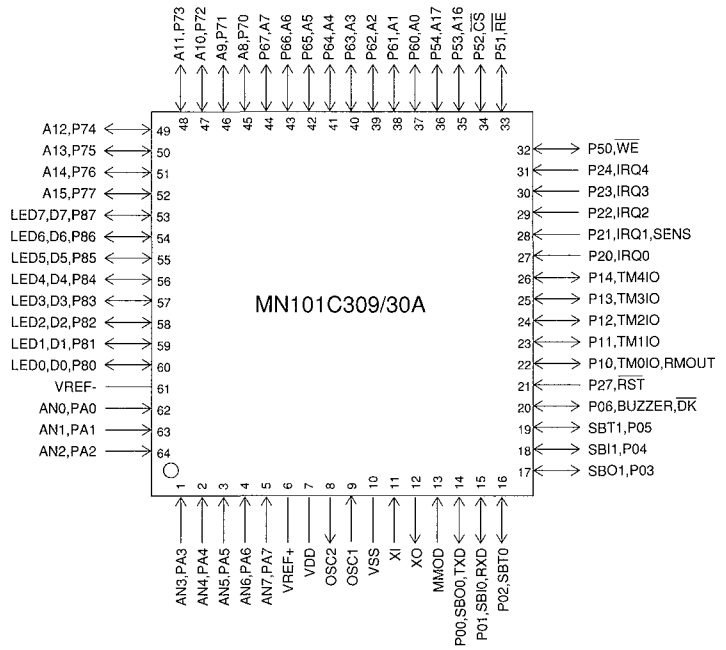
Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
Operating Supply Current	IDD1	fosc = 20 MHz, VDD = 5 V			60	mA
	IDD2	fx = 32 kHz, VDD = 3 V			100	µA
Supply Current at HALT1	IDD3	fx = 32 kHz, VDD = 3 V, Ta = 25 °C			8	µA
		fx = 32 kHz, VDD = 3 V, Ta = 85 °C			18	µA
Supply Current at STOP	IDD4	VDD = 5 V, Ta = 25 °C			2	µA
		VDD = 5 V, Ta = -40 °C to +85 °C			20	µA

Support Tool

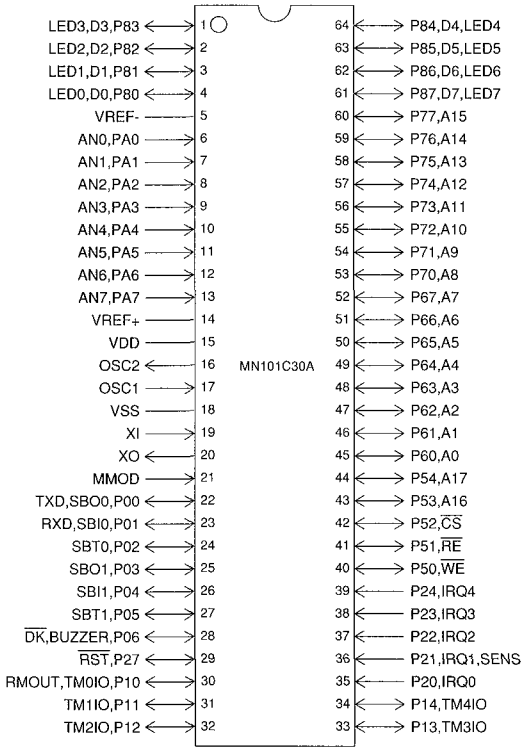
In-Circuit Emulator	PX-ICE101C / D + PX-PRB101C30-C / D	
EPROM built-in Type	**Type**	MN101CP30ABL (under development)
	ROM (× 8-Bit)	32 K
	RAM (× 8-Bit)	1 536
	Minimum Instruction Execution Time	0 10 µs (at 4 5 V to 5.5 V, 20 MHz) 0 25 µs (at 2 7 V to 5.5 V, 8 MHz)
	Package	LQFP064-P-1414, SDIP064-P-0750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

See the next page for pin assignment.

Pin Assignment



LQFP064-P-1414



SDIP064-P-0750 (under planning)