☐ MN101C309 , MN101C30A

Type	MN101C309	MN101C30A
ROM (×8-bit) External memory can be expanded	24 K	32 K
RAM (×8-bit) External memory can be expanded	1 K	1.5 K
Package	LQFP064-P-1414 *Lead-fre	
Minimum Instruction Execution Time	0.10 µs (at 4.5 V to 5.5 V, 20 MHz) 0.238 µs (at 2.7 V to 5.5 V, 8.39 MHz) 1.00 µs (at 2.0 V to 5.5 V, 2 MHz)* 125 µs (at 2.0 V to 5.5 V, 32.768 kHz)* * The lower limit for operation guarantee for EPROM built-in type 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 frequency; 1/1 of OSC oscillation clock frequency;
	                               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 frequency; 1/1 of XI oscillation clock frequency;
	                               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 frequency; 1/1 of XI oscillation clock frequency;
	                               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 frequency; 1/1 of OSC oscillation clock frequency;
	                               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 frequency; 1/1 of OSC oscillation clock frequency;
	                               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 frequency; 1/1, 1/8192 of OSC oscillation clock frequency;
	                               1/1, 1/8192 of XI oscillation clock frequency
	    Interrupt source ··············· coincidence with compare register 5; 1/8192 prescaler overflow
	
	Watchdog timer
	    Interrupt source ··············· 1/65536, 1/262144, 1/1048576 of system clock frequency (ROM option)

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■ **Serial Interface**			Serial 0 : synchronous type/simple UART (half-duplex) × 1
			Clock source ···················· 1/2, 1/4, 1/16 of system clock frequency; 1/2 of timer counter 3 frequency
			Serial 1 : synchronous type × 1
			Clock source ···················· 1/2, 1/8, 1/64 of system clock frequency; output 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 × 8-ch. (with S/H)
■ **Special Ports**			Buzzer output, remote control carrier signal output, high-current drive port

■ **Electrical Characteristics**

Supply current

Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
Operating supply current	IDD1	fosc = 20 MHz, VDD = 5 V		25	60	mA
	IDD2	fx = 32.768 kHz, VDD = 3 V		30	100	μA
Supply current at HALT	IDD3	fx = 32.768 kHz, VDD = 3 V, Ta = 25°C		4	8	μA
		fx = 32.768 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

See the next page for pin assignment and support tool.

Pin Assignment
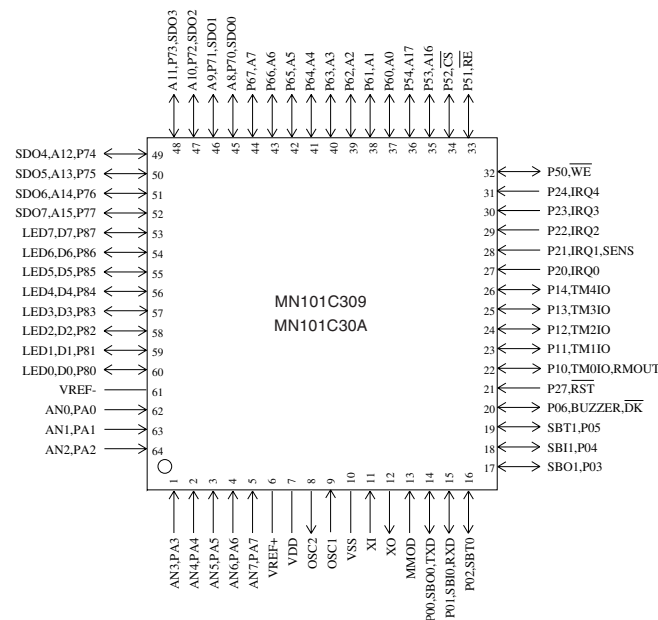
LQFP064-P-1414 *Lead-free

Support Tool

In-circuit Emulator	PX-ICE101C/D+PX-PRB101C30-LQFP064-P-1414

EPROM Built-in Type	Type	MN101CP30ABL
	ROM (× 8-bit)	32 K
	RAM (× 8-bit)	1.5 K
	Minimum instruction execution time	0.10 µs (at 4.5 V to 5.5 V, 20 MHz)
		0.238µs (at 2.7 V to 5.5 V, 8 MHz)
	Package	LQFP064-P-1414 *Lead-free

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