

# **MN101C08C**

<b>Type</b>	MN101C08C
<b>ROM (x8-bit)</b>	48 K (External memory can be expanded)
<b>RAM (x8-bit)</b>	1.5 K (External memory can be expanded)
<b>Package</b>	QFP084-P-1818E
<b>Minimum Instruction Execution Time</b>	0.10 $\mu$ s (at 4.5 V to 5.5 V, 20 MHz) 0.238 $\mu$ s (at 2.7 V to 5.5 V, 8.39 MHz) 1.00 $\mu$ s (at 2.0 V to 5.5 V, 2 MHz)* 125 $\mu$ s (at 2.0 V to 5.5 V, 32 kHz)* * The lower limit for operation guarantee for EPROM built-in type is 2.7 V.
<b>Interrupts</b>	• 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
<b>Timer Counter</b>	<p>Timer counter 0 : 8-bit <math>\times</math> 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 frequency; 1/1 of OSC oscillation clock frequency; external clock input</p> <p>Interrupt source ..... coincidence with compare register 0</p> <p>Timer counter 1 : 8-bit <math>\times</math> 1 (square-wave output, event count, synchronous output event)</p> <p>Clock source ..... 1/16, 1/64 of system clock frequency; 1/1 of XI oscillation clock frequency; 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 <math>\times</math> 1 (square-wave/8-bit PWM output, event count, synchronous output event)</p> <p>Clock source ..... 1/1, 1/4 of system clock frequency; 1/1 of XI oscillation clock frequency; external clock input</p> <p>Interrupt source ..... coincidence with compare register 2</p> <p>Timer counter 3 : 8-bit <math>\times</math> 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 frequency; 1/1 of OSC oscillation clock frequency; 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 <math>\times</math> 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 frequency; 1/1 of OSC oscillation clock frequency; 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 frequency; 1/1, 1/8192 of OSC oscillation clock frequency; 1/1, 1/8192 of XI oscillation clock frequency</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 frequency (ROM option)</p>
<b>Serial Interface</b>	<p>Serial 0 : synchronous type/simple UART (half-duplex) <math>\times</math> 1</p> <p>Clock source ..... 1/2, 1/4, 1/16 of system clock frequency; 1/2 of timer counter 3 frequency</p> <p>Serial 1 : synchronous type <math>\times</math> 1</p> <p>Clock source ..... 1/2, 1/8, 1/64 of system clock frequency; 1/2 of timer counter 3 frequency</p>

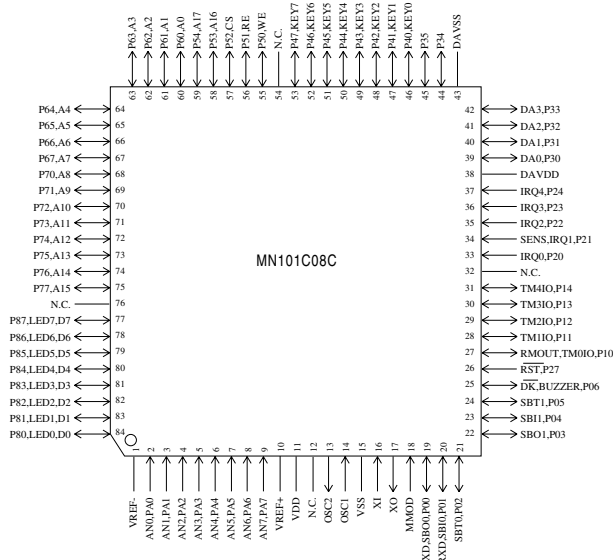
I/O Pins	I/O	55	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
	Input	13	• Common use • Specified pull-up resistor available
A/D Inputs	10-bit × 8-ch. (with S/H)		
D/A Inputs	8-bit × 4-ch.		
Special Ports	Buzzer output, remote control carrier signal output, high-current drive port		

## Electrical Characteristics

### Supply current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 20 MHz, VDD = 5 V			60	mA
	IDD2	fx = 32.768 kHz, VDD = 3 V			100	μA
Supply current at HALT	IDD3	fx = 32.768 kHz, VDD = 3 V, Ta = 25°C			8	μA
		fx = 32.768 kHz, VDD = 3 V, Ta = 85°C			20	μA
Supply current at STOP	IDD4	VDD = 5 V, Ta = 25°C			1	μA
		VDD = 5 V, Ta = 85°C			30	μA

## Pin Assignment



QFP084-P-1818E

See the next page for support tool.

## Support Tool

■ <b>In-circuit Emulator</b>	PX-ICE101C / D + PX-PRB101C08-80LF14, PX-PRB101C08-84QF18	
■ <b>EPROM Built-in Type</b>	Type	MN101CP08CBF
	ROM (× 8-bit)	48 K
	RAM (× 8-bit)	1.5 K
	Minimum instruction execution time	0.10 μs (at 4.5 V to 5.5 V, 20 MHz)
		0.238 μs (at 2.7 V to 5.5 V, 8.39 MHz)
	Package	QFP084-P-1818E