

# □ 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>	Timer counter 0 : 8-bit $\times$ 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 $\times$ 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 $\times$ 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 $\times$ 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 $\times$ 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)
<b>Serial Interface</b>	Serial 0 : synchronous type/simple UART (half-duplex) $\times$ 1 Clock source ..... 1/2, 1/4, 1/16 of system clock frequency; 1/2 of timer counter 3 frequency  Serial 1 : synchronous type $\times$ 1 Clock source ..... 1/2, 1/8, 1/64 of system clock frequency; 1/2 of timer counter 3 frequency

<b>I/O Pins</b>	<b>I/O</b>	55	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
	<b>Input</b>	13	• Common use • Specified pull-up resistor available

<b>A/D Inputs</b>	10-bit × 8-ch. (with S/H)
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<b>D/A Inputs</b>	8-bit × 4-ch.
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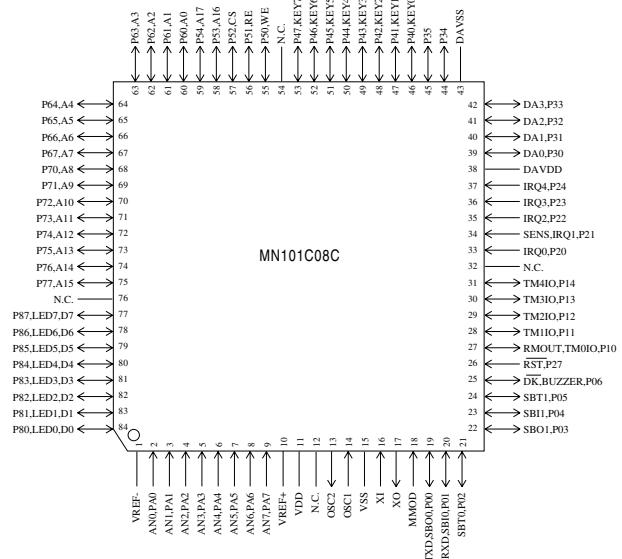
<b>Special Ports</b>	Buzzer output, remote control carrier signal output, high-current drive port
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### Electrical Characteristics

#### Supply current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
<b>Operating supply current</b>	IDD1	fosc = 20 MHz, VDD = 5 V			60	mA
	IDD2	fx = 32.768 kHz, VDD = 3 V			100	µA
<b>Supply current at HALT</b>	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
<b>Supply current at STOP</b>	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 (x 8-bit)	48 K
	RAM (x 8-bit)	1.5 K
	Minimum instruction execution time	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)
	Package	QFP084-P-1818E