❑ MN101C08C

Type	MN101C08C
ROM (×8-bit)	48 K (External memory can be expanded)
RAM (×8-bit)	1.5 K (External memory can be expanded)
Package	QFP084-P-1818E *Lead-free
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)
Serial Interface	Serial 0 : synchronous type/simple UART (half-duplex) × 1 Clock source ····· 1/2, 1/4, 1/16 of system clock frequency; output of timer counter 3 Serial 1 : synchronous type × 1 Clock source ····· 1/2, 1/8, 1/64 of system clock frequency; output of timer counter 3

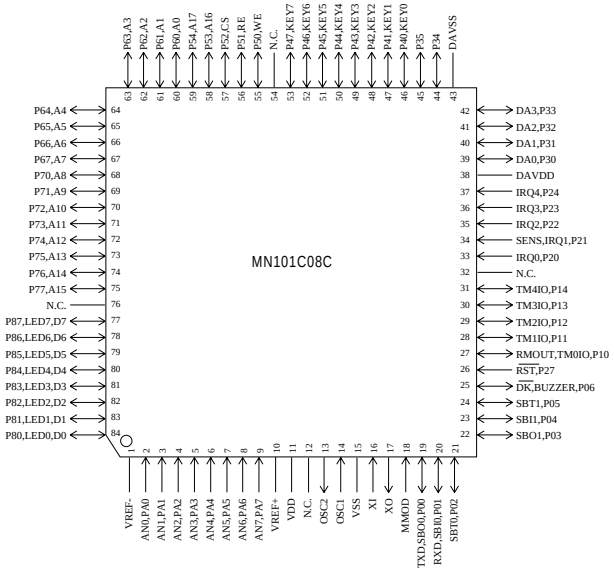
I/O Pins	**I/O**	55	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
	Input	13	• Common use • Specified pull-up resistor available
A/D Inputs	10-bit × 8-ch. (with S/H)		
D/A Outputs	8-bit × 4-ch.		
Special Ports	Buzzer output, remote control carrier signal output, 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		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			20	µA
Supply current at STOP	IDD4	VDD = 5 V, Ta = 25°C			1	µA
		VDD = 5 V, Ta = –40°C to +85°C			30	µA

Pin Assignment



QFP084-P-1818E *Lead-free

See the next page for support tool.

Support Tool

In-circuit Emulator	PX-ICE101C / D + PX-PRB101C08-QFP084-P-1818E	
EPROM Built-in Type	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 *Lead-free

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(4) The products described in this material are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
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- Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
- Any applications other than the standard applications intended.

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Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.

(7) When using products for which damp-proof packing is required, observe the conditions (including shelf life and amount of time let standing of unsealed items) agreed upon when specification sheets are individually exchanged.