

MN101C62D , MN101C62F

Type	MN101C62D [ES (Engineering Sample) available]	MN101C62F (under development)
ROM (×8-bit)	64 K	96 K
RAM (×8-bit)	2 K	4 K
Package	LQFP080-P-1414A *Lead-free	
Minimum Instruction Execution Time	Standard: 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)*	Double speed: 0.125 μs (at 4.5 V to 5.5 V, 8 MHz) 0.25 μs (at 3.0 V to 5.5 V, 4 MHz) 62.5 μs (at 2.0 V to 5.5 V, 32 kHz)*
Interrupts	* The lower limit for operation guarantee for flash memory built-in type is 2.5 V. • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 6 • Time base • Timer 7 (2 systems) • Timer 8 (2 systems) • Automatic transfer completion • Serial 0 (2 systems) • Serial 1 (2 systems) • Serial 2 • A/D conversion finish • Key interrupt	
Timer Counter	Timer counter 0 : 8-bit × 1 (square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI 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, serial baud rate timer) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation 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 output, event count, synchronous output event, simple pulse width measurement, generation of real time, serial baud rate timer) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation 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 baud rate timer) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 3 Timer counter 2, 3 can be cascade-connected. Timer counter 4 : 8-bit × 1 (square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 0 Timer counter 6 : 8-bit freerun timer Clock source 1/1 of system clock frequency; 1/1, 1/128, 1/8192 of OSC oscillation clock frequency; 1/1, 1/4096, 1/8192 of XI oscillation clock frequency Interrupt source coincidence with compare register 6	

Timer Counter (Continue)

Timer counter 7 : 16-bit × 1
 (square-wave output, 16-bit PWM output (cycle / duty continuous variable), event count, synchronous output event, pulse width measurement, input capture, generation of real time)
 Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency
 Interrupt source coincidence with compare register 7 (2 lines)

Watchdog timer
 Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency

Timer counter 8 : 16-bit × 1
 (square-wave output, 16-bit PWM output (cycle / duty continuous variable), event count, synchronous output event, pulse width measurement, input capture, generation of real time)
 Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency
 Interrupt source coincidence with compare register 7 (2 lines)

Watchdog timer
 Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency

Serial Interface

Serial 0 : synchronous type/UART (full-duplex) × 1
 Clock source 1/2, 1/4 of system clock frequency; pulse output of timer counter 1 or 2;
 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency

Serial 1 : synchronous type/UART (full-duplex) × 1
 Clock source 1/2, 1/4 of system clock frequency; pulse output of timer counter 2 or 3;
 1/2, 1/8 of timer counter 2 output;
 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency

Serial 2 : synchronous type / single-master I²C
 Clock source 1/2, 1/4 of system clock frequency; pulse output of timer counter 2 or 3;
 1/2, 1/4, 1/8, 1/32 of OSC oscillation clock frequency

I/O Pins	I/O	68	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
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A/D Inputs	10-bit × 8-ch. (with S/H)
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Special Ports	Buzzer output, remote control carrier signal output, high-current drive port
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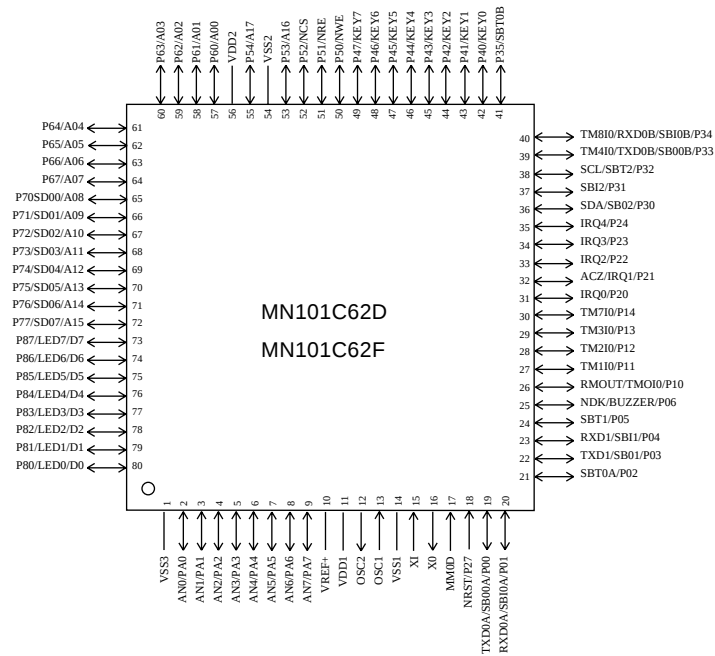
Electrical Characteristics

Supply current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 20 MHz, VDD = 5 V		18	30	mA
	IDD2	fx = 32 kHz, VDD = 3 V		30	60	μA
Supply current at HALT	IDD3	fx = 32 kHz, VDD = 3 V, Ta = 25°C		6	8	μA
	IDD4	fx = 32 kHz, VDD = 3 V, Ta = 85°C			30	μA
Supply current at STOP	IDD5	VDD = 5 V, Ta = 25°C			2	μA
	IDD6	VDD = 5 V, Ta = 85°C			50	μA

See the next page for pin assignment and support tool.

Pin Assignment



LQFP080-P-1414A *Lead-free

Support Tool

In-circuit Emulator

PX-ICE101C / D + PX-PRB101C62-LQFP080-P-1414A-M (under development)

Flash Memory Built-in Type

Type MN101CF62G (under development)

ROM (× 8-bit)	128 K
RAM (× 8-bit)	10 K
Minimum instruction execution time	0.1 μs (at 4.5 V to 5.5 V, 20 MHz)
	0.25 μs (at 3.0V to 5.5 V, 8 MHz)
	62.5 μs (at 3.0 V to 5.5 V, 32 kHz)

Package LQFP080-P-1414A *Lead-free

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