

# □ MN101C94A

<b>Type</b>	MN101C94A (ES (Engineering Sample) available)
<b>ROM (×8-bit)</b>	32 K
<b>RAM (×8-bit)</b>	1 K
<b>Package</b>	QFP044-P-1010F *Lead-free
<b>Minimum Instruction Execution Time</b>	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) 0.477 μs (at 2.0 V to 5.5 V, 4.19 MHz)* * The lower limit for operation guarantee for flash memory built-in type is 2.5 V.
<b>Interrupts</b>	• RESET • Watchdog • External 0 • External 1 • External 2 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 5 • Time base • Serial 0 • A/D conversion finish
<b>Timer Counter</b>	<p>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</p> <p>Timer counter 1 : 8-bit × 1 (square-wave output, event count, synchronous output event) Clock source ..... 1/16, 1/64 of system clock frequency; external clock input Interrupt source ..... coincidence with compare register 1</p> <p>Timer counter 0, 1 can be cascade-connected.</p> <p>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; external clock input Interrupt source ..... coincidence with compare register 2</p> <p>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</p> <p>Timer counter 2, 3 can be cascade-connected.</p> <p>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</p> <p>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 Interrupt source ..... coincidence with compare register 5; 1/8192 prescaler overflow</p> <p>Watchdog timer Interrupt source ..... 1/1048576 of system clock frequency</p>

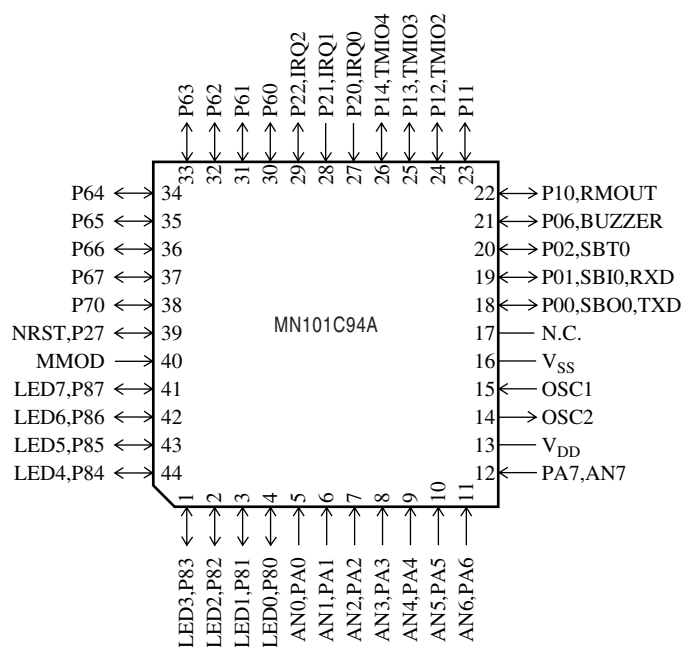
<b>Serial Interface</b>		Serial 0 : synchronous type/simple UART (half-duplex) × 1 Clock source ..... 1/2, 1/4, 1/16 of system clock frequency; output of timer counter 3	
<b>I/O Pins</b>	<b>I/O</b>	26	• Common use: 17 • Specified pull-up resistor available • Input/output selectable (bit unit): 26
	<b>Input</b>	11	• Common use • Specified pull-up resistor available
<b>A/D Inputs</b>		10-bit × 8-ch. (with S/H)	
<b>Special Ports</b>		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		15	40	mA
	IDD2	fosc = 8.39 MHz, VDD = 5 V		6	18	mA
Supply current at HALT	IDD3	ffosc = 8.39 MHz, VDD = 5 V, Ta = 25°C		1.2	3	mA
Supply current at STOP	IDD4	VDD = 5 V, Ta = 25°C			2	μA
	IDD5	VDD = 5 V, Ta = -40°C to +85°C			20(50)	μA

( ) : Flash memory built-in type

**Pin Assignment**



QFP044-P-1010F \*Lead-free

## Support Tool

<b>In-circuit Emulator</b>	PX-ICE101C/D+PX-PRB101C94-QFP044-P-1010	
<b>Flash memory Built-in Type</b>	Type	MN101CF94D (ES (Engineering Sample) available)
	ROM (× 8-bit)	64 K
	RAM (× 8-bit)	2 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)
		0.477 μs (at 2.5 V to 5.5 V, 4.19 MHz)
Package	QFP044-P-1010F *Lead-free	

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