

□ MN101C74D , MN101C74F, MN101C74G

Type	MN101C74D(underdevelopment)	MN101C74F (under planning)	MN101C74G (under development)
ROM (×8-bit)	64 K	96 K	128 K
RAM (×8-bit)	2 K	6 K	6 K
Package	QFP100-P-1818B *Lead-free, LQFP100-P-1414 *Lead-free (under planning), MLGA100-L-1010 *Lead-free (under planning)		
Minimum Instruction Execution Time	0.1 μs (at 3.0 V to 3.6 V, 10 MHz) 0.235 μs (at 1.8 V to 3.6 V, 4.25 MHz) 62.5 μs (at 1.8 V to 3.6 V, 32 kHz) * The lower limit for operation guarantee for flash memory built-in type is 2.2 V.		
Interrupts	<ul style="list-style-type: none"> • RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • External 5 • External 6 (key interrupt dedicated) • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 6 • Time base • Timer 7 (2 systems) • Timer 8 (2 systems) • Serial 0 (2 systems) • Serial 1 (2 systems) • Serial 3 • A/D conversion finish • Automatic transfer finish 		
Timer Counter	<p>Timer counter 0 : 8-bit × 1 (square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement, added pluse (2-bit) system PWM output) (square-wave/PWM output to large current terminal PC3 possible) 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</p> <p>Timer counter 1 : 8-bit × 1 (square-wave output, event count, synchronous output event) 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; timer counter 8 output 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 output, added pluse (2-bit) system PWM output, PWM output, serial transfer clock output, event count, synchronous output event, simple pulse width measurement) (square-wave/PWM output to large current terminal PC5 possible) 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</p> <p>Timer counter 3 : 8-bit × 1 (square-wave output, event count, generation of remote control carrier, serial transfer clock) 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</p> <p>Timer counter 2, 3 can be cascade-connected.</p> <p>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, 1/128, 1/8192 of XI oscillation clock frequency Interrupt source coincidence with compare register 6</p> <p>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, real time output control, high performance IGBT output (Cycle/Duty can be changed constantly)) (square-wave/PWM output to large current terminal PC4 possible) 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), input capture register</p>		

Timer Counter (Continue)	<p>Timer counter 8: 16 bit × 1 (square-wave/16-bit PWM output [duty continuous variable], event count, pulse width measurement, input capture) (square-wave/PWM output to large current terminal PC6 possible)</p> <p>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</p> <p>Interrupt source coincidence with compare register 8 (2 lines), input capture register</p> <p>Timer counters 7, 8 can be cascade-connected. (square-wave output, PWM is possible as a 32-bit timer.)</p> <p>Time base timer (one-minute count setting)</p> <p>Clock source 1/1 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency Interrupt source 1/128, 1/256, 1/512, 1/1024, 1/4096, 1/8192, 1/16384, 1/32768, of clock source frequency</p> <p>Watchdog timer</p> <p>Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency</p>				
DMA Controller (Automatic Data Transfer)	<p>Max. Transfer cycles 255</p> <p>Starting factor external request, various types of interrupt, software</p> <p>Transfer mode 1-byte transfer, word transfer, burst transfer</p>				
Serial Interface	<p>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, external clock</p> <p>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, 1/4, 1/16, 1/64 of OSC oscillation clock frequency, external clock</p> <p>Serial 3 : synchronous type/single-master I²C × 1 Clock source 1/2, 1/4 of system clock frequency; pulse output of timer counter 2 or 3; 1/2, 1/4, 1/16, 1/32 of OSC oscillation clock frequency, external clock</p> <p>Serial 4 : I²C slave × 1 Applicable for I²C high-speed transfer mode, 7-bit/10-bit address setting, general call</p>				
I/O Pins	<table border="1"> <thead> <tr> <th data-bbox="320 1373 491 1404">I/O</th> <th data-bbox="507 1373 1474 1404">87</th> </tr> </thead> <tbody> <tr> <td data-bbox="320 1373 491 1404"></td> <td data-bbox="507 1373 1474 1404">• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)</td> </tr> </tbody> </table>	I/O	87		• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
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	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)				
A/D Inputs	10-bit × 16-ch. (with S/H)				
LCD	<p>47 segments × 4 commons (static, 1/2, 1/3, or 1/4 duty)</p> <p>LCD power supply separated from VDD (usable if VDD ≤ VLCD ≤ 3.6 V)</p> <p>LCD power step-up circuit contained (3/2, 2 and 3 times)</p> <p>LCD power shunt resistance contained LCD reference voltage is contained.</p>				
Special Ports	Buzzer output, remote control carrier signal output, high-current drive port				
ROM Correction	Correcting address designation: up to 7 addresses possible				

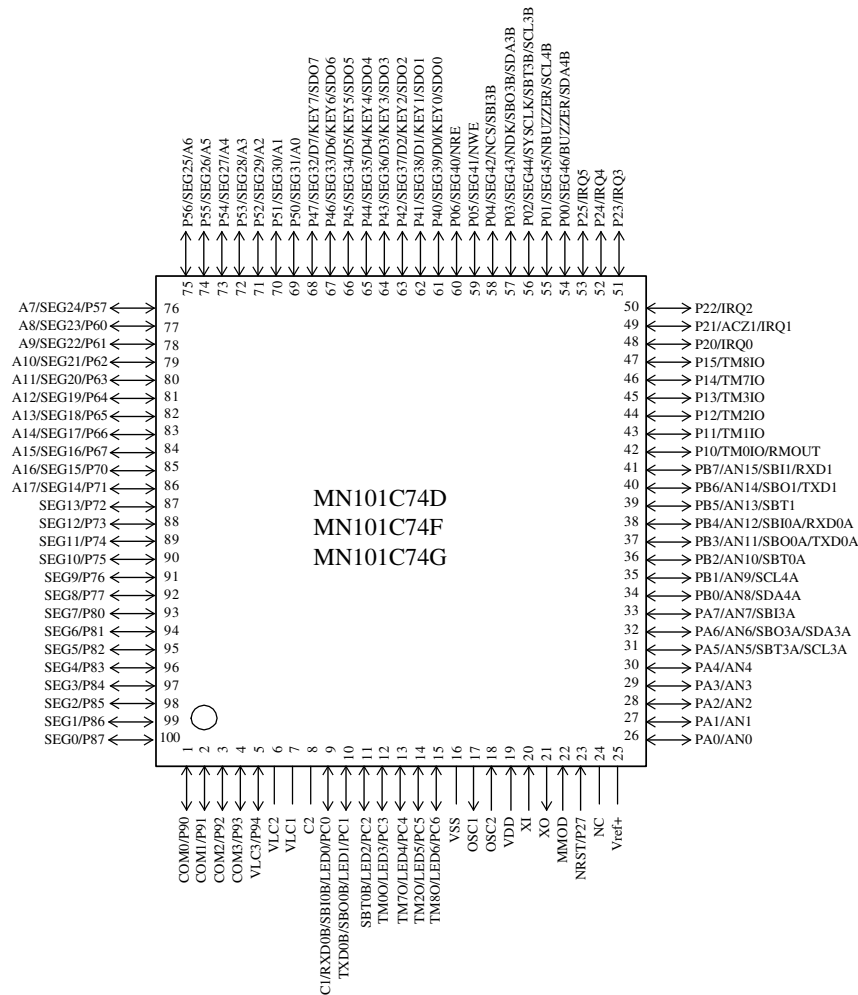
See the next page for pin assignment and support tool.

Electrical Characteristics

Supply current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 4 MHz, VDD = 3 V		1	1.8	mA
	IDD2	fx = 32 kHz, VDD = 3 V		4	15	μA
Supply current at HALT	IDD3	fx = 32 kHz, VDD = 3 V, Ta = 25°C		2	5	μA
	IDD4	fx = 32 kHz, VDD = 3 V, Ta = -40°C to +85°C			10	μA
Supply current at STOP	IDD5	VDD = 3 V, Ta = 25°C			2	μA
	IDD6	VDD = 3 V, Ta = -40°C to +85°C			8	μA

Pin Assignment



QFP100-P-1818B *Lead-free

LQFP100-P-1414 *Lead-free

MLGA100-L-1010 *Lead-free

Support Tool

■ In-circuit Emulator	PX-ICE101C / D + PX-PRB101C74-QFP100-P-1818B-M (under development)	
	PX-ICE101C / D + PX-PRB101C74-LQFP100-P-1414-M (under planning)	
■ Flash Memory Built-in Type	Type	MN101CF74G (under development)
	ROM (× 8-bit)	128 K
	RAM (× 8-bit)	6 K
	Minimum instruction execution time	0.1 μs (at 3.0 V to 3.6 V, 10 MHz)
		0.235 μs (at 2.2 V to 3.6 V, 4.25 MHz)
		62.5 μs (at 2.2 V to 3.6 V, 32 kHz)
	Package	QFP100-P-1818B ^{*Lead-free} , LQFP100-P-1414 ^{*Lead-free} (under planning)
MLGA100-L-1010 ^{*Lead-free} (under planning)		

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