

MN101C73A , MN101C73D

Type	MN101C73A (under development)	MN101C73D (under planning)
ROM (×8-bit)	32 K	64 K
RAM (×8-bit)	1.5 K	2 K
Package	TQFP064-P-1010C *Lead-free, LQFP064-P-1414 *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	• 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	
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, added pluse (2-bit) system PWM output) (square-wave/PWM output to large current terminal P50 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	
	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	
	Timer counter 0, 1 can be cascade-connected.	
	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 P51 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	
	Timer counter 3 : 8-bit × 1 (square-wave output, event count, 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	
	Timer counter 2, 3 can be cascade-connected.	
	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	

■ 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, real time output control, high performance IGBT output (Cycle/Duty can be changed constantly)) (square-wave/PWM output to large current terminal P52 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 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 P53 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 8 (2 lines), input capture register Timer counters 7, 8 can be cascade-connected. (square-wave output, PWM is possible as a 32-bit timer.) Time base timer (one-minute count setting) 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 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, external clock Serial 1 : 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 Serial 3 : synchronous type/single-master I ² C × 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	
■ I/O Pins	I/O	55	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
■ A/D Inputs		10-bit × 12-ch. (with S/H)	
■ LCD		32 segments × 4 commons (static, 1/2, 1/3, or 1/4 duty) Usable if VLCD ≤ VDD LCD power shunt resistance contained	
■ Special Ports		Buzzer output, remote control carrier signal output, high-current drive port	
■ ROM Correction		Correcting address designation : up to 3 addresses possible	

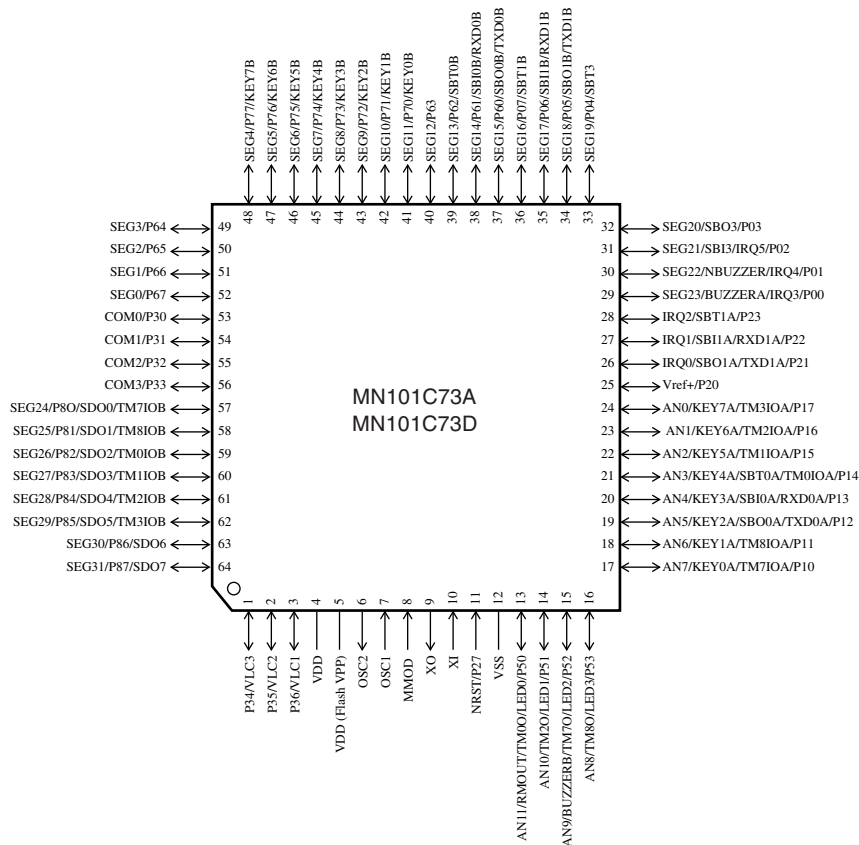
See the next page for pin assignment and support tool.

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



TQFP064-P-1010C *Lead-free

LQFP064-P-1414 *Lead-free (under planning)

Support Tool

■ In-circuit Emulator	PX-ICE101C / D + PX-PRB101C73-TQFP064-P-1010C-M (under development)	
	PX-ICE101C / D + PX-PRB101C73-LQFP064-P-1414-M (under development)	
■ Flash Memory Built-in Type	Type	MN101CF73A (under development), MN101CF73D (under planning)
	ROM (× 8-bit)	32 K, 64K
	RAM (× 8-bit)	2.0 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	TQFP064-P-1010C *Lead-free, LQFP064-P-1414 *Lead-free (under planning)

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