❑ MN101C58 Series

Type	MN101C589	MN101C58A	MN101CF58D	MN101CP58A
Internal ROM type	Mask ROM		FLASH	EPROM
ROM (byte)	24K	32K	64K	32K
RAM (byte)	1.5K		2K	1.5K
Package (Lead-free)	LQFP064-P-1414			
Minimum Instruction Execution Time	0.1 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 62.5 µs (at 2.0 V to 5.5 V, 32 kHz)*1,*2 *1: The lower limit for operation guarantee for flash memory built-in type is 4.5 V. *2: The lower limit for operation guarantee for EPROM built-in type is 2.3 V.			

■ Interrupts

RESET. Watchdog. External 0 to 2. External 4 (key interrupt dedicated). Timer 0 to 3. Timer 6. Timer 7 (2 systems). Timer 8 (2 systems). Time base. Serial 0 (2 systems). A/D conversion finish

■ Timer Counter

8-bit timer × 5

Timer 0 .....Square-wave/8-bit PWM output. Event count. Remote control carrier output. Simple pulse width measurement. Square-wave/PWM output to large current terminal P50 possible

Timer 1 .....Square-wave output. Event count. Synchronous output event

Timer 2 .....Square-wave output. Added pulse (2-bit) type PWM output. Event count. Synchronous output event. Simple pulse width measurement. Square-wave/PWM output to large current terminal P52 possible

Timer 3 .....Square-wave output. Event count. Remote control carrier output. Serial 0 baud rate timer

Timer 6 .....8-bit freerun timer

Timer 0, 1 can be cascade-connected

Timer 2, 3 can be cascade-connected

16-bit timer × 2

Timer 7 .....Square-wave output. Square-wave/16-bit PWM output (cycle/duty continuous variable). Event count. Synchronous output event. Pulse width measurement. Input capture. Square-wave/PWM output to large current terminal P51 possible

Timer 8 .....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

Timer 7, 8 can be cascade-connected: Square-wave output, PWM, input capture, pulse width measurement is possible as a 32-bit timer

Time base timer: One-minute count setting

Watchdog timer × 1

■ Serial interface

Synchronous type/UART (full-duplex) × 1: Serial 0

■ I/O Pins

I/O 46 : Common use. Specified pull-up resistor available. Input/output selectable (bit unit)

Input 3 : Common use. Specified pull-up resistor available

■ A/D converter

10-bit × 8 channels (with S/H)

■ Display control function

LCD: 24 segments × 4 commons (Static, 1/2, 1/3, or 1/4 duty)

LCD power supply separated from VDD (usable if VDD ≤ VLCD ≤ 5.5 V)

LCD power step-up circuit contained (3/2 times, 2 times and 3 times)

LCD power shunt resistance contained

■ Special Ports

Buzzer output. Remote control carrier output. High-current drive port

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■ Electrical Charactreistics (Supply current)

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 20 MHz. VDD = 5 V		25	60	mA
	IDD2	fosc = 8 MHz. VDD = 5 V		10	25	mA
	IDD3	fx = 32 kHz. VDD = 3 V		30	100	µA
Supply current at HALT	IDD4	fx = 32 kHz. VDD = 3 V. Ta = 25 °C		4	8	µA
	IDD5	fx = 32 kHz. VDD = 3 V. Ta = -40 °C to +85 °C			30	µA
Supply current at STOP	IDD6	VDD = 5 V. Ta = 25 °C			2	µA
	IDD7	VDD = 5 V. Ta = -40 °C to +85 °C			50	µA

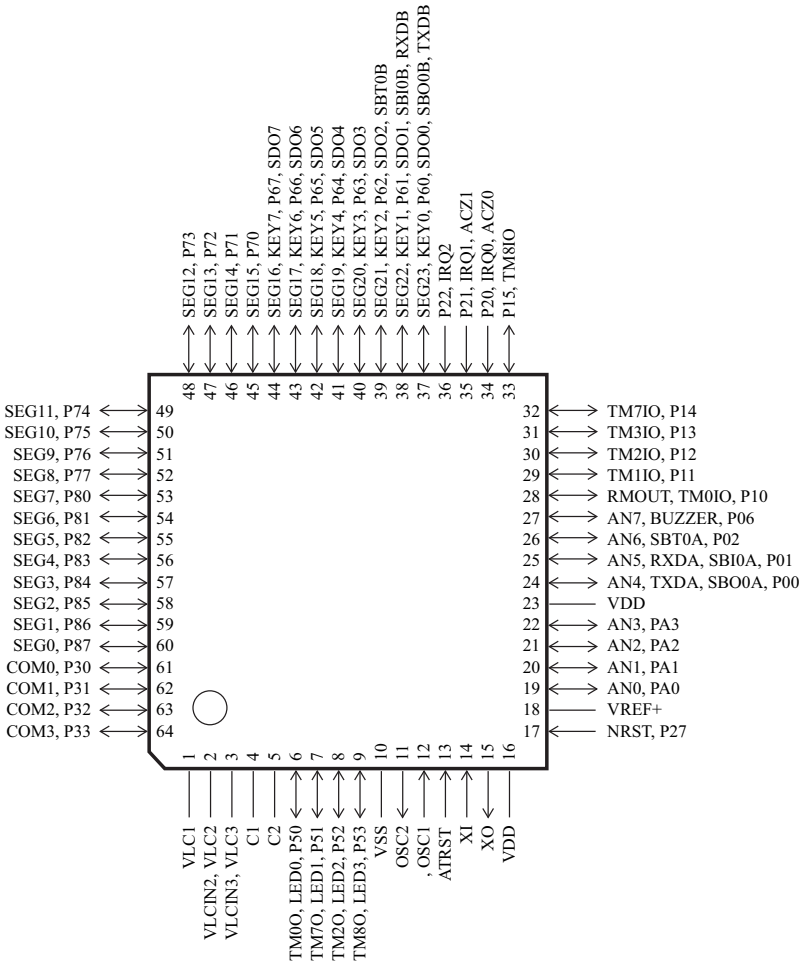
■ Development tools

In-circuit Emulator

PX-ICE101C/D + PX-PRB101C58-LQFP064-P-1414-M

■ Pin Assignment

LQFP064-P-1414



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