

# **MN101C49 Series**

Type	MN101C49G	MN101C49H	MN101C49K	MN101CF49K	MN101CP49K
Internal ROM type	Mask ROM			FLASH	EPROM
ROM (byte)	128K	160K	224K		
RAM (byte)	4K	6K	10K		
Package (Lead-free)	LQFP100-P-1414, QFP100-P-1818B				
Minimum Instruction Execution Time	[Standard]				
	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)				
	125 μs (at 2.0 V to 5.5 V, 32 kHz)*				
	[Double speed]				
	0.12 μs (at 4.5 V to 5.5 V, 8.39 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)*				
	* The lower limit for operation guarantee for EPROM built-in type is 2.7 V.				
	* The lower limit for operation guarantee for flash memory built-in type is 4.5 V.				

## **Interrupts**

RESET, Watchdog, External 0 to 5, Timer 0 to 4, Timer 6, Timer 7 (2 systems), Time base, Serial 0 to 3, Automatic transfer finish, A/D conversion finish, Key interrupts (8 lines)

## **Timer Counter**

8-bit timer × 6

Timer 0 .....square-wave/8-bit PWM output, event count, generation of remote control carrier, pulse width measurement

Timer 1 .....square-wave output, event count, synchronous output event

Timer 2 .....square-wave/8-bit PWM output, event count, synchronous output event, pulse width measurement

Timer 3 .....square-wave output, event count, generation of remote control carrier

Timer 4 .....square-wave/8-bit PWM output, event count, pulse width measurement, serial 1 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 × 1

Timer 7 .....square-wave/16-bit PWM output, cycle / duty continuous variable, event count, synchronous output event, pulse width measurement, input capture

Time base timer : one-minute count setting

Watchdog timer

## **Serial interface**

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

Serial 1 : synchronous type/simple UART (half-duplex) × 1

Serial 2 : synchronous type × 1

Serial 3 : synchronous type/single-master I<sup>2</sup>C × 1

## **DMA controller**

Max. Transfer cycles : 255

Starting factor : external request, various types of interrupt, software

Transfer mode : 1-byte transfer, word transfer, burst transfer

## **I/O Pins**

I/O            73 : Common use , Specified pull-up resistor available, Input/output selectable (bit unit)  
                   (72) : Flash memory built-in type.

Input           15 : Common use , Specified pull-up resistor available  
                   (14) : (   ) : Flash memory built-in type.

## **A/D converter**

10-bit × 8-ch. (with S/H)

## **D/A converter**

8-bit × 4-ch.

## **Special Ports**

Buzzer output, remote control carrier signal output, high-current drive port

## ROM Correction

Correcting address designation : up to 3 addresses possible

## Electrical Characteristics (Supply current)

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 20 MHz , VDD = 5 V		30	70	mA
	IDD2	fosc = 8.39 MHz , VDD = 5 V		15	30	mA
	IDD3	fx = 32.768 kHz , VDD = 3 V		40	120	μA
Supply current at HALT	IDD4	fx = 32 kHz , VDD = 3 V (5 V), Ta = 25°C		5(13)	11(30)	μA
	IDD5	fx = 32.768 kHz , VDD = 3 V (5 V) , Ta = 85°C			30(90)	μA
Supply current at STOP	IDD6	VDD = 5 V , Ta = 25°C			3	μA
	IDD7	VDD = 5 V , Ta = 85°C			60	μA

( ) : Flash memory built-in type

## Development tools

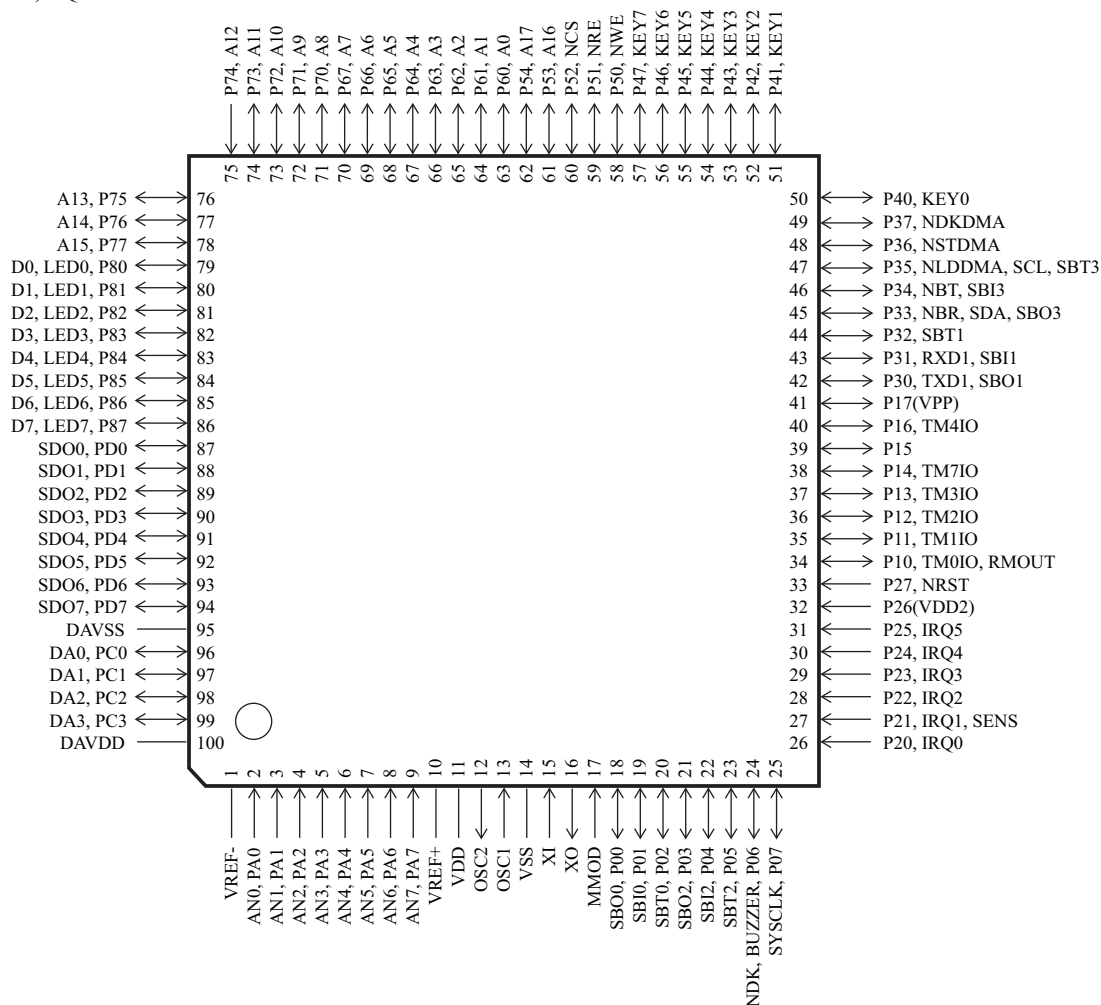
In-circuit Emulator

PX-ICE101C/D + PX-PRB101C49-QFP100-P-1818B

PX-ICE101C/D + PX-PRB101C49-LQFP100-P-1414

## Pin Assignment

QFP100-P-1818B, LQFP100-P-1414



Note ( ) : Flash memory built-in type.

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