# ❑ 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]<br>0.10 µs (at 4.5 V to 5.5 V, 20 MHz)<br>0.238 µs (at 2.7 V to 5.5 V, 8.39 MHz)<br>125 µs (at 2.0 V to 5.5 V, 32 kHz)*<br>[Double speed]<br>0.12 µs (at 4.5 V to 5.5 V, 8.39 MHz)<br>0.25 µs (at 3.0 V to 5.5 V, 4 MHz)<br>62.5 µs (at 2.0 V to 5.5 V, 32 kHz)*<br>*: The lower limit for operation guarantee for EPROM built-in type is 2.3 V.<br>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. Remote control carrier output. 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. Remote control carrier output
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 × 1

## ■ Serial interface

Synchronous type/UART (full-duplex) × 1: Serial 0
Synchronous type/Simple UART (half-duplex) × 1: Serial 1
Synchronous type × 1: Serial 2
Synchronous type/Single-master $I^2C$ × 1: Serial 3

## ■ DMA controller

Maximum 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 channels (with S/H)

## ■ D/A converter

8-bit × 4 channels

## ■ Special Ports

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

## ■ ROM Correction

Correcting address designation: Up to 3 addresses possible

## ■ Electrical Charactreistics (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 |

Note) ( ): Flash memory built-in type

## ■ Development tools

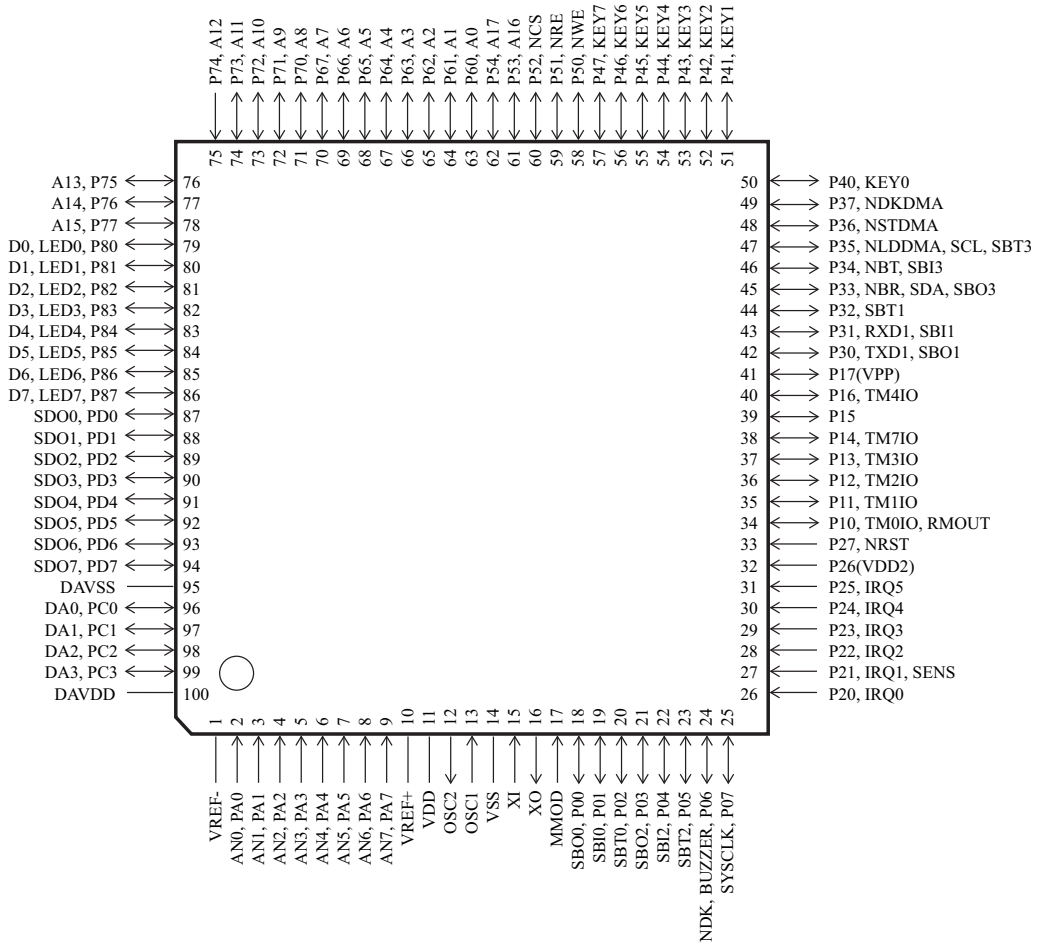
In-circuit Emulator

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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