

# □ MN101E51 Series

Type	MN101EF51A
Internal ROM type	FLASH
ROM (byte)	32K
RAM (byte)	1K
Package (Lead-free)	QFN044-P-0606A (Under development), QFP044-P-1010F (Under development), TQFP048-P-0707B (Under development)
Minimum Instruction Execution Time	50 ns (2.7 V to 5.5 V) 125 ns (1.8 V to 5.5 V) *: at internal 2, 3, 4, 5, 6, 8, 10 times oscillation used

## ■ Interrupts

5 external interrupts. 19 internal interrupts

RESET. NMI. External 0 to 4. Timer 0 to 2. Timer 6. Timer 7 (2 systems). Timer 9 (3 systems). Time base. LIN. Serial 0 (2 systems). Serial 1 (2 systems). Serial 4 (2 systems). A/D conversion. Low voltage detection

## ■ Timer Counter

8-bit timer × 5

Timer 0 ..... Timer pulse output. Event count. Added pulse (2-bit) type PWM output. Remote control carrier output. Simple pulse width measurement. Real time output control

Timer 1 ..... Timer pulse output. Event count. 16-bit cascade connected (timer 0, 1). Timer synchronous output

Timer 2 ..... Timer pulse output. Event count. Added pulse (2-bit) type PWM output. Simple pulse width measurement. 24-bit cascade connected (timer 0, 1, 2). Timer synchronous output. Real time output control

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

Timer A ..... Event count. Baud rate timer. Clock output for peripheral function

16-bit timer × 2

Timer 7 ..... Timer pulse output. Event count. High accuracy PWM. High performance IGBT output (cycle/duty continuous variable). Timer synchronous output. Input capture (both edge available). Real time output control. Double buffer compare register

Timer 9 ..... Timer pulse output. Event count. 3-phase PWM output. Triangular waveform output. Jigsaw waveform output. Double buffer compare register

Watchdog timer × 2

## ■ Serial interface

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

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

Synchronous type/Multi-master I<sup>2</sup>C × 1: Serial 4

## ■ I/O Pins

I/O 36 : Common use. Specified pull-up/pull-down resistor available. Input/output selectable (bit unit)

## ■ A/D converter

10-bit × 12 channels

## ■ Special Ports

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

## ■ Reset

Low voltage detection. Automatic reset. Reset factor detection

## ■ Internal oscillation

High speed: 20 MHz. Low speed: 30 kHz

## ■ Development tools

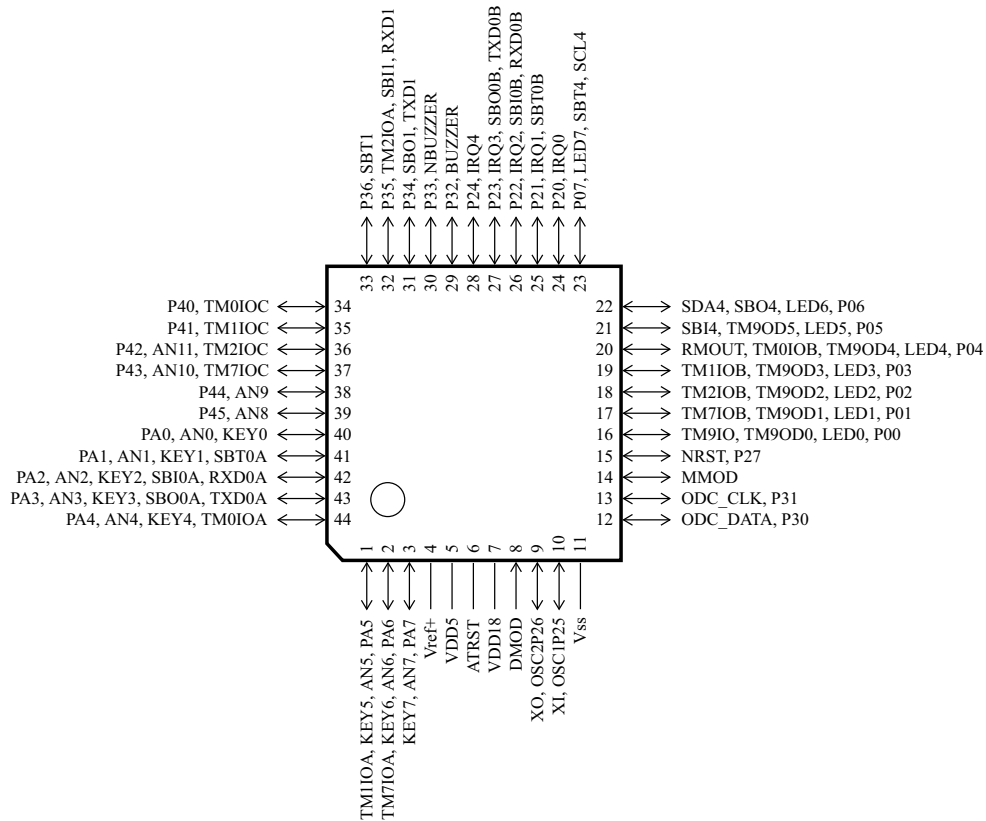
In-circuit Emulator

PX-ICE101E + PX-PRBV101E51-QFP044-P-1010F

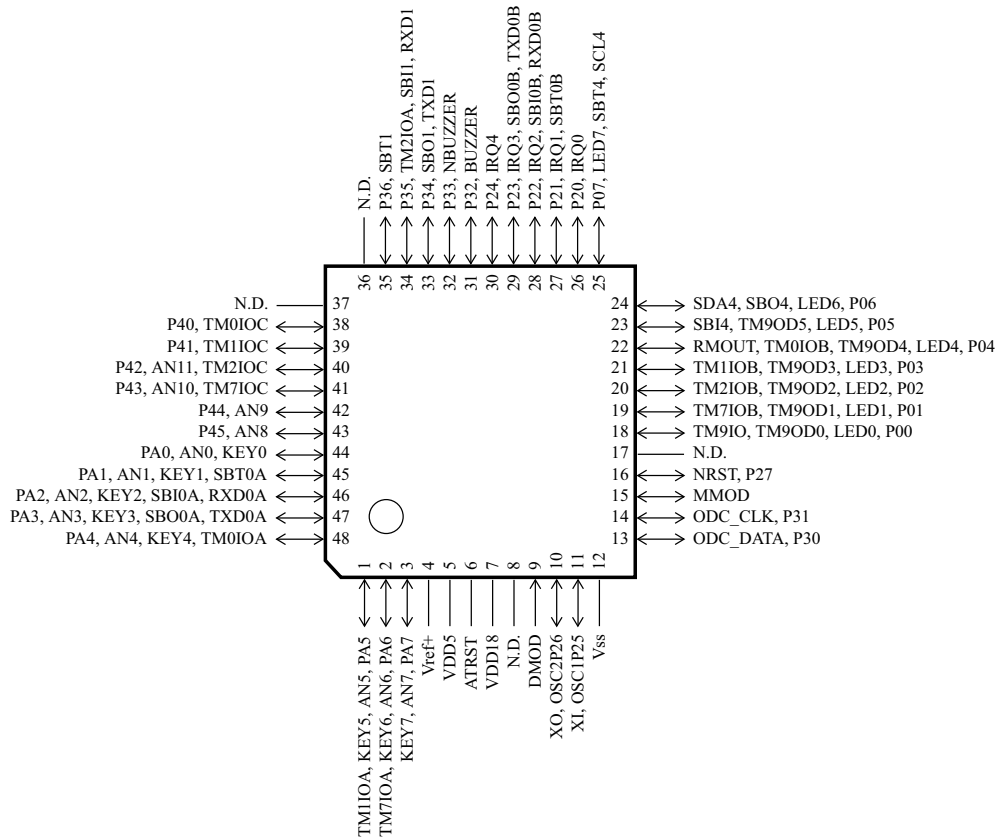
PX-ICE101E + PX-PRBV101E51-TQFP048-P-0707B

■ Pin Assignment

QFP044-P-1010F, QFN044-P-0606A



TQFP048-P-0707B



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