

## **Notification about the transfer of the semiconductor business**

The semiconductor business of Panasonic Corporation was transferred on September 1, 2020 to Nuvoton Technology Corporation (hereinafter referred to as "Nuvoton"). Accordingly, Panasonic Semiconductor Solutions Co., Ltd. became under the umbrella of the Nuvoton Group, with the new name of Nuvoton Technology Corporation Japan (hereinafter referred to as "NTCJ").

In accordance with this transfer, semiconductor products will be handled as NTCJ-made products after September 1, 2020. However, such products will be continuously sold through Panasonic Corporation.

Publisher of this Document is NTCJ.

If you would find description "Panasonic" or "Panasonic semiconductor solutions", please replace it with NTCJ.

※ Except below description page

"Request for your special attention and precautions in using the technical information and semiconductors described in this book"

**Nuvoton Technology Corporation Japan**

# □ MN101E16 Series

Type	MN101E16K	MN101E16Y	MN101EF16K	MN101EF16Z
Internal ROM type	Mask ROM		FLASH	
ROM (byte)	256K	384K	260K	512K
RAM (byte)	12K	20K	16K	30K
Package (Lead-free)	LQFP100-P-1414, QFP100-P-1818B	QFP100-P-1818B	LQFP100-P-1414, QFP100-P-1818B	QFP100-P-1818B
Minimum Instruction Execution Time	0.0588 $\mu$ s (at 2.7 V to 3.6 V, 17 MHz, at internal 2, 4, 8 times oscillation)) 0.1 $\mu$ s (at 2.7 V to 3.6 V, 20 MHz) 30.6 $\mu$ s (at 2.7 V to 3.6 V, 32.768 kHz)			

## ■ Interrupts

RESET. Watchdog. External 0 to 5. Timer 0 to 3. Timer 6. Timer 7 (2 systems). Timer A to E. Time base. Serial 0 (2 systems). Serial 1 (2 systems). Serial 2. Serial 3 (2 systems). Serial 4 (2 systems). Automatic transfer finish (2 systems). A/D conversion finish. Key interrupt

## ■ Timer Counter

8-bit timer  $\times$  10

Timer 0 ..... Square-wave/8-bit PWM output. Event count. Pulse width measurement. Real time output control

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. Real time output control. Serial baud rate timer

Timer 3 ..... Square-wave output. Event count. Serial baud rate timer

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

Timer A, B, C, D, E

Timer 0, 1 can be cascade-connected

Timer 0, 1, 2 can be cascade-connected

Timer 2, 3 can be cascade-connected

Timer 0, 1, 2, 3 can be cascade-connected

16-bit timer  $\times$  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  $\times$  1

## ■ Serial interface

Synchronous type/UART (full-duplex)  $\times$  3: Serial 0, 1, 4

Synchronous type/Single-master I<sup>2</sup>C  $\times$  1: Serial 2

Synchronous type/I<sup>2</sup>C  $\times$  1: Serial 3

## ■ DMA controller

Number of channels: 2 channels

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 22 : (5 V I/F port) Common use. Specified pull-up resistor available. Input/output selectable (bit unit)

62 : (3 V I/F port) Common use. Specified pull-up resistor available. Input/output selectable (bit unit)

1 : (3 V I/F port) Common use

## ■ A/D converter

10-bit  $\times$  8 channels (with S/H)

## ■ Special Ports

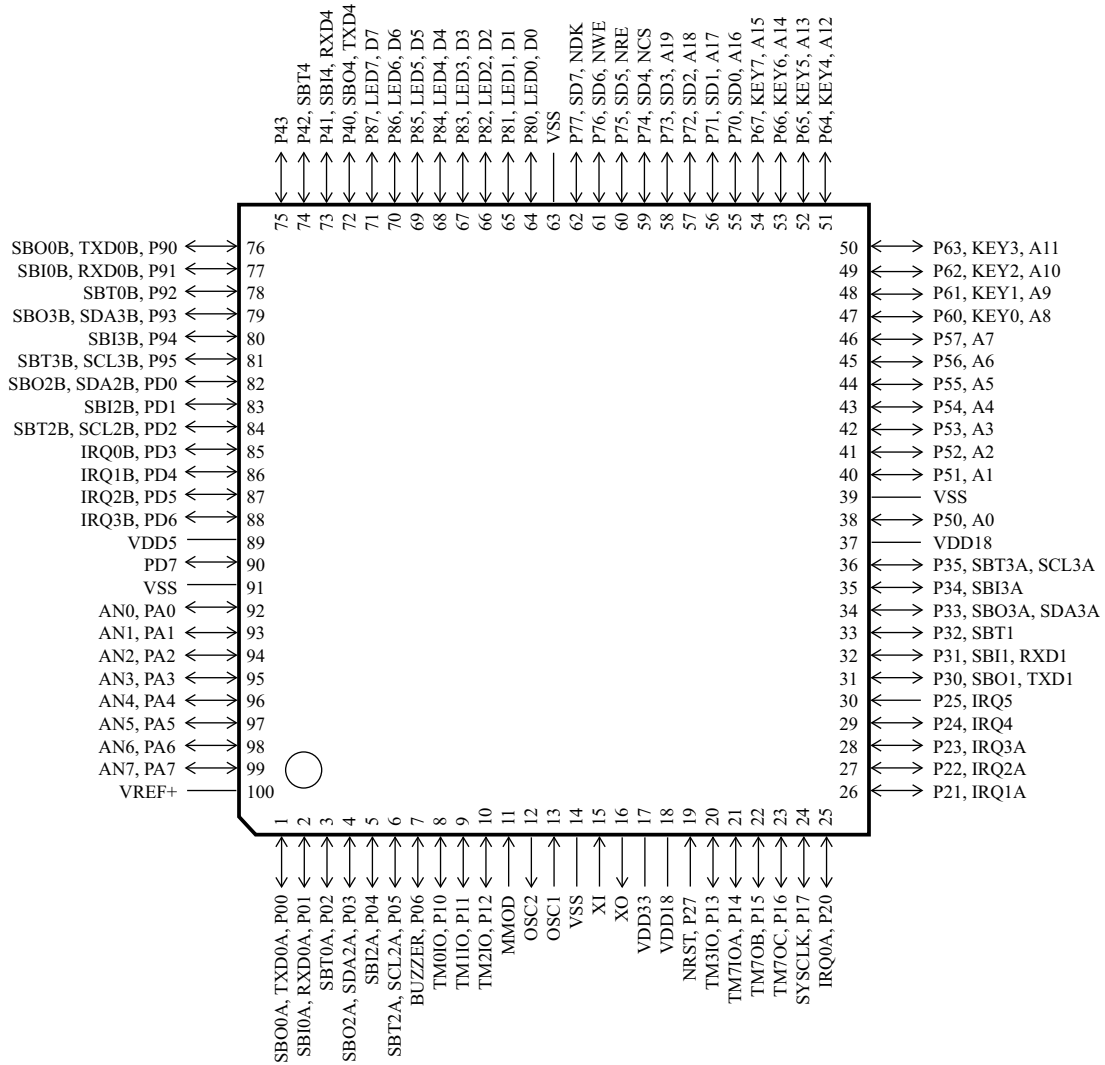
Buzzer output. High-current drive port

## ■ ROM Correction

Correcting address designation: Up to 7 addresses possible

■ Pin Assignment

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



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