

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

□ MN101E32 Series

Type	MN101EF32D
Internal ROM type	FLASH
ROM (byte)	64K+8K
RAM (byte)	4K
Package (Lead-free)	LQFP064-P-1414
Minimum Instruction Execution Time	50 ns (at 2.7 V to 5.5 V, 20 MHz) *: at internal 2, 3, 4, 5, 6, 8, 10 times oscillation used

■ Interrupts

6 external interrupts. 23 internal interrupts

RESET. NMI. External 0 to 4. Timer 0 to 4. Timer 6. Timer 7 (2 systems). Timer 8 (2 systems). Time base. Serial 0 (2 systems). Serial 1 (2 systems). Serial 2 (2 systems). Serial 4. Serial 5. A/D conversion. ATC. Key interrupt

■ Timer Counter

8-bit timer × 7

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

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

Timer 2Timer 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 3Timer pulse output. Event count. Remote control carrier output. 16-bit cascade connected (timer 2, 3). 32-bit cascade connected (timer 0, 1, 2, 3)

Timer 4Timer pulse output. Added pulse (2-bit) type PWM output. Event count. Serial transfer clock output. Simple pulse width measurement

Timer 68-bit freerun timer. Time base timer

Timer AEvent count. Baud rate timer. Clock output for peripheral function

16-bit timer × 2

Timer 7Timer 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 8Timer pulse output. Event count. High accuracy PWM output (cycle/duty continuous variable). Pulse width measurement. Input capture (both edge available). 32-bit cascade connected (timer 7, 8). 32-bit PWM output. Synchronous output event. Double buffer compare register

Watchdog timer × 1

■ Serial interface

Synchronous type/UART (full-duplex) × 3: Serial 0 to 2

Synchronous type/Multi-master I²C × 1: Serial 4

I²C slave × 1: Serial 5

■ DMA controller

1 systems. Maximum transfer cycles are 255

Starting factor: External request. Internal event. Software

■ I/O Pins

I/O 54 : Common use. Specified pull-up/pull-down resistor available. Input/output selectable (bit unit)

■ A/D converter

10-bit × 8 channels

■ Display control function

LCD: 32 segments × 4 commons (Static, 1/2, 1/3, or 1/4 duty) 1/3 bias

Usable if VLC1 ≤ VDD

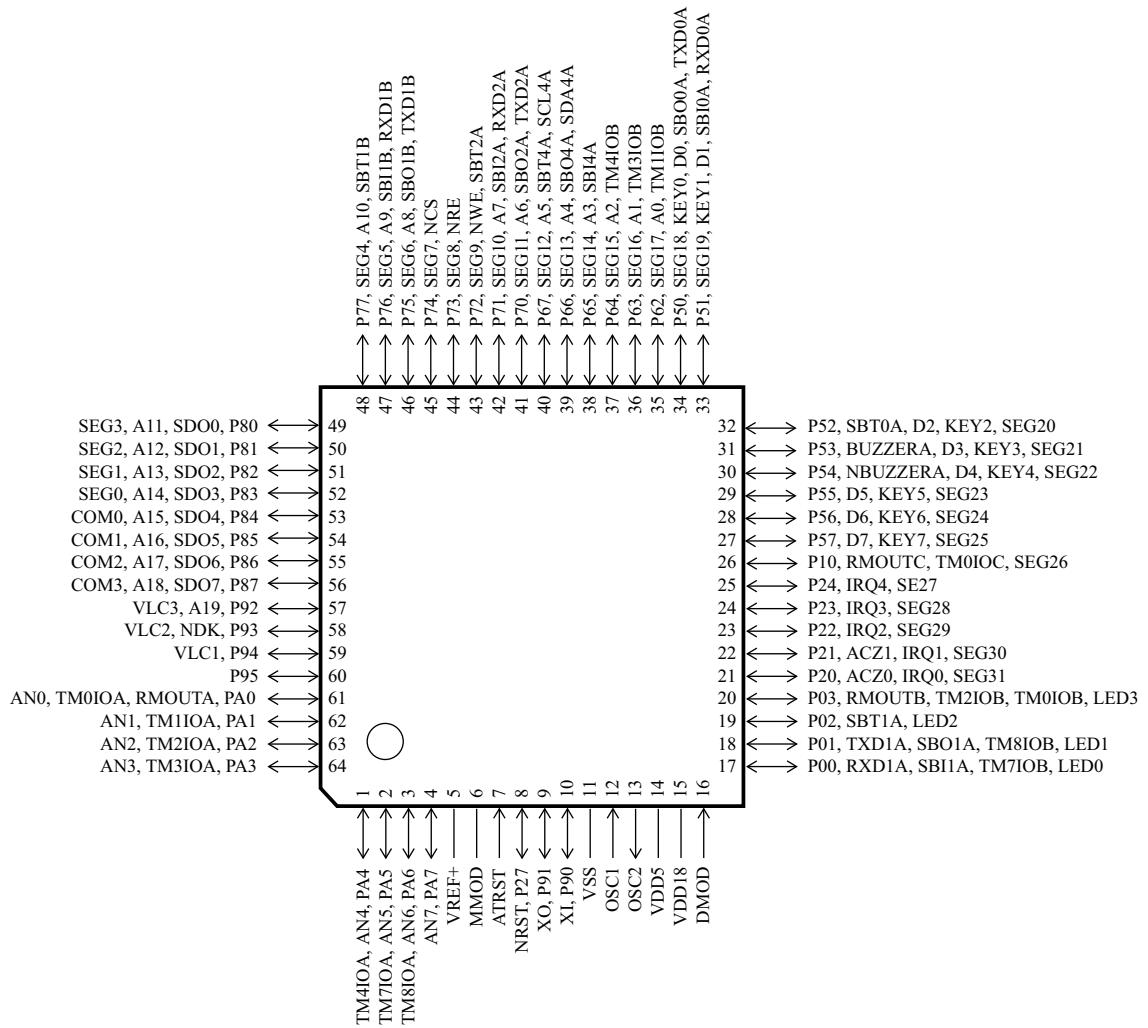
■ Special Ports

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

■ ROM Correction

Correcting address designation: Up to 7 addresses possible

■ Pin Assignment
LQFP064-P-1414



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

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Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
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