

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

□ MN101C527

Type	MN101C527
ROM (x8-bit)	16 K
RAM (x8-bit)	1.5 K
Package	LQFP064-P-1414 *Lead-free
Minimum Instruction Execution Time	0.1 μs (at 4.5 V to 5.5 V, 20 MHz) 0.25 μs (at 2.7 V to 5.5 V, 8 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 2.3 V.
Interrupts	• RESET • Watchdog • External 0 • External 1 • External 2 • External 4 (key interrupt dedicated) • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 6 • Timer 7 (2 systems) • Timer 8 • Time base • Serial 0 (2 systems) • A/D conversion finish
Timer Counter	<p>Timer counter 0 : 8-bit × 1 (square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement) (square-wave/PWM output to large current terminal P50 possible) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 0</p> <p>Timer counter 1 : 8-bit × 1 (square-wave output, event count, synchronous output event) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/8192, 1/32768 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 1</p> <p>Timer counter 0, 1 can be cascade-connected.</p> <p>Timer counter 2 : 8-bit × 1 (square-wave output, additional pulse type 10-bit PWM output, event count, synchronous output event, simple pulse width measurement) (square-wave/PWM output to large current terminal P52 possible) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 2</p> <p>Timer counter 3 : 8-bit × 1 (square-wave output, event count, generation of remote control carrier, serial 0 baud rate timer) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 3</p> <p>Timer counter 2, 3 can be cascade-connected.</p> <p>Timer counter 6 : 8-bit freerun timer Clock source 1/1 of system clock frequency; 1/1, 1/4096, 1/8192 of OSC oscillation clock frequency; 1/1, 1/4096, 1/8192 of XI oscillation clock frequency Interrupt source coincidence with compare register 6</p> <p>Timer counter 7 : 16-bit × 1 (square-wave/16-bit PWM output [cycle / duty continuous variable], event count, synchronous output event, pulse width measurement, input capture) (square-wave/PWM output to large current terminal P51 possible) Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency Interrupt source coincidence with compare register 7 (2 lines)</p>

Timer Counter (Continue)	<p>Timer counter 8: 16-bit × 1 (square-wave/16-bit PWM output [duty continuous variable], event count, pulse width measurement, input capture) (square-wave/PWM output to large current terminal P53 possible) Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency Interrupt source agreement with compare register 8</p> <p>Timer counters 7, 8 can be cascade-connected. (square-wave output, input capture, pulse width measurement is possible as a 32-bit timer.)</p> <p>Time base timer (one-minute count setting) Clock source 1/1 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency Interrupt source 1/128, 1/256, 1/512, 1/1024, 1/8192, 1/32768 of clock source frequency</p> <p>Watchdog timer Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency</p>
---------------------------------	---

Serial Interface	<p>Serial 0 : synchronous type/UART (full-duplex) × 1 Clock source 1/2, 1/4 of system clock frequency; 1/2 pulse output of timer counter 3; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency</p>
-------------------------	---

I/O Pins	I/O	42	<ul style="list-style-type: none"> • Common use • Specified pull-up resistor available • Input/output selectable (bit unit) • Specified pull-down resistor partially selectable
	Input	7	<ul style="list-style-type: none"> • Common use • Specified pull-up resistor available • Specified pull-down resistor partially selectable

A/D Inputs	10-bit × 4-ch. (with S/H)
-------------------	---------------------------

LCD	<p>24 segments × 4 commons (Static, 1/2, 1/3, or 1/4 duty) LCD power supply separated from VDD (usable if VDD ≤ VLCD ≤ 5.5 V) LCD power step-up circuit contained (3/2, 2 and 3 times) LCD shunt resistance contained</p>
------------	---

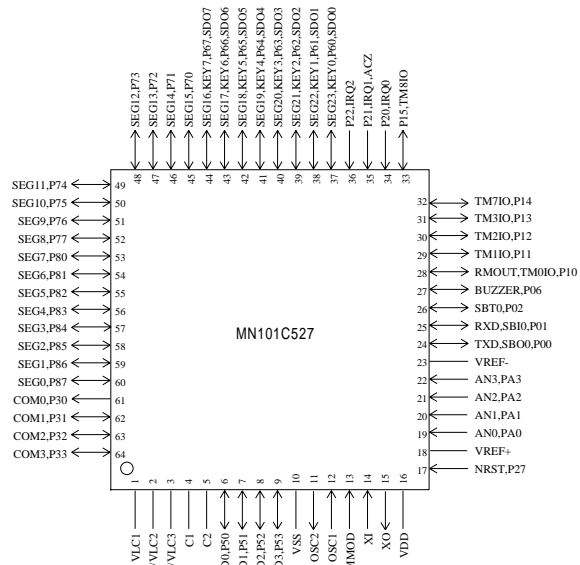
Special Ports	Buzzer output, remote control carrier signal output, high-current drive port
----------------------	--

Electrical Characteristics
Supply current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 20 MHz, VDD = 5 V		25	60	mA
	IDD2	fosc = 8 MHz, VDD = 5 V		10	25	mA
	IDD3	fx = 32 kHz, VDD = 3 V		30	100	μA
Supply current at HALT	IDD4	fx = 32 kHz, VDD = 3 V, Ta = 25°C			8	μA
	IDD5	fx = 32 kHz, VDD = 3 V, Ta = -40°C to +85°C			30	μA
Supply current at STOP	IDD6	VDD = 5 V, Ta = 25°C			2	μA
		VDD = 5 V, Ta = -40°C to +85°C			35	μA

See the next page for pin assignment and support tool.

Pin Assignment



LQFP064-P-1414 *Lead-free

Support Tool

In-circuit Emulator	PX-ICE101C / D + PX-PRB101C52-LQFP064-P-1414-M	
EPROM Built-in Type	Type	MN101CP52A
	ROM (× 8-bit)	32 K
	RAM (× 8-bit)	1.5 K
	Minimum instruction execution time	0.10 μs (at 4.5 V to 5.5 V, 20 MHz) 0.25 μs (at 2.7 V to 5.5 V, 8 MHz) 62.5 μs (at 2.3 V to 5.5 V, 32 KHz)
	Package	LQFP064-P-1414 *Lead-free

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

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation, Nuvoton Technology Corporation Japan or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information de-scribed in this book.
- (3) The products described in this book are intended to be used for general applications (such as office equipment, communications equipment, measuring instruments and household appliances), or for specific applications as expressly stated in this book.
Please consult with our sales staff in advance for information on the following applications, moreover please exchange documents separately on terms of use etc.: Special applications (such as for in-vehicle equipment, airplanes, aerospace, automotive equipment, traffic signaling equipment, combustion equipment, medical equipment and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
Unless exchanging documents on terms of use etc. in advance, it is to be understood that our company shall not be held responsible for any damage incurred as a result of or in connection with your using the products described in this book for any special application.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
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.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. We do not guarantee quality for disassembled products or the product re-mounted after removing from the mounting board.
When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) When reselling products described in this book to other companies without our permission and receiving any claim of request from the resale destination, please understand that customers will bear the burden.
- (8) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.

No.070920

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panasonic\(松下\)](#)