❑ 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] 0.10 µs (at 4.5 V to 5.5 V, 20 MHz) 0.238 µs (at 2.7 V to 5.5 V, 8.39 MHz) 125 µs (at 2.0 V to 5.5 V, 32 kHz)* [Double speed] 0.12 µs (at 4.5 V to 5.5 V, 8.39 MHz) 0.25 µs (at 3.0 V to 5.5 V, 4 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. 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

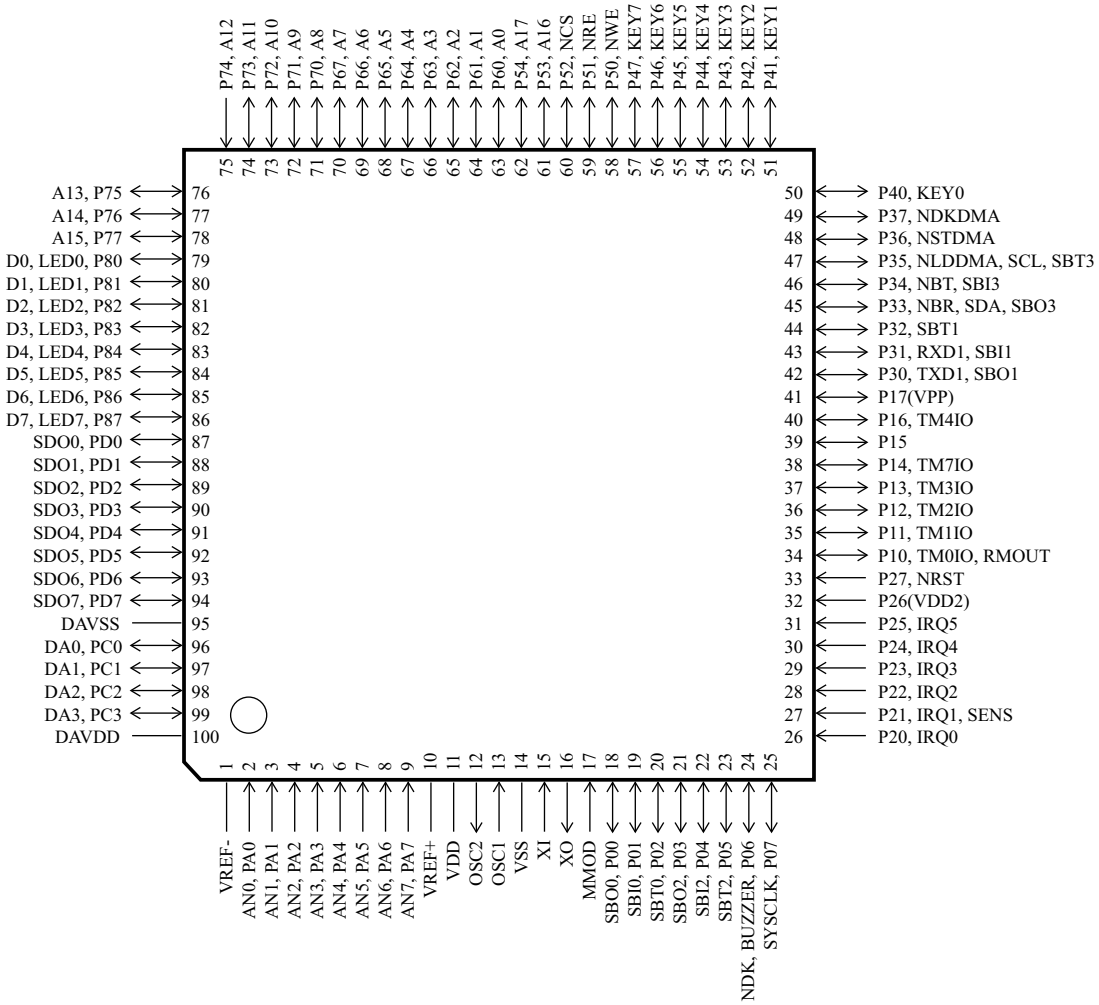
■ Electrical Charactreistics (Supply current)

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

■ Pin Assignment

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



Note) ( ): Flash memory built-in type

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(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. 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.

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