■ MN101C28 Series

Туре	MN101C28A	MN101C28C	MN101C28D	MN101C28F	MN101C28L	MN101CP28D	MN101CP28L		
Internal ROM type	Mask ROM					EPROM			
ROM (byte)	32K	48K	64K	96	96K		96K		
RAM (byte)	1.5K	2	K	4K	10K	2K	10K		
Package (Lead-free)	LQFP080-P-1414A, QFP084-P-1818E, TQFP080-P-1212D			LQFP080-P-1414A		LQFP080-P-1414A, QFP084-P-1818E, TQFP080-P-1212D	LQFP080-P-1414A		
Minimum Instruction Execution Time	0.10 µs (at 4.5 V to 5.5 V, 20 MHz) 0.238 µs (at 2.6 V to 5.5 V, 8.39 MHz) 0.333 µs (at 2.3 V to 5.5 V, 6 MHz) 1.00 µs (at 2.0 V to 5.5 V, 2 MHz)* 125 µs (at 2.0 V to 5.5 V, 32.768 kHz)* *: The lower limit for operation guarantee for EPROM built-in type is 2.3 V.								

■ Interrupts

RESET. Watchdog. External 0 to 4. Timer 0 to 5. Time base. Serial 0 to 2. Automatic transfer finish. A/D conversion finish

■ Timer Counter

8-bit timer \times 4

Timer 1Square-wave output. Event count. Synchronous output event

Timer 2Square-wave/8-bit PWM output. Event count. Synchronous output event

Timer 3Square-wave output. Event count. Remote control carrier output. Serial 0 baud rate timer

Timer 0, 1 can be cascade-connected

Timer 2, 3 can be cascade-connected

16-bit timer \times 1

Timer 4Square-wave/16-bit PWM output. Event count. Synchronous output event. Input capture

Time base timer: One-minute count setting. Independently operable 8-bit timer 5

Watchdog timer × 1

■ Serial interface

Synchronous type/Simple UART (half-duplex) \times 1: Serial 0

Synchronous type \times 1: Serial 1

Synchronous type/Single-master I²C × 1: Serial 2

■ I/O Pins

I/O 57: Common use. Specified pull-up resistor available. Input/output selectable (bit unit)

Input 13: Common use. Specified pull-up resistor available

■ A/D converter

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

■ Special Ports

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

■ Electrical Charactreistics (Supply current)

Parameter	Symbol	Condition	Limit			Unit
- arameter		Condition		typ	max	Offic
Operating supply current	IDD1	fosc = 20 MHz. VDD = 5 V		25	50	mA
	IDD2	fx = 32.768 kHz. VDD = 3 V		40	120	μΑ
Cupply ourront at HALT	IDD3	fx = 32.768 kHz. VDD = 3 V. Ta = 25 °C		4	8	μΑ
Supply current at HALT		fx = 32.768 kHz. VDD = 3 V. Ta = 85 °C			20	μA
Cumply ourrent at CTOD	IDD4	VDD = 5 V. Ta = 25 °C			1	μΑ
Supply current at STOP		$VDD = 5 \text{ V. } \text{Ta} = -40 ^{\circ}\text{C} \text{ to } +85 ^{\circ}\text{C}$			30	μΑ

■ Development tools

In-circuit Emulator

PX-ICE101C/D + PX-PRB101C28-TQFP080-P-1212

PX-ICE101C/D + PX-PRB101C28-QFP084-P-1818E

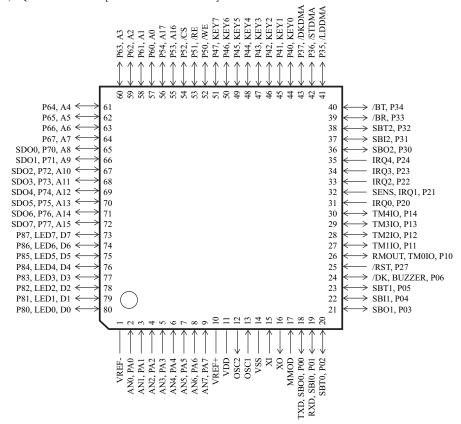
PX-ICE101C/D + PX-PRB101C28-LQFP080-P-1414A

Panasonic MAD00006HEM

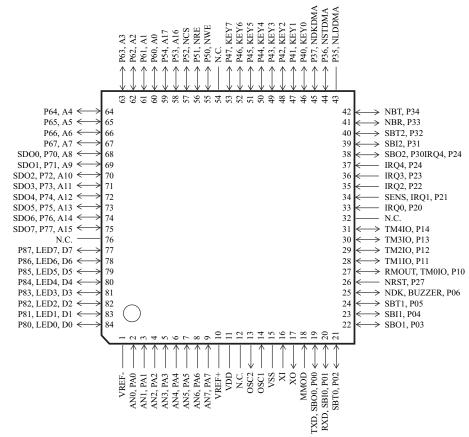
MN101C28A, MN101C28C, MN101C28D, MN101C28F, MN101C28L, MN101CP28D, MN101CP28L

■ Pin Assignment

LQFP080-P-1414A, TQFP080-P-1212D [MN101C28A/28C/28D]



QFP084-P-1818E



MAD00006HEM

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