

MN101C78 Series

Type	MN101C78A	MN101CF78A
Internal ROM type	Mask ROM	FLASH
ROM (byte)	32K	
RAM (byte)	1.5K	
Package (Lead-free)	TQFP048-P-0707B	
Minimum Instruction Execution Time	0.100 μ s (at 3.0 V to 3.6 V, 10 MHz) 0.118 μ s (at 2.7 V to 3.6 V, 8.5 MHz) 0.235 μ s (at 1.8 V to 3.6 V, 4.25 MHz)* 62.5 μ s (at 1.8 V to 3.6 V, 32 kHz)* * The lower limit for operation guarantee for flash memory built-in type is 2.2 V.	

■ Interrupts

RESET, Watchdog, External 0 to 2, External 4 (key interrupt dedicated), Timer 0 to 3, Timer 6, Timer 7 (2 systems), Timer 8 (2 systems), Time base, Serial 0 (2 systems), Serial 1 (2 systems), Serial 3, Serial 4, A/D conversion finish

■ Timer Counter

8-bit timer \times 5

Timer 0square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement, added pluse (2-bit) system PWM output, real time output control (square-wave/PWM output to large current terminal P50 possible)

Timer 1square-wave output, event count, synchronous output event

Timer 2square-wave output, added pluse (2-bit) system PWM output, PWM output, serial transfer clock output, real time output control, event count, synchronous output event, simple pulse width measurement (square-wave/PWM output to large current terminal P52 possible)

Timer 3square-wave output, event count, generation of remote control carrier, serial transfer clock

Timer 68-bit freerun timer

Timer 0, 1 can be cascade-connected.

Timer 2, 3 can be cascade-connected.

16-bit timer \times 2

Timer 7square-wave output, 16-bit PWM output (cycle / duty continuous variable), event count, synchronous output event, pulse width measurement, input capture, real time output control, high performance IGBT output (square-wave/PWM output to large current terminal P51 possible)

Timer 8square-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)

Timers 7, 8 can be cascade-connected. (square-wave output, PWM input capture, pluse width measurement is possible as a 32-bit timer.)

Time base timer : one-minute count setting

Watchdog timer

■ Serial interface

Serial 0 : synchronous type/UART (full-duplex) \times 1

Serial 1 : synchronous type/UART (full-duplex) \times 1

Serial 3 : synchronous type/single-master I²C \times 1

Serial 4 : I²C slave \times 1 (Applicable for I²C high-speed transfer mode, 7bit/10bit address setting, general call)

■ I/O Pins

I/O 39 : Common use , Specified pull-up resistor available, Input/output selectable (bit unit)

■ A/D converter

10-bit \times 7-ch. (with S/H)

■ Display control function

LCD : 12 segments \times 4 commons (static, 1/2, 1/3, or 1/4 duty)

(usable if VLCD \leq VDD)

■ Special Ports

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

■ Electrical Charactreistics (Supply current)

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 4.25 MHz (fs = fosc / 2), VDD = 3 V		0.6(1.3)	1.1(2.2)	mA
	IDD2	fx = 32 kHz (fs = fx / 2), VDD = 3 V		4(46)	15(90)	μA
Supply current at HALT	IDD3	fx = 32 kHz , VDD = 3 V, Ta = 25°C		2(3)	5(13)	μA
	IDD4	fx = 32 kHz , VDD = 3 V , Ta = -40°C to +85°C			10(40)	μA
Supply current at STOP	IDD5	VDD = 3 V , Ta = 25°C			2(3)	μA
	IDD6	VDD = 3 V , Ta = -40°C to +85°C			8(30)	μA

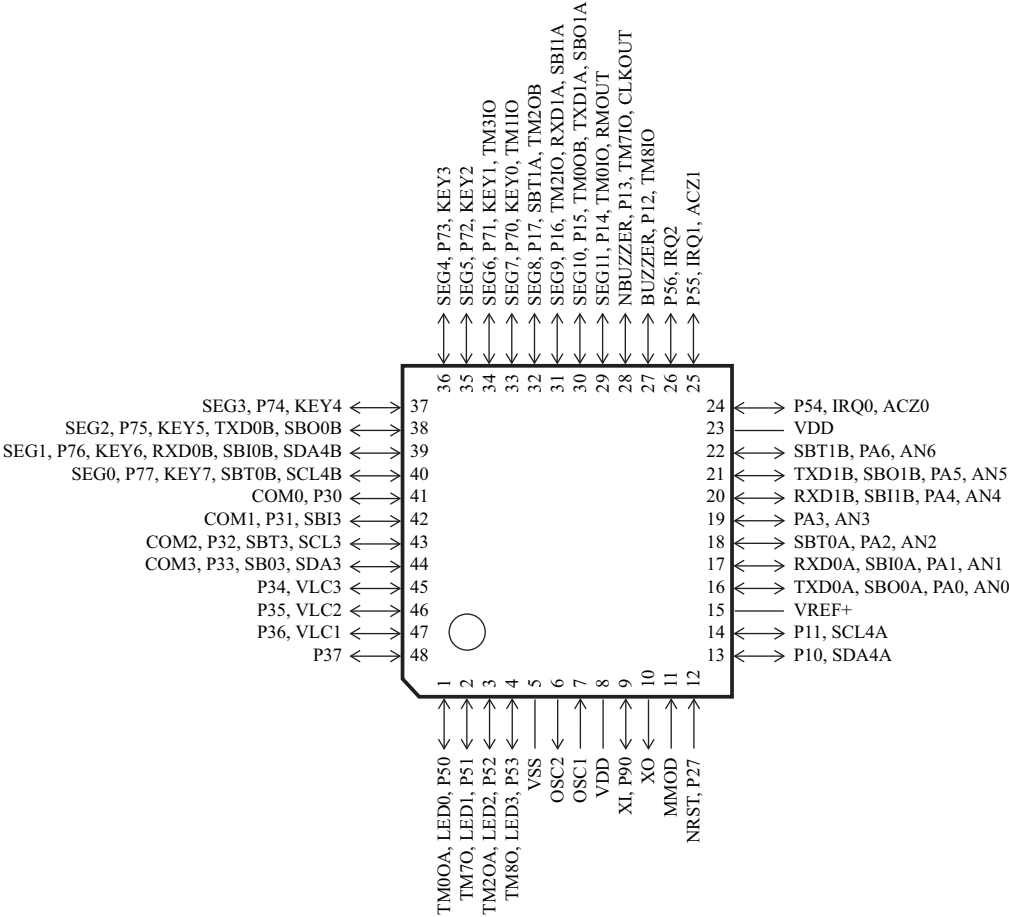
() : Flash memory built-in type

■ Development tools

In-circuit Emulator
PX-ICE101C/D + PX-PRB101C78-TQFP048-P-0707B-M

■ Pin Assignment

TQFP048-P-0707B



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