

# □ MN101C39C

Type	MN101C39C	MN101CP39C
Internal ROM type	Mask ROM	EPROM
ROM (byte)	48K	
RAM (byte)	2K	
Package (Lead-free)	TQFP080-P-1212D	
Minimum Instruction Execution Time	0.1 $\mu$ s (at 4.5 V to 5.5 V, 20 MHz) 0.25 $\mu$ s (at 2.7 V to 5.5 V, 8 MHz) 125 $\mu$ s (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 to 4, Timer 2 to 5, Time base, Serial 0, Serial 1, A/D conversion finish

## ■ Timer Counter

Timer counter 2 : 8-bit  $\times$  1 (square-wave/8-bit PWM output, event count, synchronous output event)

Clock source..... 1/1, 1/4 of system clock frequency; 1/1 of XI oscillation clock frequency; external clock input

Interrupt source ..... coincidence with compare register 2

Timer counter 3 : 8-bit  $\times$  1

(square-wave output, event count, generation of remote control carrier, serial 0 baud rate timer)

Clock source..... 1/4, 1/16 of system clock frequency; 1/1 of OSC oscillation clock frequency; external clock input

Interrupt source ..... coincidence with compare register 3

Timer counter 2, 3 can be cascade-connected.

Timer counter 4 : 16-bit  $\times$  1 (square-wave/16-bit PWM output, event count, synchronous output event, input capture)

Clock source..... 1/4, 1/16 of system clock frequency; 1/1 of OSC oscillation clock frequency; external clock input

Interrupt source ..... coincidence with compare register 4

Time base timer (one-minute count setting, independently operable 8-bit timer counter 5)

Clock source..... 1/4 of system clock frequency; 1/1, 1/8192 of OSC oscillation clock frequency; 1/1, 1/8192 of XI oscillation clock frequency

Interrupt source ..... coincidence with compare register 5; 1/8192 prescaler overflow

Watchdog timer

Interrupt source ..... 1/65536, 1/262144, 1/1048576 of system clock frequency (ROM option)

## ■ Serial interface

Serial 0 : synchronous type/simple UART (half-duplex)  $\times$  1

Clock source..... 1/2, 1/4, 1/16 of system clock frequency; 1/2 of timer counter 3 frequency

Serial 1 : synchronous type  $\times$  1

Clock source..... 1/2, 1/8, 1/64 of system clock frequency; 1/2 of timer counter 3 frequency

## ■ I/O Pins

I/O	49	Common use, Specified pull-up resistor available , Input/output selectable (bit unit) Specified pull-down resistor partially selectable
Input	12	Common use, Specified pull-up resistor available, Specified pull-down resistor partially selectable

## ■ A/D converter

10-bit  $\times$  8-ch. (with S/H)

## ■ Display control function

LCD

28 segments  $\times$  4 commons (static , 1/2, 1/3, or 1/4 duty)

## ■ Special Ports

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

■ Electrical Characteristics (Supply current)

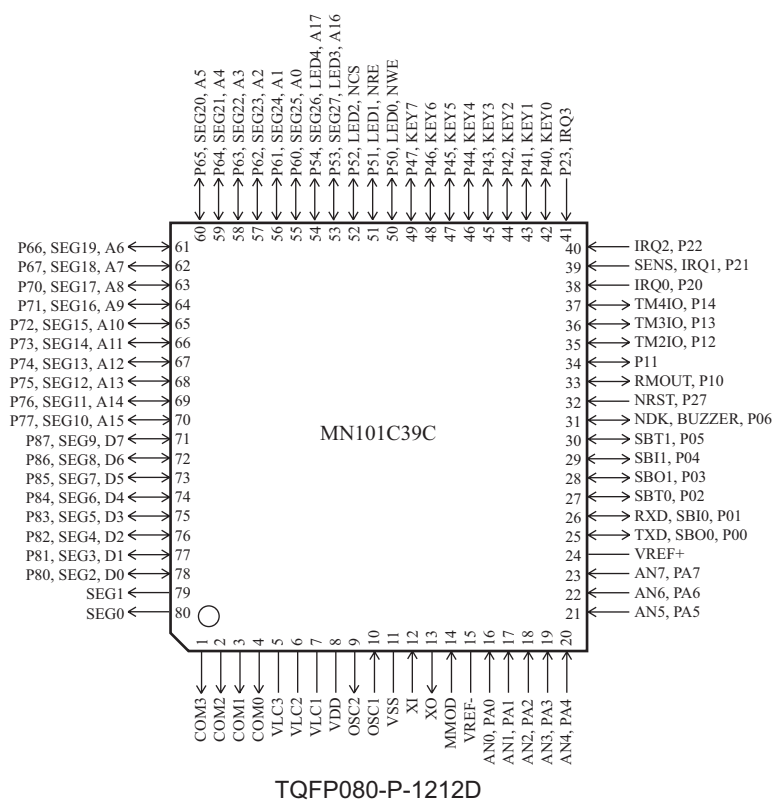
Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 8 MHz , VDD = 5 V		8	25	mA
	IDD2	fx = 32 kHz , VDD = 3 V		18	100	μA
Supply current at HALT	IDD3	fx = 32 kHz , VDD = 3 V , Ta = 25°C		3	8	μA
	IDD4	fx = 32 kHz , VDD = 3 V , Ta = -40°C to +85°C			25	μA
Supply current at STOP	IDD5	VDD = 5 V , Ta = 25°C			1	μA
		VDD = 5 V , Ta = -40°C to +85°C			20	μA

■ Development tools

In-circuit Emulator

PX-ICE101C/D+PX-PRB101C39-TQFP080-P-1212

■ Pin Assignment



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