❑ MN101C29D / F29D

Type	**MN101C29D (under development) / F29D**
ROM (x8-bit)	64K/64K (built-in flash EEPROM)
RAM (x8-bit)	1536/1536
Minimum Instruction Execution Time	**0.10 µs (at 4.5 to 5.5V, 20MHz)** **0.25 µs (at 2.7 to 5.5V, 8MHz)*** **125 µs (at 2.0 to 5.5V, 32kHz)***

*** The lower limit for operation guarantee for flash EEPROM built-in version is 4.5V.**

Interrupts

• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • External 5
• Timer 2 • Timer 3 • Time Base • Timer 8 (2 systems) • Serial 2

Timer Counter

Timer Counter 2 : 8-bit x 1 (Square-wave Output[Timer Pulse Output], PWM Output, Event Count, Timer Synchronous Output, Simple Pulse Width Measurement Function)

Clock Source: 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input

Timer Counter 3 : 8-bit x 1 (Square-wave Output[Timer Pulse Output], Event Count, Remote Control Carrier Output)

Clock Source: 1/2, 1/8 of System Clock, 1/1, 1/4, 1/16, 1/64, 1/128 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input

Timer Counter 2, 3 can be cascade-connected.

Time Base Timer (Independently Operable 8-bit Freerum Timer)

Clock Source: 1/1 of System Clock, 1/1, $1/2^{13}$, $1/2^{7}$, of OSC Oscillation Clock, 1/1, $1/2^{13}$, $1/2^{7}$, of XI Oscillation Clock

Timer Counter 8 : 16-bit x 1

Clock Source: Either of System Clock, OSC Oscillation Clock, External Clock 1 or External Clock 2 Divided Into 1/1, 1/2, 1/4 and 1/16

(Hardware Configuration)
- Double Buffer Type Compare Register x 1
- Input Capture Register x 1

(Timer Functions)
- Square-wave Output (Timer Pulse Output), PWM Output (Duty Continuously Variable), Event Count, Simple Pulse Width Measurement Function and Input Capture Function

Watchdog Timer

Interrupt Source: Runaway detection frequency selection from $1/2^{16}$, $1/2^{18}$ and $1/2^{20}$ of system clock

Serial Interface

Serial 2 : 8-bit x 1 (3-wire synchronous)

Synchronization method (MSB or LSB first selectable, 1 to 8 bits arbitrary transmission, continuous transmission, continuous reception and continuous transmission-reception possible by combination with ATC function)

Transfer Clock Source: 1/2, 1/4 of System Clock, 1/2, 1/4, 1/16, 1/32 of OSC Oscillation Clock, Timer Counter 2, 3, 4, 5 Output

Multiplication/Division functions

Singned/unsigned	16-bit x 16-bit Arithmetic Operation (Execution in 15 Cycles)
Unsigned	32-bit ÷ 16-bit Arithmetic Operation (Execution in 17 Cycles)

I/O Pins	**I/O**	**53**	• Common use. 48 • Specified pull-up Resistor available • Input/Output selectable (bit unit)
	Input	**2**	• Common use 1

Special Ports

High-current Drive Port x 1

Package

LQFP080-P-1414A, LQFP064-P-1414 (under planning)

Electrical Characteristics

Supply Current

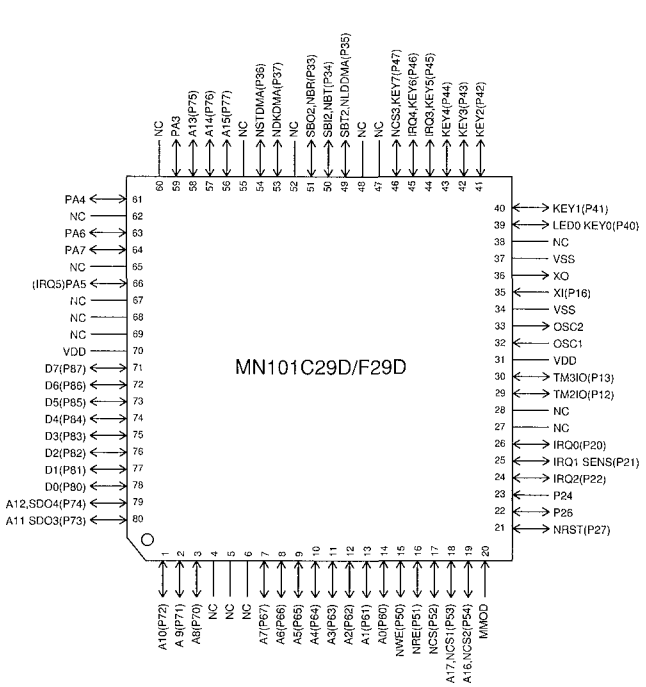
Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
Operating Supply Current	IDD1	fosc = 20MHz, VDD = 5V			60	mA
	IDD2	fx = 32kHz, VDD = 3V			100	µA
Supply Current at HALT	IDD3	fx = 32kHz, VDD = 3V, Ta = 25°C			8	µA
		fx = 32kHz, VDD = 3V, Ta = 85°C			20	µA
Supply Current at STOP	IDD4	VDD = 5V, Ta = 25°C			1	µA
		VDD = 5V, Ta = 85°C			30	µA

Support Tool

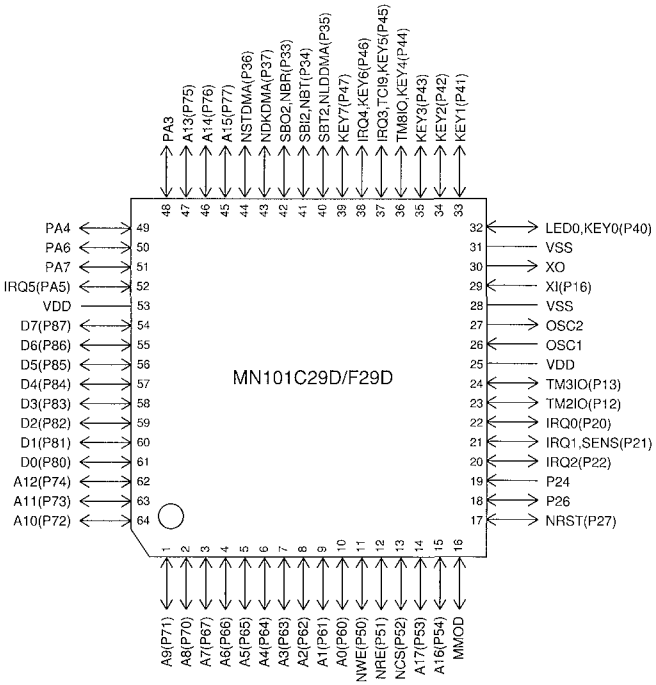
In-Circuit Emulator

PX-ICE101C / D + PX-PRB101C29-C / D

Pin Assignment



LQFP080-P-1414A



LQFP064-P-1414 (under planning)