❑ MN101C15A / 15C / 15D / 15E / F15F / 15F / 15L

Type — **MN101C015A / 15C / 15D / 15E / F15F /15F / 15L (all under development)**

ROM (x8-bit) — 32K/48K/64K/96K/96K(flash)/96K/96K (External memory can be expanded)

RAM (x8-bit) — 1536/2048/2048/4096/4096/4096/10240 (External memory can be expanded)

Minimum Instruction Execution Time

0.10 µs (at 4.5 to 5.5V, 20MHz)
0.25 µs (at 2.7 to 5.5V, 8MHz)*2
1.00 µs (at 2.0 to 5.5V, 2MHz)*1, 2
125 µs (at 2.0 to 5.5V, 32kHz)*1, 2

***1 The lower limit for operation guarantee for EPROM built-in version is 2.7V.**
***2 4.5 to 5.5V for MN101CF15F**

Interrupts

• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • Timer 0
• Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 5 • Clock Timer • Serial 0 • Serial 1 • Serial 2
• Automatic Transfer finish • A/D Conversion finish

Timer Counter

Timer Counter 0 : 8-bit x 1 (Square-wave/8-bit PWM Output, Event Count, Generation of Remote Control Carrier)
Clock Source .....1/1, 1/4 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input
Interrupt Source .....Coincidence with Compare Register 0

Timer Counter 1 : 8-bit x 1 (Square-wave Output, Event Count, Synchronous Output Event)
Clock Source .....1/16, 1/64 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input
Interrupt Source .....Coincidence with Compare Register 1

Timer Counter 0, 1 can be cascade-connected.

Timer Counter 2 : 8-bit x 1 (Square-wave/8-bit PWM Output, Event Count, Synchronous Output Event)
Clock Source .....1/1, 1/4 of System Clock, 1/1 of XI Oscillation Clock, External Clock Input
Interrupt Source .....Coincidence with Compare Register 2

Timer Counter 3 : 8-bit x 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, 1/1 of OSC Oscillation Clock, External Clock Input
Interrupt Source .....Coincidence with Compare Register 3

Timer Counter 2, 3 can be cascade-connected.

Timer Counter 4 : 16-bit x 1 (Square-wave/16-bit PWM Output, Event Count, Synchronous Output Event, Input Capture)
Clock Source .....1/4, 1/16 of System Clock, 1/1 of OSC Oscillation Clock, External Clock Input
Interrupt Source .....Coincidence with Compare Register 4

Time Base Timer (One-minute Count Setting, Five independently operable 8-bit Timer Counter)
Clock Source .....1/4 of System Clock, 1/1, 1/8192 of OSC Oscillation Clock,
1/1, 1/8192 of XI Oscillation Clock
Interrupt Source .....Coincidence with Compare Register 5, 1/8192 Prescaler Overflow

Watchdog Timer
Clock Source .....1/65536, 1/262144, 1/1048576 of System Clock (ROM Option)

Serial Interface

Serial 0 : 8-bit x 1 (Synchronous Type/Simple UART[Half-duplex])
Clock Source .....1/2, 1/4, 1/16 of System Clock
1/2 of Timer Counter 3

Serial 1 : 8-bit x 1 (Synchronous Type)
Clock Source .....1/2, 1/8, 1/64 of System Clock
1/2 of Timer Counter 3

Serial 2 : 8-bit x 1 (Synchronous Type/Simple I²C)
Clock Source .....1/1, 1/2, 1/4 of System Clock
1/2 of Timer Counter 0

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 Inputs

10-bit x 8ch (with S/H)

Special Ports

Buzzer Output, Remote Control Carrier Signal Output, High-current Drive Port

Package

LQFP080-P-1414A

Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
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

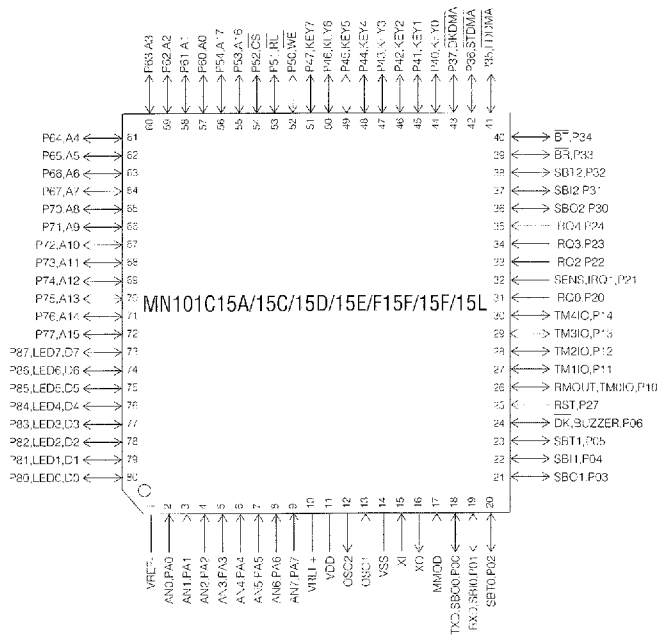
In-Circuit Emulator

PX-ICE101C + PX-PRB101C15F

EPROM built-in Type

Use **MN101CP15F/15L** [ES (Engineering Sample) available] in LQFP080-P-1414A package.

Pin Assignment



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