

# □ MN101E31G

Type	MN101E31G	MN101EF31G
Internal ROM type	Mask ROM	FLASH
ROM (byte)	128K	
RAM (byte)	4K	
Package (Lead-free)	LQFP080-P-1414A (Under development)	
Minimum Instruction Execution Time	50 ns (at 2.2 V to 5.5 V, 20 MHz) * at internal 2, 3, 4, 5, 6, 8, 10 times oscillation used	50 ns (at 2.2 V to 5.5 V, 20 MHz)

## ■ Interrupts

6 external interrupts, 25 internal interrupts

RESET, Watchdog, External 0 to 4, Timer 0 to 4, Timer 6, Timer 7 (2 systems), Timer 8 (2 systems), Time base, Serial 0 (2 systems), Serial1 (2 systems), Serial 2 (2 systems), Serial 3 (2 systems), Serial 4, Serial 5, A/ D conversion finish, Automatic transfer, Key interrupts

## ■ Timer Counter

Timer counter 0 : 8-bit × 1

(timer pulse output, event count, added pulse (2-bit) system PWM output, generation of remote control carrier, simple pulse measurement, real time output control)

Timer counter 1 : 8-bit × 1

(timer pulse output, event count, 16-bit cascade connected (timer 0, 1) timer synchronous output event)

Timer counter 2 : 8-bit × 1

(timer pulse output, event count, added pulse (2-bit) system PWM output, simple pulse measurement, 24-bit cascade connected (timer 0, 1, 2), timer synchronous output event, real timer output control)

Timer counter 3 : 8-bit × 1

(timer pulse output, event count, generation of remote control carrier, 16-bit cascade connected (timer 2, 3), 32-bit cascade connected (timer 0, 1, 2, 3))

Timer counter 4 : 8-bit × 1

(timer pulse output, added pulse (2-bit) system PWM output, event count, serial transfer clock, simple pulse measurement)

Timer counter 6 : 8-bit free run timer, time base timer

Timer counter 7 : 16-bit × 1

(timer pulse output, event count, High accuracy PWM, High performance IGBT output (cycle/duty continuous variable) timer synchronous output event, input capture (Both edge available), real timer output control), double buffer compare register

Timer counter 8 : 16-bit × 1

(timer pulse output, event count, High accuracy PWM output (cycle/duty continuous variable) pulse width measurement, input capture (Both edge available), 32-bit cascade connected (Timer 7, 8), 32-bit PWM output, synchronous output event), double buffer compare register

Timer counter A : 8-bit × 1 (event count, Serial transfer clock timer, clock for function (timer, serial, LCD))

Watchdog timer

## ■ Serial interface

Serial 0 ~ 3 : UART (full duplex) / synchronous × 1

Serial 4 : multi master I<sup>2</sup>C / synchronous × 1

Serial 5 : I<sup>2</sup>C slave × 1

## ■ DMA controller

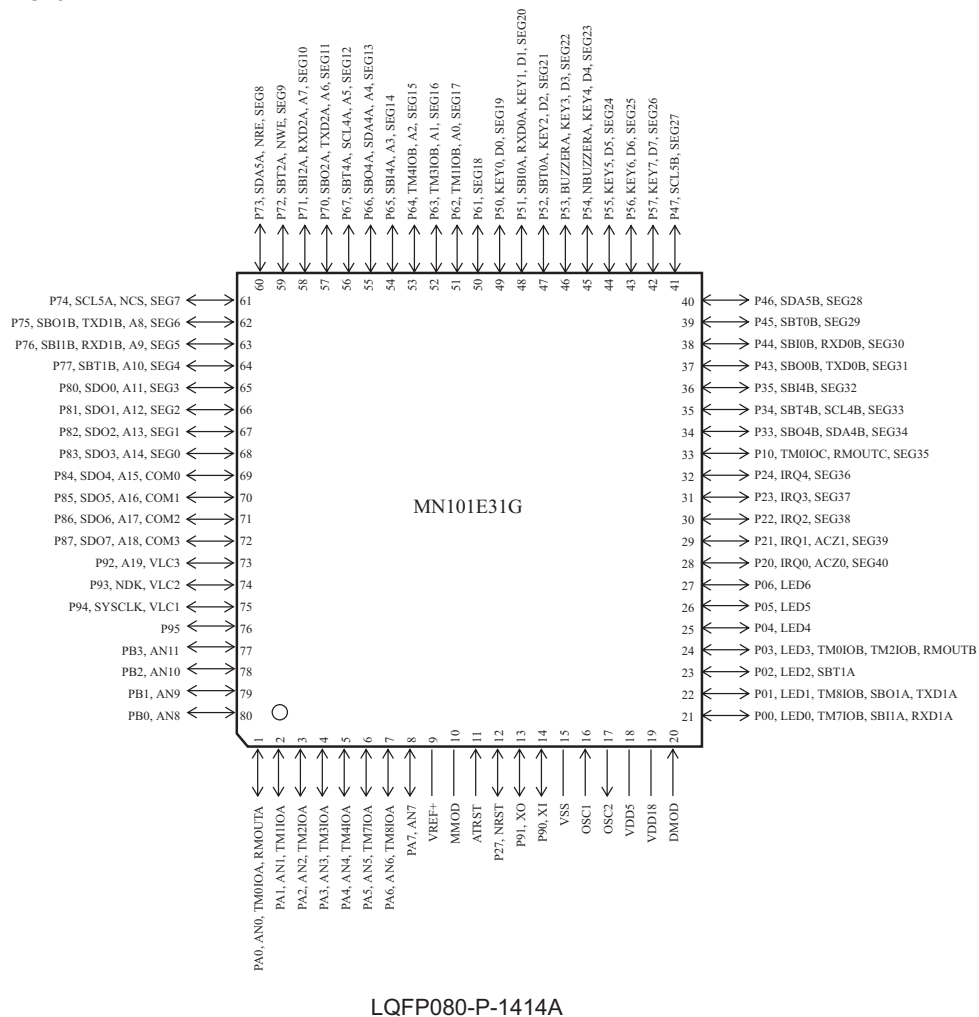
1 systems (External request/internal event request/software request maximum transfer cycles are 255)

## ■ I/O Pins

I/O	70	common use, Specified pull-up/pull-down resistor available, Input/output selectable (bit-unit)
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- A/D converter  
10-bit × 12-ch.
- Display control function  
LCD  
55 segments × 4 commons (static, 1/2, 1/3, 1/4 duty) 1/3 bias  
Usable if  $V_{LC1} \leq V_{DD}$
- Special Ports  
Buzzer output, remote control carrier signal output, high-current drive port
- ROM Correction  
Correcting address designation : up to 7 addresses possible
- Development tools  
In-circuit Emulator  
PX-ICE101E + PRBV101E31-LQFP080-P-1414A (Under development)

■ Pin Assignment



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