❑ MN101CF95F, MN101CF95G

Type	MN101CF95F (under planning)	MN101CF95G (under development)
ROM (×8-bit)	96K	128K
RAM (×8-bit)	4K	6K
Package	TQFP080-P-1212D *Lead-free	
Minimum Instruction Execution Time	Standard: 0.2 µs (at 2.7 V to 3.6 V, 10 MHz)* 0.5 µs (at 2.7 V to 3.6 V, 4 MHz)* 62.5 µs (at 2.7 V to 3.6 V, 32 kHz)* Double speed: 0.1 µs (at 2.7 V to 3.6 V, 10 MHz)*	
Interrupts	• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • External 5 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 5 • Timer 6 • Timer 7 • Timer 8 • Time base • Serial 0 reception • Serial 0 transmission • Serial 1 reception • Serial 1 transmission • Serial 2 • Serial 3 • Serial 4 reception • Serial 4 transmission • Automatic transfer finish • A/D conversion finish • Key interrupts (12 lines)	

Timer Counter

Timer counter 0: 8-bit × 1
(square-wave/8-bit PWM output, event count, pulse width measurement, serial clock output, real-time output control, generation of remote control carrier)
- Clock source ····· 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input
- Interrupt source ····· coincidence with compare register 0

Timer counter 1: 8-bit × 1 (square-wave output, event count, synchronous output event, serial clock output)
- Clock source ····· 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input
- Interrupt source ····· coincidence with compare register 1

Timer counter 0, 1 can be cascade-connected.

Timer counter 2: 8-bit × 1
(square-wave output, PWM output, event count, pulse width measurement, synchronous timer, serial clock output)
- Clock source ····· 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input
- Interrupt source ····· coincidence with compare register 2

Timer counter 0, 1, 2 can be cascade-connected.

Timer counter 3: 8-bit × 1 (square-wave output, event count, serial clock output)
- Clock source ····· 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input
- Interrupt source ····· coincidence with compare register 3

Timer counter 2, 3 can be cascade-connected.

Timer counter 0, 1, 2, 3 can be cascade-connected.

Timer counter 4: 8-bit × 1
(square-wave/8-bit PWM output, event count, pulse width measurement, real-time output control, serial clock output)
- Clock source ····· 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; 1/1 of external clock input frequency
- Interrupt source ····· coincidence with compare register 4

Timer Counter (Continue)

Timer counter 5: 8-bit × 1
(square-wave/8-bit PWM output, event count, pulse width measurement, serial clock output)
- Clock source ····· 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input
- Interrupt source ····· coincidence with compare register 5

Timer counter 4, 5 can be cascade-connected.

Timer counter 6: 8-bit freerun timer
- Clock source ····· 1/1 of system clock frequency; 1/1, 1/128, 1/8192 of OSC oscillation clock frequency; 1/1, 1/128, 1/8192 of XI oscillation clock frequency
- Interrupt source ····· coincidence with compare register 6

Timer counter 7: 16-bit × 1
(square-wave/16-bit PWM output, cycle / duty continuous variable, event count, synchronous output evevt, pulse width measurement, input capture, real-time output control)
- Clock source ····· 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency
- Interrupt source ····· coincidence with compare register 7 (2 lines)

Timer counter 8: 16-bit × 1
(square-wave output, PWM output (duty continuous variable), event count, pulse width measurement, input capture)
- Clock source ····· 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency
- Interrupt source ····· coincidence with compare register 8 (2 lines)

Time base timer (one-minute count setting)
- Clock source ····· 1/1 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency
- Interrupt source ····· 1/128, 1/256, 1/512, 1/1024, 1/8192, 1/32768 of clock source frequency

Watchdog timer
- Interrupt source ····· 1/65536, 1/262144, 1/1048576 of system clock frequency

DMA Controller (Automatic Data Transfer)

Max. Transfer cycles: 255
Starting factor: various types of interrupt, software
Transfer mode: 1-byte transfer, word transfer, burst transfer

Serial Interface

Serial 0: synchronous type / UART (full-duplex) × 1
- Clock source ····· 1/2, 1/4 of system clock frequency; pulse output of timer counter 1, 2; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency

Serial 1: synchronous type / UART (full-duplex) × 1
- Clock source ····· 1/2, 1/4 of system clock frequency; pulse output of timer counter 2, 3; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency

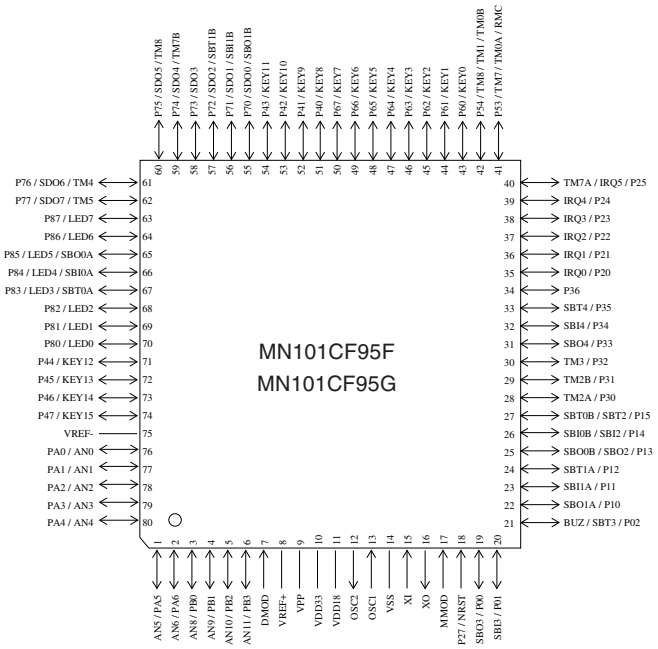
Serial 2: synchronous type / multi-master I^2C × 1
- Clock source ····· 1/2, 1/4 of system clock frequency; pulse output of timer counter 3, 4; 1/2, 1/4, 1/16, 1/32 of OSC oscillation clock frequency

Serial 3: synchronous type / single-master I^2C × 1
- Clock source ····· 1/2, 1/4 of system clock frequency; pulse output of timer counter 4, 5; 1/2, 1/4, 1/16, 1/32 of OSC oscillation clock frequency

Serial 4: synchronous type / UART (full-duplex) × 1
- Clock source ····· 1/2, 1/4 of system clock frequency; pulse output of timer counter 0, 5; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency

I/O Pins	**I/O**	67	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
A/D Inputs		10-bit × 11-ch. (with S/H)	
Special Ports		Buzzer output, remote control carrier signal output, high-current drive port	

Pin Assignment



TQFP080-P-1212D *Lead-free

Support Tool

In-circuit Emulator	PX-ICE101C/D+PX-PRB101C95-TQFP080-P-1212D

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