❑ MN103SJ9 Series

Type	MN103SFJ9D
Internal ROM type	FLASH
ROM (byte)	64K
RAM (byte)	4K
Package (Lead-free)	QFP044-P-1010F
Minimum Instruction Execution Time	16.7 ns (4.5 V to 5.5 V)

■ Interrupts

8 external interrupts

30 internal interrupts: Watchdog timer. Timer. Serial I/F. PWM. A/D conversion finish. System error. Fail-safe function

■ Timer Counter

8-bit timer × 8

Timer 0 to 7 .....Interval timer. Event count. Cascading connectable

16-bit timer × 3

Timer 16 .....Interval timer. Event count. PWM output. Double buffer

Timer 18 .....Interval timer. Event count. PWM output (6 pins simultaneous output are available). Double buffer

Timer 20 .....Interval timer. Double buffer. Start synchronized with 3-phase PWM are available

Watchdog timer × 1

■ Serial interface

UART (full duplex) /Synchronous interfaces selective × 3

Serial 0, 1.....1-bit to 8-bit transmission (synchronous). 2 and 3 channel type selectable (synchronous)

■ I/O Pins

I/O 30 : Common use × 30

■ A/D converter

10-bit × 1 unit. 12-bit × 1 unit. 8 channels

Minimum conversion time: 1.0 µs

Simultaneous conversion of 2 series are available

Conversion start synchronized with 3-phase PWM or timer 20 are available

■ Motor Control PWM

16-bit 3-phase PWM

Triangular waveform or jigsaw waveform. Dead time setup. Double buffer. Output polar switching is available. PWM output pin protect function

■ Clock monitoring function

The stop of the system clock or abnormal frequency of the system clock can be detected

■ Reset

Automatic Reset

■ Internal oscillation

10 MHz

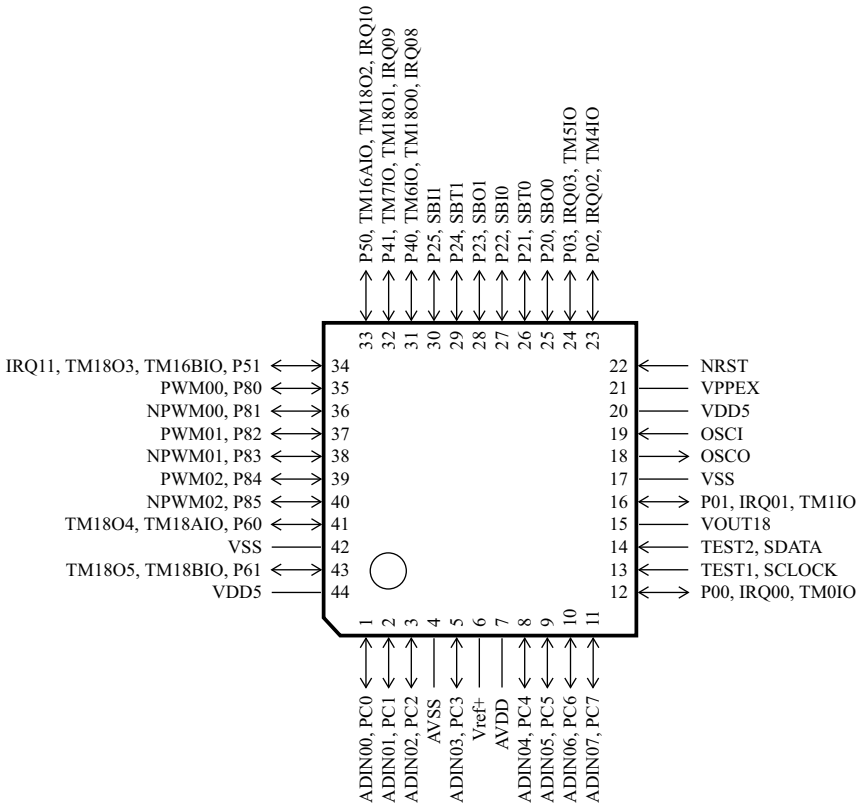
■ Electrical Charactreistics (A/D converter characteristics)

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Non-linear error		10 bit / 12 bit			±3	LSB
A/D conversion time	TAD		1.0			µs
Analog input voltage	VIA		VSS		VDD	V

Ta = 25 °C. VDD = 5.0 V. VSS = 0 V

■ Pin Assignment

QFP044-P-1010F



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