

□ MN103S83D

Type	MN103S83D		
Internal ROM	64K-byte		
Internal RAM	2K-byte		
Package	QFP084-P-1818E *Lead-free, LQFP080-P-1414A *Lead-free		
Minimum Instruction Execution Time	25 ns (at 4.3 V to 5.5 V, 10 MHz internal regulator used) 25 ns (at 3.0 V to 3.6 V, 10 MHz) *at internal 4 times oscillation used)		
Interrupts	<ul style="list-style-type: none"> • 9 external interrupts • 40 internal interrupts (watch dog timer, timer, serial I/F, PWM, A/D, system error) 		
Timer Counter	8-bit timer × 8 Timer 0 to 7: Interval timer, Event counter, Cascading connectable 16-bit timer × 4 Timer 8: Interval timer, Event counter, PWM output (6 pins simultaneous output are available), Double buffer Timer 9, 10: Interval timer, Event counter, PWM output, Double buffer Timer 11: Interval timer, Double buffer, Start synchronized with 3-phase PWM are available Watch dog timer		
Serial Interface	UART (full duplex) / synchronous interfaces selective × 2 Serial 1: 7-bit, 8-bit transmission Serial 2: 1-bit to 8-bit transmission (synchronous), 2 and 3 channel type selectable (synchronous)		
I/O Pins	I/O	50	Exclusive × 5, selective × 45
	Input	10	Selective × 10
A/D Inputs	10-bit × 2 unit, 2 inputs × 2, 6 inputs × 1 Simultaneous conversion of 3 series are available, With S/H, Conversion start synchronized with 3-phase PWM or timer 11 are available		
Motor Control PWM	16-bit 3-phase PWM × 1 Minimum resolution: 50 ns Triangular waveform or jigsaw waveform dead time setup, Double buffer, Output polar switching is available, PWM output pin protect function		
Notes	5 V single power supply (Internal regulator)		

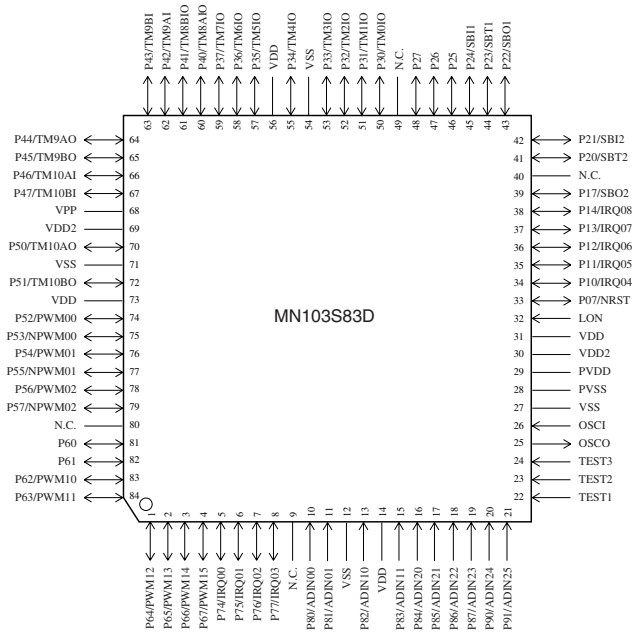
Electrical Characteristics

A/D converter characteristics

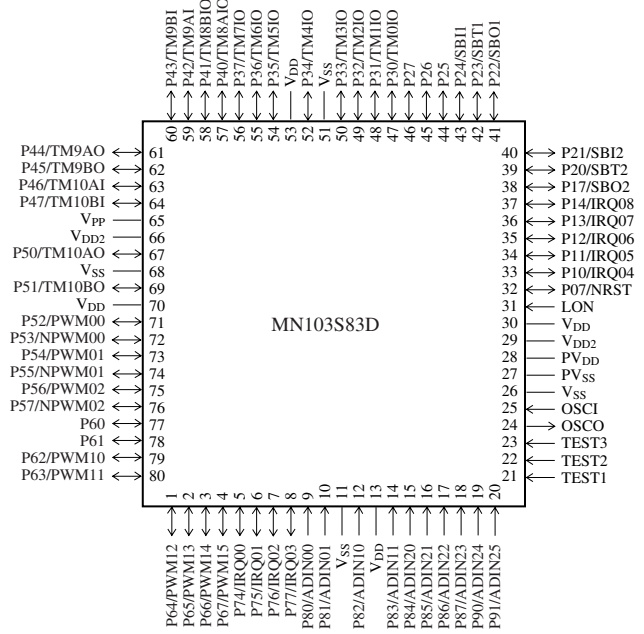
Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Non-linear error		10-bit			±3	LSB
A/D conversion time	tAD		1.5			μs
Analog input voltage	VIA		VSS		VDD	V

(Ta = 25°C, VDD = 5.0 V, VSS = 0 V)

Pin Assignment



QFP084-P-1818E *Lead-free



LQFP080-P-1414A *Lead-free

Support Tool

In-circuit Emulator	PX-ICE-103S65	
Flash Memory Built-in Type	Type	MN103SF65GBF, MN103SF65GAL
	ROM	128K-byte
	RAM	4K-byte
	Minimum instruction execution time	25 ns (at 4.3 V to 5.5 V, 10 MHz internal regulator used) 25 ns (at 3.0 V to 3.6 V, 10 MHz)
	Package	QFP084-P-1818E *Lead-free, LQFP080-P-1414B *Lead-free

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