

MN101C49G / 49K

Type	MN101C49G (under planning) / 49K (under planning)	
ROM (×8-Bit)	128 K / 224 K (External memory can be expanded)	
RAM (×8-Bit)	4 096 / 10 240 (External memory can be expanded)	
Minimum Instruction Execution Time	Standard:	0.10 μs (at 4.5 V to 5.5 V, 20 MHz) 0.25 μs (at 2.7 V to 5.5 V, 8 MHz) 125 μs (at 2.0 V to 5.5 V, 32 kHz)* Double speed: 0.12 μs (at 4.5 V to 5.5 V, 8.38 MHz) 0.25 μs (at 3.0 V to 5.5 V, 4 MHz) 62.5 μs (at 2.0 V to 5.5 V, 32 kHz)* * The lower limit for operation guarantee for EPROM built-in version is 2.7 V.
Interrupts	• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 6 • Time Base • Serial 0 • Serial 1 • Serial 2 • Serial 3 • Automatic Transfer finish • A/D Conversion finish • External 5 • Timer 7 (2 systems) • Key Interrupts (8 lines)	
Timer Counter	Timer Counter 0 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Generation of Remote Control Carrier, Pulse Width Measurement) Clock Source . . . 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt Source . . . Coincidence with Compare Register 0 Timer Counter 1 : 8-Bit × 1 (Square-Wave Output, Event Count, Synchronous Output Event) Clock Source . . . 1/2, 1/8 of System Clock, 1/1, 1/4, 1/16, 1/64, 1/128 of OSC Oscillation 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 × 1 (Square-Wave/8-Bit PWM Output, Event Count, Synchronous Output Event, Pulse Width Measurement) Clock Source . . . 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt Source . . . Coincidence with Compare Register 2 Timer Counter 3 : 8-Bit × 1 (Square-Wave Output, Event Count, Generation of Remote Control Carrier) Clock Source . . . 1/2, 1/8 of System Clock, 1/1, 1/4, 1/16, 1/64, 1/128 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input Interrupt Source . . . Coincidence with Compare Register 3 Timer Counter 2, 3 can be cascade-connected. Timer Counter 4 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Pulse Width Measurement, Serial 1 Baud Rate Timer) Clock Source . . . 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, 1/1 of External Clock Input Interrupt Source . . . Coincidence with Compare Register 4 Timer Counter 6 : 8-Bit Freerun Timer Clock Source . . . 1/1 of System Clock, 1/1, 1/4096, 1/8192 of OSC Oscillation Clock, 1/1, 1/4096, 1/8192 of XI Oscillation Clock Interrupt Source . . . Coincidence with Compare Register 6	

■ Timer Counter (Continue)

Timer Counter 7 : 16-Bit × 1 (Square-Wave/16-Bit PWM Output, Cycle / Duty continuous variable, Event Count, Synchronous Output Event, Pulse Width Measurement, Input Capture)	
Clock Source	1/1, 1/2, 1/4, 1/16 of System Clock, 1/1, 1/2, 1/4, 1/16 of OSC Oscillation Clock, 1/1, 1/2, 1/4, 1/16 of External Clock Input
Interrupt Source	.. Coincidence with Compare Register 7 (2 lines)
Time Base Timer (One-Minute Count Setting)	
Clock Source	.. 1/1 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock
Interrupt Source	1/128, 1/256, 1/512, 1/1024, 1/8192, 1/32768, of Clock Source
Watchdog Timer	
Interrupt Source	1/65536, 1/262144, 1/1048576 of System Clock
DMA Controller (Automatic data transfer)	
Max Transfer Cycles	255
Starting Factor	External Request, Various Types of Interrupt, Software
Transfer Mode	1-Byte Transfer, Word Transfer, Burst Transfer

■ Serial Interface

Serial 0 : 8-Bit × 1 (Synchronous Type/UART[Full-Duplex])	
Clock Source	.. 1/2, 1/4 of System Clock Pulse Output of Timer Counter 2, 4 1/2, 1/4, 1/16, 1/64 of OSC Oscillation Clock
Serial 1 : 8-Bit × 1 (Synchronous Type/Simple UART[Half-Duplex])	
Clock Source	1/2, 1/4 of System Clock Pulse Output of Timer Counter 4 1/2, 1/4, 1/16, 1/64 of OSC Oscillation Clock
Serial 2 : 8-Bit × 1 (Synchronous Type)	
Clock Source	1/2, 1/4 of System Clock Pulse Output of Timer Counter 3 1/2, 1/4, 1/16, 1/32 of OSC Oscillation Clock
Serial 3 : 8-Bit × 1 (Synchronous Type/Simple I ² C)	
Clock Source	1/2, 1/4 of System Clock Pulse Output of Timer Counter 3 1/2, 1/4, 1/16, 1/32 of OSC Oscillation Clock

■ I/O Pins	I/O	73	• Common use • Specified pull-up Resistor available • Input / Output selectable (bit unit)
	Input	15	• Common use • Specified pull-up Resistor available
■ A/D Inputs		10-Bit × 8ch (with S/H)	
■ D/A Inputs		8-Bit × 4ch	
■ Special Ports		Buzzer Output, Remote Control Carrier Signal Output, High-Current Drive Port	
■ Package		QFP100-P-1818B	

■ Electrical Characteristics

Supply Current

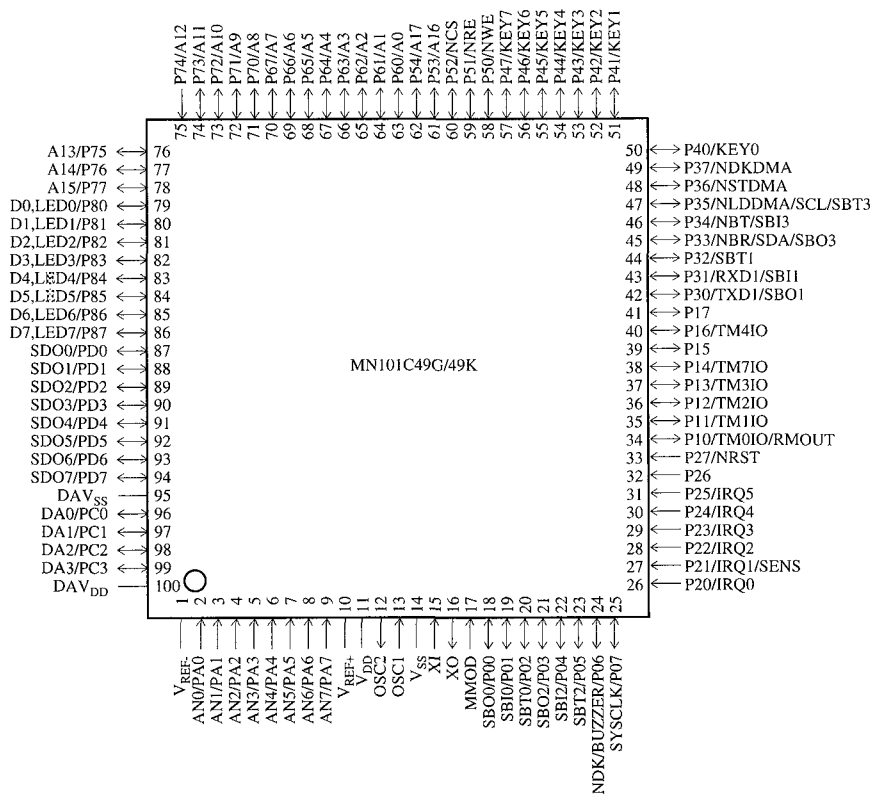
Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc = 20 MHz, VDD = 5 V			60	mA
	IDD2	fosc = 8.39 MHz, VDD = 5 V			25	mA
	IDD3	fx = 32 768 kHz, VDD = 3 V			100	μA
Supply Current at HALT	IDD4	fx = 32 kHz, VDD = 3 V			8	μA
	IDD5	fx = 32 768 kHz, VDD = 3 V, Ta = -40 °C to +85 °C			20	μA
Supply Current at STOP	IDD6	VDD = 5 V, Ta = 25 °C			1	μA
	IDD7	VDD = 5 V, Ta = -40 °C to +85 °C			30	μA

See the next page for support tool and pin assignment.

Support Tool

■ In-Circuit Emulator		PX-ICE101C / D + PX-PRB101C49-C / D		
■ EPROM built-in Type	Type	MN101CP49G (under planning) / 49K (under planning)		
	ROM (× 8-Bit)	128 K / 224 K		
	RAM (× 8-Bit)	4 096 / 10 240		
	Minimum Instruction Execution Time	Standard	0 10 μs (at 4 5 V to 5 5 V, 20 MHz)	
			0 25 μs (at 2 7 V to 5 5 V, 8 MHz)	
		Double speed	0 12 μs (at 4 5 V to 5 5 V, 8 38 MHz)	
		0 25 μs (at 3 0 V to 5 5 V, 4 MHz)		
Package	QFP100-P-1818B			

Pin Assignment



QFP100-P-1818B