

□ MN101C539

Type		MN101C539	
ROM (x8-bit)		24 K (External memory can not be expanded)	
RAM (x8-bit)		0.5 K (External memory can not be expanded)	
Package		TQFP048-P-0707B *Lead-free	
Minimum Instruction Execution Time		High speed mode: 0.10 μs (at 4.5 V to 5.5 V, 20 MHz) 0.238 μs (at 2.7 V to 5.5 V, 8.39 MHz) 1.00 μs (at 2.0 V to 5.5 V, 4 MHz)* Low speed mode: 61.04 μs (at 2.0 V to 5.5 V, 32.768 kHz)* * The lower limit for operation guarantee for EPROM built-in type is 2.7 V.	
Interrupts		• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • Timer 2 • Timer 3 • Timer 6 • Time Base • Serial 0 (2 systems) • A/D conversion finish • Timer 7 (2 systems)	
Timer Counter		<p>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 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</p> <p>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 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</p> <p>Timer counter 2, 3 can be cascade-connected.</p> <p>Timer counter 6 : 8-bit freerun timer Clock source 1/1 of system clock frequency; 1/1, 1/4096, 1/8192 of OSC oscillation clock frequency; 1/1, 1/4096, 1/8192 of XI oscillation clock frequency Interrupt source coincidence with compare register 6</p> <p>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 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)</p> <p>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</p> <p>Watchdog timer Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency</p>	
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 2, 3; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency	
I/O Pins	I/O	36	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
	Input	4	• Common use • Specified pull-up resistor available

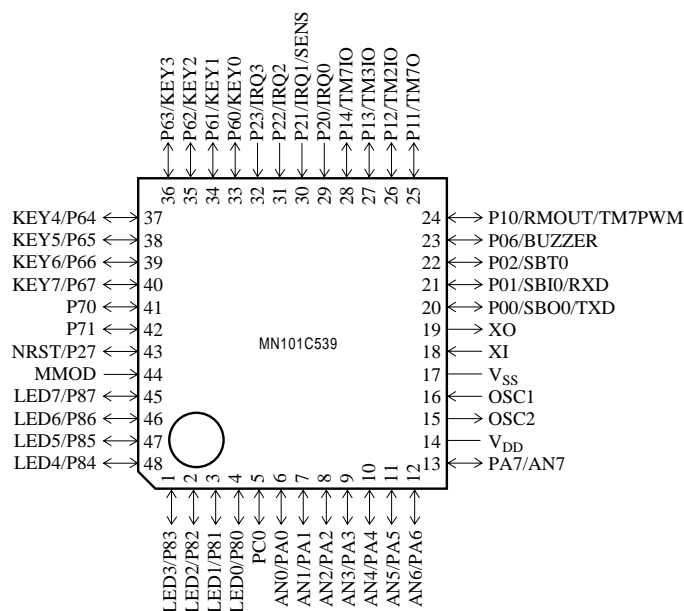
A/D Inputs	10-bit × 8-ch. (with S/H)
Special Ports	Buzzer output, remote control carrier signal output, high-current drive port

Electrical Characteristics

Supply current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating supply current	IDD1	fosc = 20 MHz, VDD = 5 V		20	50	mA
	IDD2	fosc = 8.39 MHz, VDD = 5 V		10	20	mA
	IDD3	fx = 32.768 kHz, VDD = 3 V		20	70	μA
Supply current at HALT	IDD4	fx = 32.768 kHz, VDD = 3 V, Ta = 25°C		2	6	μA
	IDD5	fx = 32.768 kHz, VDD = 3 V, Ta = -40°C to +85°C			15	μA
Supply current at STOP	IDD6	VDD = 5 V, Ta = 25°C			2	μA
		VDD = 5 V, Ta = -40°C to +85°C			20	μA

Pin Assignment



TQFP048-P-0707B *Lead-free

Support Tool

In-circuit Emulator	PX-ICE101C/D+PX-PRB101C53-TQFP048-P-0707B-M	
EPROM Built-in Type	Type	MN101CP539HT
	ROM (× 8-bit)	24 K
	RAM (× 8-bit)	0.5 K
	Minimum instruction execution time	High speed mode: 0.10 μs (at 4.5 V to 5.5 V, 20 MHz) 0.238 μs (at 2.7 V to 5.5 V, 8.39 MHz) 1.00 μs (at 2.7 V to 5.5 V, 4 MHz) Low speed mode: 61.04 μs (at 2.7 V to 5.5 V, 32.768 kHz)
	Package	TQFP048-P-0707B *Lead-free

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