

MN102L490A

Type	MN102L490A
ROM (×8-Bit / ×16-Bit)	External
RAM (×8-Bit / ×16-Bit)	3 K
Minimum Instruction Execution Time	With Main Clock operated: 100 ns (at 4.5 V to 5.5 V, 20 MHz)
Interrupts	<ul style="list-style-type: none"> • RESET • Watchdog • Timer Counter 0 to 5 • Timer Counter 6 to 7 • Timer Counter 6 to 7 Compare Capture A • Timer Counter 6 to 7 Compare Capture B • ATC Transfer finish • External 0 to 4 • Serial ch 0, 1 Transmission • Serial ch 0, 1 Reception • NMI Pin • A/D Conversion finish
Timer Counter	<p>Timer Counter 0 : 8-Bit × 1 (Timer Output, Event Count)</p> <p>Clock Source . . . 1/1, 1/128 of System Clock, 1/4 of Low Speed Clock, External Clock</p> <p>Interrupt Source . . . Underflow of Timer Counter 0</p> <p>Timer Counter 1 : 8-Bit × 1 (Timer Output, Event Count, A/D Conversion Start up)</p> <p>Clock Source . . . System Clock, 1/4 of Low Speed Clock, External Clock, Timer Counter 0 Output</p> <p>Interrupt Source . . . Underflow of Timer Counter 1</p> <p>Timer Counter 2 to 3 : 8-Bit × 1 (Timer Output, Event Count, UART Baud Rate Generator)</p> <p>Clock Source . . . System Clock, External Clock, Timer Counter 0 Output, Timer Counter 1, 2 Output</p> <p>Interrupt Source . . . Underflow of Timer Counter 2, 3</p> <p>Timer Counter 4, 5 : 8-Bit × 1 (Timer Output, Event Count)</p> <p>Clock Source . . . 1/4 of Low Speed Clock, External Clock, Timer Counter 0 Output, Timer Counter 3, 4 Output</p> <p>Interrupt Source . . . Underflow of Timer Counter 4, 5</p> <p>Timer Counter 6, 7 : 16-Bit × 1 (Timer Output, Event Count, Input Capture, Output Compare, PWM Output, 2-Phase Encoder Input)</p> <p>Clock Source . . . System Clock, External Clock, Timer Counter 4, 5 Output</p> <p>Interrupt Source . . . Coincidence with Compare Capture A or at Capture, Coincidence with Compare Capture B or at Capture, Underflow of Timer Counter 6, 7</p> <p style="text-align: center;">Connectable . . . Timer Counter 0 to 5</p>
Serial Interface	<p>Serial 0 : 7, 8-Bit × 1 (Common use with UART, Transfer direction of MSB/LSB selectable)</p> <p>Clock Source . . . 1/16 of Timer Counter 2, 1/16 of Timer Counter 3, External Clock, 1/2 of Timer Counter 2</p> <p>Serial 1 : 7, 8-Bit × 1 (Common use with UART, Transfer direction of MSB/LSB selectable)</p> <p>Clock Source . . . 1/16 of Timer Counter 2, 1/16 of Timer Counter 3, External Clock, 1/2 of Timer Counter 3</p> <p>UART × 2 (Common use with Serial 0, 1)</p> <p>I²C × 2 (Single master)</p>
I/O Pins I/O	48 • Common use 8 (by 4-Bit), 40 (by-bit)
A/D Inputs	8-Bit × 8ch (with S/H)
PWM	16-Bit × 2ch

Notes	<ul style="list-style-type: none"> • Burst ROM interface support, ATC (between serial 0ch and internal RAM) support • Main pin inputs TTL level
Package	LQFP100-P-1414
Electrical Characteristics	

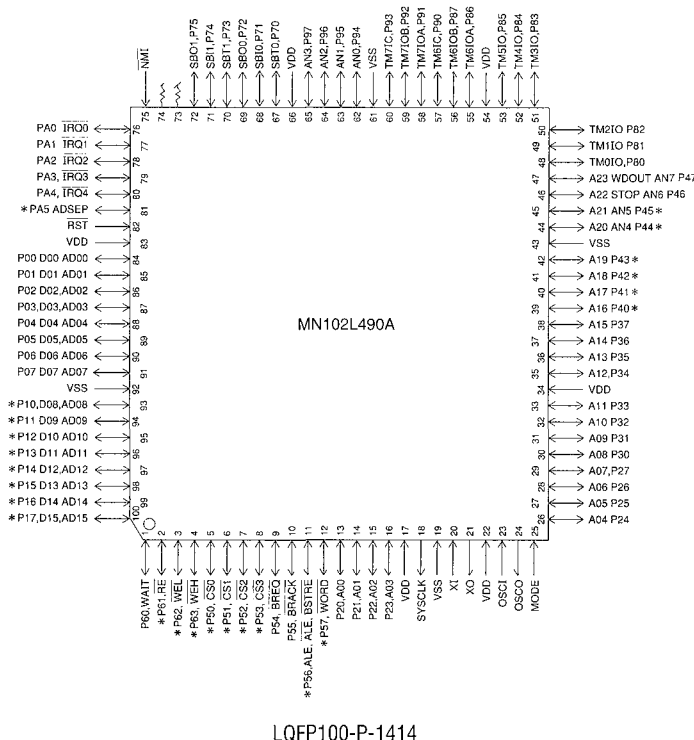
A/D Characteristics (at VDD = 5 V)

Parameter	Symbol	Condition	Limit			Unit	
			min	typ	max		
A/D Conversion Relative Error		VDD = 5 V, VSS = 0 V	ch0 to 3			±3	LSB
				ch4 to 7			
A/D Conversion Time			4	8		µs	
Analog Input Voltage	VIA		VSS		VDD	V	

(Ta = 25 °C, VDD = 5.0 V, VSS = 0 V)

Support Tool

In-Circuit Emulator	PX-ICE102L00 + PX-PRB102L49
Pin Assignment	



* Use of these ports are disabled