

MN150222

Type		MN150222																		
ROM (x8-bit)		2K																		
RAM (x4-bit)		96																		
Number of Instructions		51																		
Minimum Instruction Execution Time		1.0µs at 1/8 frequency dividing (at 4.5 to 5.5V, 8MHz) 4.0µs at 1/8 frequency dividing (at 2.0 to 5.5V, 2MHz) 8.0µs at 1/8 frequency dividing (at 1.8 to 5.5V, 1MHz)																		
Interrupts		• Reset • External																		
Timer Counter		Timer Counter : 8-bit x 1 (Event Count, Timer Output) Clock Source . . . System Clock, 1/16384 of OSC Oscillation Clock, TCI Input Interrupt Source Overflow of Timer Counter Time Base Counter : 1 Clock Source 1/1 of OSC Oscillation Clock Interrupt Source Overflow of Time Base Counter Watchdog Timer (Mask Option)																		
		<table><tr><td></td><td colspan="4">Time Base Output</td></tr><tr><td>fosc=8MHz</td><td>2kHz</td><td>4kHz</td><td>8kHz</td><td>16kHz</td></tr><tr><td>fosc=1MHz</td><td>0.25kHz</td><td>0.5kHz</td><td>1kHz</td><td>2kHz</td></tr></table>					Time Base Output				fosc=8MHz	2kHz	4kHz	8kHz	16kHz	fosc=1MHz	0.25kHz	0.5kHz	1kHz	2kHz
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I/O Pins	I/O	15	• Common use 7 • Specified pull-up Resistor available . 11 (Mask Option) • Specified output architecture available Nch Open drain / Push-pull 11 (Mask Option) • 4ch LED direct drive available (20mA / 2.0V)																	

Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc=8MHz		4.0	8.0	mA
	IDD2	fosc=32.768kHz		30	60	µA
Supply Current at HALT	IDD3	fosc=32.768kHz		15	30	µA
Supply Current at STOP	IDD4			0.5	5.0	µA
Auto reset current consumption	IDD5			30	80	µA

(Ta= -40 to +85°C, VDD=5.0V, VSS=0V)

A/D Converter Characteristics

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
A/D Conversion Relative Error					±3	LSB
A/D Conversion Time		fosc=8MHz		15	27	µs
Analog Input Voltage	VIA		VSS		VDD	V

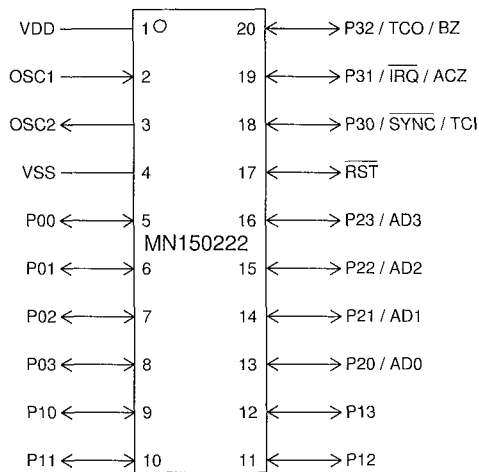
(Ta= -40 to +85°C, VDD=5.0V, VSS=0V)

A/D Inputs	10-bit x 4ch (with S/H)
Zero-cross Inputs	1
Special Ports	Buzzer Output (1kHz, 2kHz, 4kHz fosc=at 4MHz)
Notes	Auto-reset circuit selectable (Mask option)
Package	SOP020-P-0300, SDIP022-P-0300

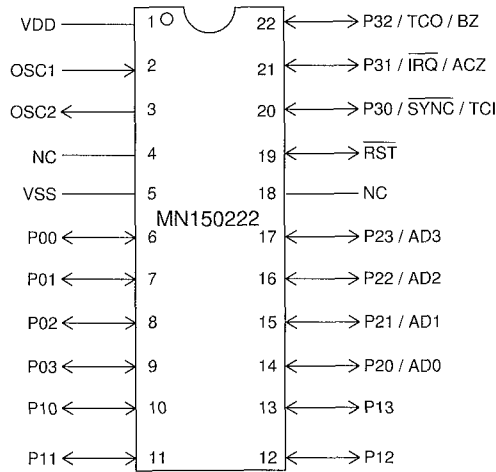
Support Tool

In-Circuit Emulator	PX-ICE1500 + PX-PRB150222
EPROM built-in Type	Type MN15P0222
	ROM (x 8-bit) 2K
	RAM (x 4-bit) 96
	Minimum Instruction Execution Time 1 0μs (at 4.5 to 5.5V, 8MHz) 4 0μs (at 2.35 to 5.5V, 2MHz)
	Package SOP020-P-0300, SDIP022-P-0300

Pin Assignment



SOP020-P-0300



SDIP022-P-0300

※ P00 to P03 : High current output port
NC : Nothing connected with pin