❑ MN150222

Type	**MN150222**
ROM (×8-Bit)	2 K
RAM (×4-Bit)	96
Number of Instructions	51
Minimum Instruction Execution Time	**1.0 µs at 1/8 frequency dividing (at 4.5 V to 5.5 V, 8 MHz)** **4.0 µs at 1/8 frequency dividing (at 2.0 V to 5.5 V, 2 MHz)** **8.0 µs at 1/8 frequency dividing (at 1.8 V to 5.5 V, 1 MHz)**
Interrupts	• Reset • External
Timer Counter	**Timer Counter : 8-Bit × 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)**

	Time Base Output			
fosc = 8 MHz	2 kHz	4 kHz	8 kHz	16 kHz
fosc = 1 MHz	0 25 kHz	0 5 kHz	1 kHz	2 kHz

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 (20 mA / 2 0 V)

Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
Operating Supply Current	IDD1	fosc = 8 MHz		4 0	8 0	mA
	IDD2	fosc = 32 768 kHz		30	60	µA
Supply Current at HALT	IDD3	fosc = 32 768 kHz		15	30	µA
Supply Current at STOP	IDD4			0 5	5 0	µA
Auto reset current consumption	IDD5			30	80	µA

(Ta = –40 °C to +85 °C, VDD = 5.0 V, VSS = 0 V)

A/D Converter Characteristics

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

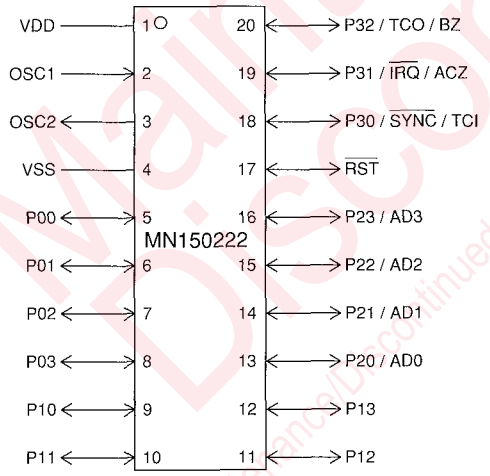
(Ta = –40 °C to +85 °C, VDD = 5.0 V, VSS = 0 V)

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

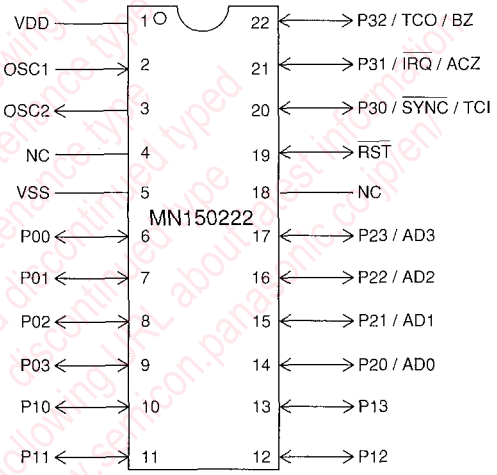
Support Tool

In-Circuit Emulator	PX-ICE1500 + PX-PRB150222	
EPROM built-in Type	**Type**	MN15P0222
	ROM (× 8-Bit)	2 K
	RAM (× 4-Bit)	96
	Minimum Instruction Execution Time	1 0 µs (at 4 5 V to 5.5 V, 8 MHz) 4 0 µs (at 2 35 V to 5 5 V, 2 MHz)
	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

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