M5M231000-XXXP

1048576-BIT (131072-WORD BY 8-BIT) MASK-PROGRAMMABLE ROM

PRELIMINARY

Notice: This is not a final specification.
Some parametric limits are subject to change.

DESCRIPTION

The Mitsubishi M5M231000-XXXP is 1048576-bit mask-programmable high speed read-only memory.

The M5M231000-XXXP is fabricated by N-channel polysilicon gate technology and available in a 28-pin DIL package.

The XXX in type code is a three-digit decimal number assigned by Mitsubishi to identify the customer's specification to which the ROM has been programmed.

FEATURES

- 131072 word x 8-bit organization
- Access time . . . . –25 250ns (max)
  . . . . –30 300ns (max)
- ONE line control $\overline{CE}$
- Low power supply current (I_{CC}) Active . . 80mA (max)
  Standby . 30mA (max)
- Single 5V power supply
- 3-state output buffer
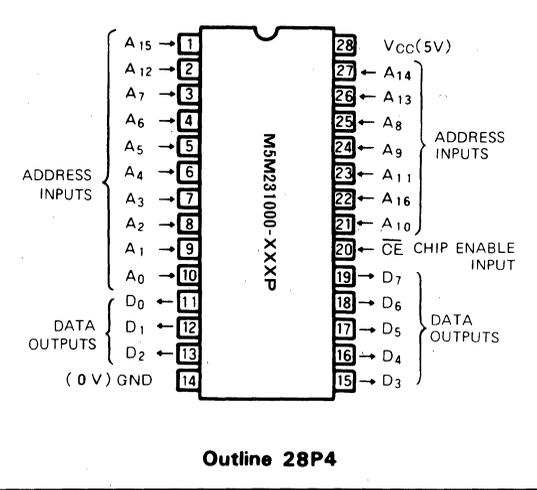- Input and output TTL-compatible
- Standard 28-pin DIL package

FUNCTION

Set the CE terminals to the read mode (low level.)

Low level input to $\overline{CE}$ and address signals to the address inputs ($A_0 \sim A_{16}$) make the data contents of the designated address location available at the data output ($D_0 \sim D_7$).
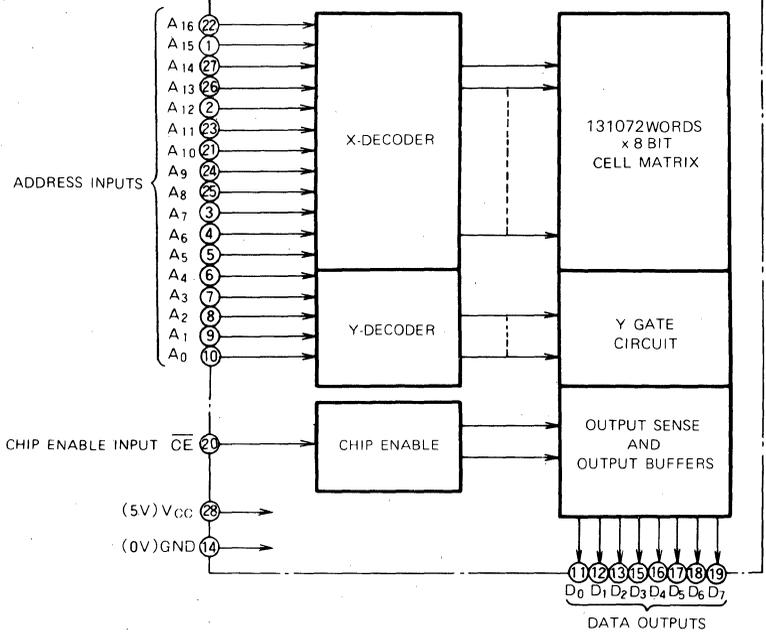
When the $\overline{CE}$ signal is high, data output are in a floating state and the device is in the standby mode or power-down mode.

PIN CONFIGURATION (TOP VIEW)

Outline 28P4

BLOCK DIAGRAM

MITSUBISHI ELECTRIC

1048576-BIT (131072-WORD BY 8-BIT) MASK-PROGRAMMABLE ROM

ABSOLUTE MAXIMUM RATINGS*

Temperature under bias . . . . $-10°C \sim +80°C$
Storage temperature . . . . $-65°C \sim +150°C$
All input or output voltage** . . . . $-0.6V \sim +7V$

COMMENT

* Stresses above those listed may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or at any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods affects device reliability.
** With respect to Ground.

D.C. ELECTRICAL CHARACTERISTICS ($T_a = 0 \sim 70°C$, $V_{CC} = 5V \pm 10\%$, unless otherwise noted)

Symbol	Parameter	Conditions	Limits			Unit
			Min	Typ	Max	
I_{LI}	Input leakage current	$V_{IN} = 5.5V$	-10		10	μA
I_{LO}	Output leakage current	$V_{OUT} = 5.5V$	-10		10	μA
I_{CC1}	V_{CC} current standby	$\overline{CE} = V_{IH}$		15	30	mA
I_{CC2}	V_{CC} current active	$\overline{CE} = V_{IL}$		40	80	mA
V_{IL}	Input low voltage		-0.1		0.8	V
V_{IH}	Input high voltage		2.0		$V_{CC}+1$	V
V_{OL}	Output low voltage	$I_{OL} = 2.1mA$			0.45	V
V_{OH}	Output high voltage	$I_{OH} = -400\mu A$	2.4			V

A.C. ELECTRICAL CHARACTERISTICS ($T_a = 0 \sim 70°C$, $V_{CC} = 5V \pm 10\%$, unless otherwise noted)

Symbol	Parameter	Conditions	Limits−25		Limits−30		Unit
			Min	Max	Min	Max	
$t_{a(AD)}$	Address to output delay	$\overline{CE} = V_{IL}$		250		300	ns
$t_{a(\overline{CE})}$	$\overline{CE}$ to output delay			250		300	ns
t_{DF}	Output enable high to output float	$\overline{CE} = V_{IL}$	0	80	0	100	ns
t_{OH}	Output hold from $\overline{CE}$	$\overline{CE} = V_{IL}$	0		0		ns

A.C. WAVEFORMS
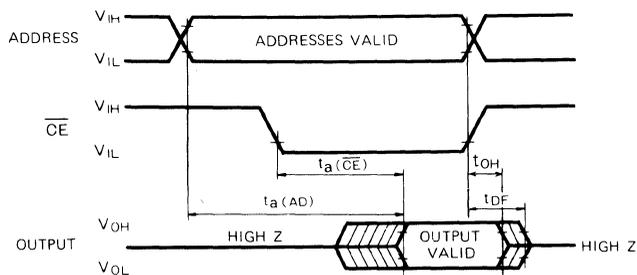
Test Conditions for A.C. Characteristics

Input voltage: $V_{IL} = 0.45V$, $V_{IH} = 2.4V$
Input rise and fall times: $\leq 20ns$
Reference voltage at timing measurement: Inputs 1V and 2V
Outputs 0.8V and 2V
Output load: 1 TTL gate, $C_L = 100pF$

CAPACITANCE ($T_a = 25°C$, $f = 1MHz$)

Symbol	Parameter	Conditions	Limits		Unit
			Min	Max	
C_{IN}	Input capacitance	$V_{IN} = 0V$		10	pF
C_{OUT}	Output capacitance	$V_{OUT} = 0V$		15	pF

MITSUBISHI ELECTRIC