

LH231000B

NMOS 1M (128K × 8) Mask Programmable ROM

FEATURES

- 131,072 × 8 bit organization
- Access time: 200 ns (MAX.)
- Power consumption:
Operating: 550 mW (MAX.)
- Programmable OE/ $\overline{\text{OE}}$
- Fully static operation
- TTL compatible I/O
- Three-state outputs
- Single +5 V power supply
- Package:
28-pin, 600-mil DIP
- Mask ROM specific pinout

DESCRIPTION

The LH231000B is a mask programmable ROM organized as 131,072 × 8 bits. It is fabricated using silicon-gate NMOS process technology.

PIN CONNECTIONS

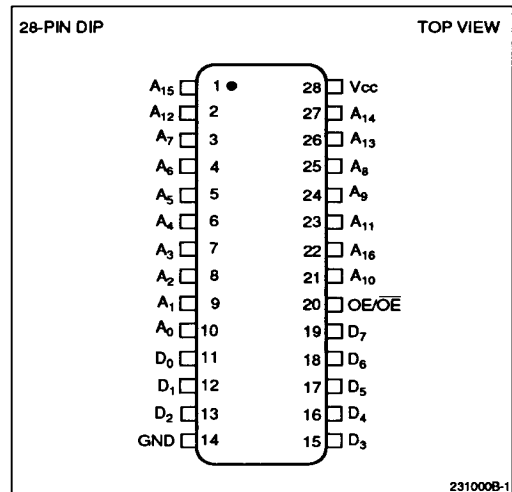
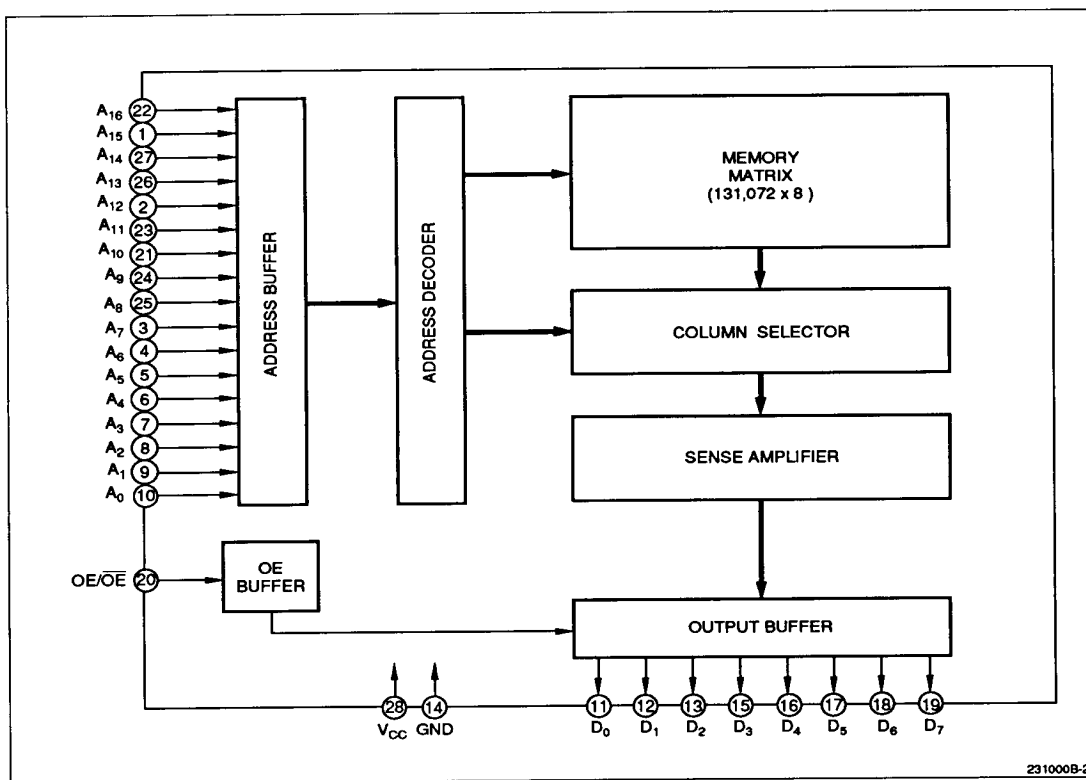


Figure 1. Pin Connections for DIP Package



PIN DESCRIPTION

SIGNAL	PIN NAME	NOTE
A ₀ - A ₁₆	Address input	
D ₀ - D ₇	Data output	
$\overline{CE}/OE/\overline{OE}$	Chip enable or Output enable input	1

SIGNAL	PIN NAME	NOTE
V _{CC}	Power supply (+5 V)	
GND	Ground	

NOTE:

1. The $\overline{CE}/OE/\overline{OE}$ function is mask programmable.

TRUTH TABLE

OE/WE	MODE	D ₀ - D ₇	SUPPLY CURRENT
L/H	Non selected	High-Z	Operating (I _{CC})
H/L	Selected	Dout	Operating (I _{CC})

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT	NOTE
Supply voltage	V _{CC}	-0.3 to +7.0	V	1
Input voltage	V _{IN}	-0.3 to +7.0	V	
Output voltage	V _{OUT}	-0.3 to +7.0	V	
Operating temperature	T _{opr}	0 to +70	°C	
Storage temperature	T _{stg}	-55 to +150	°C	

NOTE:

1. The maximum applicable voltage on any pin with respect to GND.

RECOMMENDED OPERATING CONDITIONS (T_A = 0 to +70°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply voltage	V _{CC}	4.5	5	5.5	V

DC CHARACTERISTICS (V_{CC} = 5 V ± 10%, T_A = 0 to +70°C)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	NOTE
Input "Low" voltage	V _{IL}		-0.3		0.8	V	
Input "High" voltage	V _{IH}		2.2		V _{CC} + 0.3	V	
Output "Low" voltage	V _{OL}	I _{OL} = 1.6 mA			0.4	V	
Output "High" voltage	V _{OH}	I _{OH} = -400 μA	2.4			V	
Input leakage current	I _{LI}	V _{IN} = 0 to V _{CC}			10	μA	
Output leakage current	I _{LO}	V _{OUT} = 0 to V _{CC}			10	μA	1
Current consumption	Operating	I _{CC}	t _{RC} = t _{RC} (MIN.)		100	mA	2

NOTES:

1. $\overline{OE} = V_{IH}$ or $OE = V_{IL}$
2. V_{IN} = V_{IH}/V_{IL}, outputs open

AC CHARACTERISTICS (V_{CC} = 5 V ± 10%, T_A = 0 to +70°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
Read cycle time	t _{RC}	200			ns	
Access time	t _{AA}			200	ns	
Output enable time	t _{OE}			80	ns	
Output floating time	t _{OHZ}			80	ns	1
Output hold time	t _{OH}	10			ns	

NOTE:

1. This is the time required for the output to become high-impedance.

AC TEST CONDITIONS

PARAMETER	RATING
Input voltage amplitude	0.6 V to 2.4 V
Input rise/fall time	10 ns
Input reference level	1.5 V
Output reference level	0.8 V and 2.2 V
Output load condition	1TTL +100 pF

CAPACITANCE ($V_{CC} = 5\text{ V} \pm 10\%$, $f = 1\text{ MHz}$, $T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Input capacitance	C_{IN}			8	pF
Output capacitance	C_{OUT}			12	pF

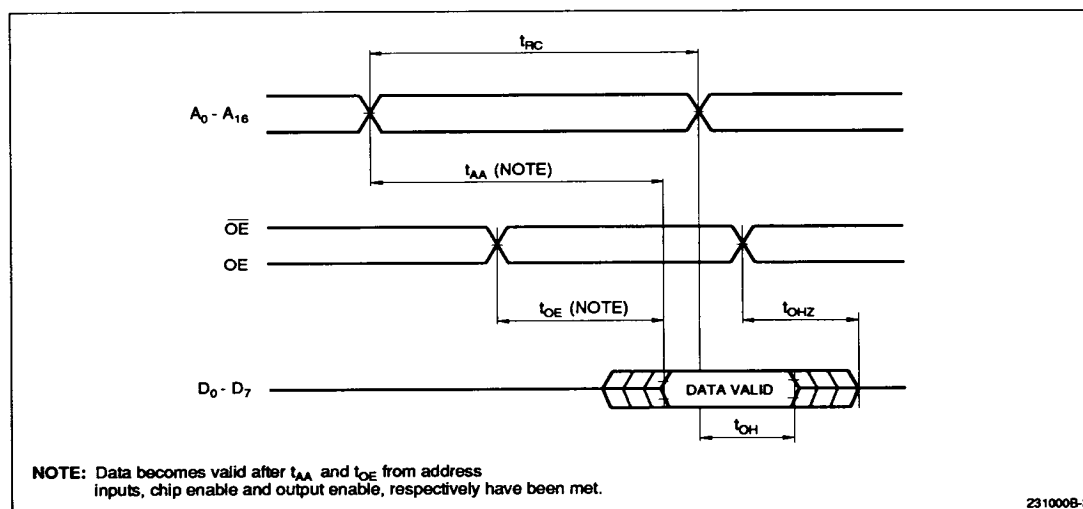


Figure 3. Timing Diagram

ORDERING INFORMATION

LH231000B	D	- ##	
Device Type	Package	Speed	
		20 200	Access Time (ns)
			28-pin, 600-mil DIP (DIP28-P-600)
			NMOS 1M (128K x 8) Mask Programmable ROM

Example: LH231000BD-20 (NMOS 1M (128K x 8) Mask Programmable ROM, 200 ns, 28-pin, 600-mil DIP)

231000B-4