

HN62318B Series

HN62328B Series

8M (1M x 8-bit) Mask ROM

DESCRIPTION

The Hitachi HN62318B/HN62328B Series is an 8-Megabit CMOS Mask Programmable Read Only Memory organized as 1,048,576 x 8-bit.

The low power consumption of this device makes it ideal for battery powered, portable systems. In addition, the high density and high speed provide enough capacity and high performance to be used as a character generator in laser printers.

Hitachi's HN62318B/HN62328B is offered with JEDEC-standard pinouts in 32-pin Plastic DIP and 32-lead Plastic SOP and TSOP packages.

FEATURES

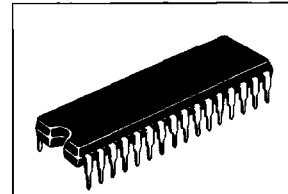
- Single Power Supply:
 $V_{CC} = 5V \pm 10\%$
- Fast Access Time:
 150 ns/200 ns (Max)
- Low Power Consumption:
 Active Current: 100 mW (typ)
 Standby Current: 5 μ W (typ)
- Byte-Wide Data Organization
- TTL-Compatible Inputs and Outputs
- Three-State Data Outputs
- Packages:
 32-pin Plastic DIP
 32-lead Plastic SOP
 32-lead Plastic TSOP (Type II)

ORDERING INFORMATION

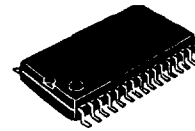
Type No.	Access Time	Package
HN62318BP	150 ns/200 ns	32-pin Plastic DIP
HN62328BP	150 ns/200 ns	(DP-32)
HN62318BF	150 ns/200 ns	32-lead Plastic SOP
HN62328BF	150 ns/200 ns	(FP-32D)
HN62318BTT	150 ns/200 ns	32-lead Plastic TSOP
HN62328BTT	150 ns/200 ns	(TTP-32D)

PIN DESCRIPTION

Pin Name	Function
$A_0 - A_{19}$	Address
$D_0 - D_7$	Input/Output
\overline{CE}	Chip Enable
\overline{OE}	Output Enable
V_{CC}	Power Supply
V_{SS}	Ground
NC	No Connection



(DP-32)

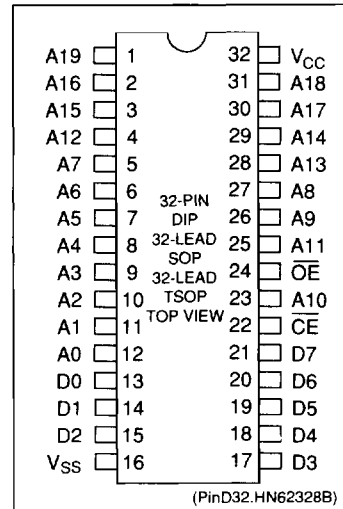


(FP-32D)



(TTP-32D)

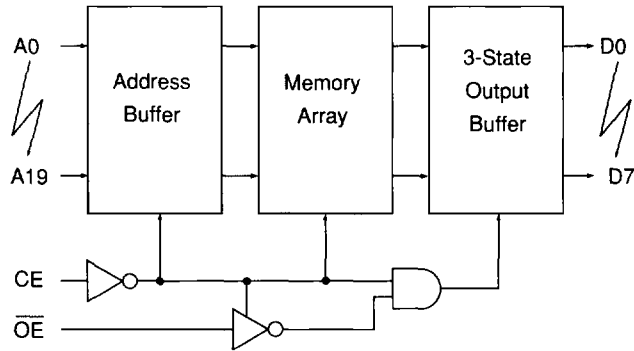
PIN ARRANGEMENT



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■ BLOCK DIAGRAM



(BD.HN62328B)

■ ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Value	Unit
Supply Voltage ¹	V_{CC}	-0.3 to +7.0	V
Terminal Voltage ¹	V_T	-0.3 to $V_{CC} + 0.3$	V
Operating Temperature Range	T_{OPR}	0 to +70	°C
Storage Temperature Range	T_{STG}	-55 to +125	°C
Temperature Under Bias	T_{BIAS}	-20 to +85	°C

Notes: 1. With respect to V_{SS} .

■ CAPACITANCE

($V_{CC} = 5V \pm 10\%$, $V_{SS} = 0V$, $T_a = 25^\circ C$, $V_{IN} = 0V$, $f = 1MHz$)

Item	Symbol	Min.	Max.	Unit
Input Capacitance ¹	C_{IN}	-	15	pF
Output Capacitance ¹	C_{OUT}	-	15	pF

Notes: 1. This parameter is sampled and not 100% tested.

■ DC ELECTRICAL CHARACTERISTICS FOR READ OPERATION

($V_{CC} = 5V \pm 10\%$, $V_{SS} = 0V$, $T_a = 0$ to $70^\circ C$)

Item	Symbol	Min.	Max.	Unit	Test Condition
Input Leakage Current	I_{IL}	-	10	μA	$V_{IN} = 0$ to V_{CC}
Output Leakage Current	I_{OL}	-	10	μA	$\overline{CE} = 2.2V$, $V_{OUT} = 0$ to V_{CC}
Operating V_{CC} Current	I_{CC}	-	50	mA	$V_{CC} = 5.5V$, $I_{DOUT} = 0mA$, $t_{RC} = Min.$
Standby V_{CC} Current	I_{SB}	-	30	μA	$V_{CC} = 5.5V$, $\overline{CE} \geq V_{CC} - 0.2V$
Input Voltage	V_{IH}	2.2	$V_{CC} + 0.3$	V	
	V_{IL}	-0.3	0.8	V	
Output Voltage	V_{OH}	2.4	-	V	$I_{OH} = -205 \mu A$
	V_{OL}	-	0.4	V	$I_{OL} = 1.6mA$

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AC ELECTRICAL CHARACTERISTICS FOR READ OPERATION

($V_{CC} = 5V \pm 10\%$, $V_{SS} = 0V$, $T_a = 0$ to $70^\circ C$)

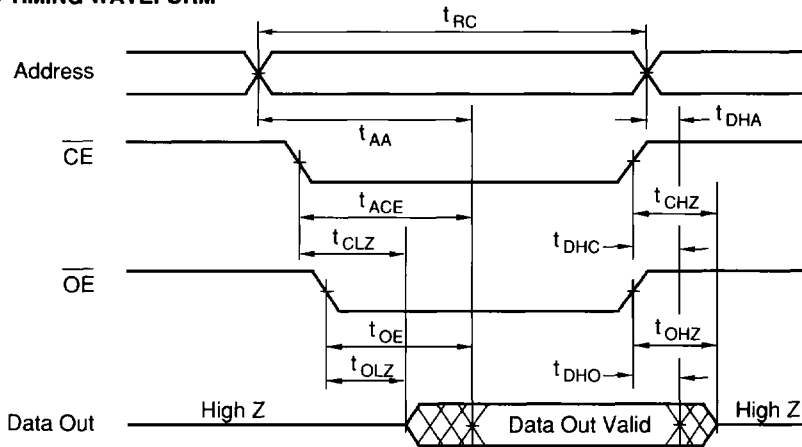
Test Conditions

- Input pulse levels: 0.8 V / 2.4 V
- Input rise and fall times: ≤ 10 ns
- Output load: 1 TTL Gate + CL = 100 pF (Including jig capacitance)
- Input/Output Timing Reference level: 1.5 V

Item	Symbol	HN62318B		HN62328B		Unit
		Min.	Max.	Min.	Max.	
Read Cycle Time	t_{RC}	150	-	200	-	ns
Address Access Time	t_{AA}	-	150	-	200	ns
\overline{CE} Access Time	t_{ACE}	-	150	-	200	ns
\overline{OE} Access Time	t_{OE}	-	70	-	100	ns
Output Hold Time from Address Change	t_{DHA}	0	-	0	-	ns
Output Hold Time from \overline{CE}	t_{DHC}	0	-	0	-	ns
Output Hold Time from \overline{OE}	t_{DHO}	0	-	0	-	ns
\overline{CE} to Output in High Z	t_{CHZ}^1	-	70	-	70	ns
\overline{OE} to Output in High Z	t_{OHZ}^1	-	70	-	70	ns
\overline{CE} to Output in Low Z	t_{CLZ}	10	-	10	-	ns
\overline{OE} to Output in Low Z	t_{OLZ}	10	-	10	-	ns

Note: 1. t_{CHZ}^1 and t_{OHZ}^1 define the time at which the output becomes an open circuit and are not referenced to output voltage levels.

READ TIMING WAVEFORM



(TD.R.HN62328B)

- Note:
1. t_{DHA} , t_{DHC} , t_{DHO} are determined by the faster time.
 2. t_{AA} , t_{ACE} , t_{OE} are determined by the slower time.
 3. t_{CLZ} , t_{OLZ} are determined by the slower time.

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