

# 64K-bit TTL bipolar PROM (8192 x 8)

# 82HS641A/B

## FEATURES

- Address access time:  
82HS641A = 55ns max  
82HS641B = 45ns max
- Input loading: -100µA max
- One chip enable input
- On-chip address decoding
- No separate fusing pins
- Unprogrammed outputs are High level
- Fully TTL compatible
- Outputs: 3-State

- Random logic
- Code conversion

## DESCRIPTION

The 82HS641 is field programmable which means that custom patterns are immediately available by following the Philips Generic II fusing Procedure. The 82HS641 is supplied with all outputs at a logical High. Outputs are programmed to a logic low level at any specified address by fusing the vertical junction matrix.

This device includes on-chip address decoding with 1 chip enable input for ease of memory expansion. It features 3-State outputs for optimization of word expansion in bused applications.

## APPLICATIONS

- Prototyping/volume production
- Sequential controllers
- Microprogramming
- Hardwired algorithms
- Control store

## ORDERING INFORMATION

DESCRIPTION	ORDER CODE	PACKAGE DESIGNATOR*
24-pin Ceramic DIP (600 mil wide)	82HS641A/BJA 82HS641B/BJA	GDIP1-T24
28-pin Ceramic LLCC	82HS641A/B3A 82HS641B/B3A	GDFF2-F28

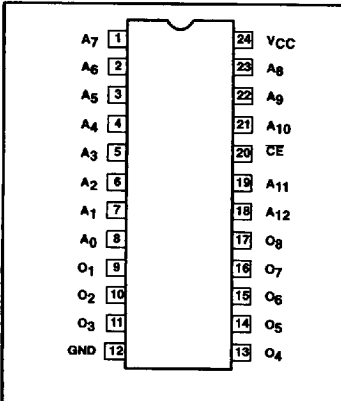
\* MIL-STD 1835 or Appendix A of 1995 Military Data Handbook

## ABSOLUTE MAXIMUM RATINGS

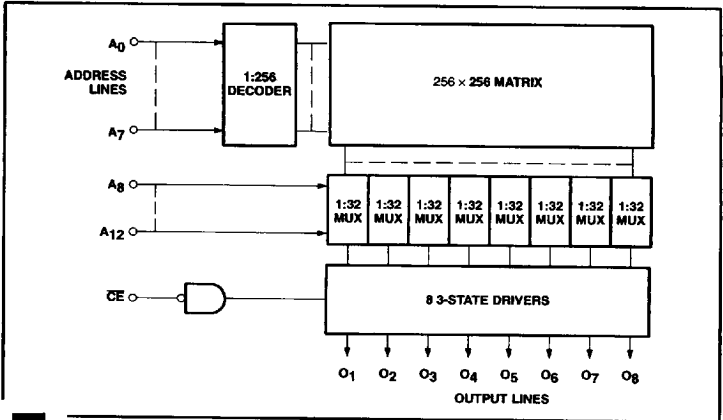
SYMBOL	PARAMETER	RATING	UNIT
V <sub>CC</sub>	Power supply voltage	+7	V <sub>DC</sub>
V <sub>IN</sub>	Input voltage	+5.5	V <sub>DC</sub>
V <sub>O</sub>	Output voltage Off-State	+5.5	V <sub>DC</sub>
T <sub>A</sub>	Operating temperature range	-55 to +125	°C
T <sub>STG</sub>	Storage temperature range	-65 to +150	°C

**NOTE:** Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operation sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## PIN CONFIGURATION



## BLOCK DIAGRAM



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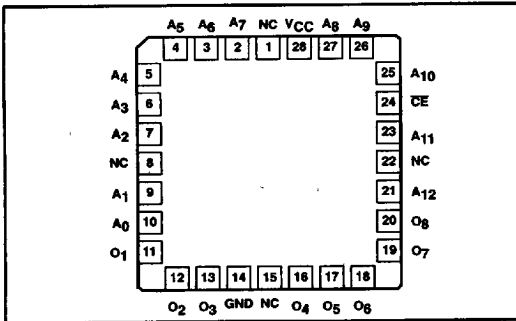
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LLCC LEAD CONFIGURATION



DC ELECTRICAL CHARACTERISTICS  $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ ,  $4.5\text{V} \leq V_{CC} \leq 5.5\text{V}$

SYMBOL	PARAMETER	TEST CONDITIONS <sup>1,2</sup>	LIMITS			UNIT	
			Min	Typ <sup>5</sup>	Max		
<b>Input voltage</b>							
$V_{IL}$	Low <sup>3</sup>	$V_{CC} = 4.5\text{V}$ , $I_I = 18\text{mA}$	2.0	-0.8	0.8	V	
$V_{IH}$	High <sup>3</sup>					V	
$V_{IK}$	Clamp					V	
<b>Output voltage</b>							
$V_{OL}$	Low	$V_{CC} = 4.5\text{V}$ , CE = Low $I_O = 16\text{mA}$ $I_O = -2\text{mA}$	2.4		0.5	V	
$V_{OH}$	High					V	
<b>Input current</b>							
$I_{IL}$	Low	$V_{CC} = 5.5\text{V}$ $V_I = 0.45\text{V}$ $V_I = 5.5\text{V}$			-100	$\mu\text{A}$	
$I_{IH}$	High					$\mu\text{A}$	
<b>Output current</b>							
$I_{OZ}$	Hi-Z State	$V_{CC} = 5.5\text{V}$ CE = High, $V_O = 0.5\text{V}$ CE = High, $V_O = 5.5\text{V}$ CE = Low, $V_O = 0\text{V}$	-15		-40	$\mu\text{A}$	
$I_{OS}$	Short circuit <sup>4</sup>					+40	$\mu\text{A}$
						-85	mA
<b>Supply current</b>							
$I_{CC}$		CE = High, $V_{CC} = 5.5\text{V}$		130	185 <sup>7</sup>	mA	
<b>Capacitance<sup>7</sup></b>							
$C_{IN}$	Input	CE = High, $V_{CC} = 5.0\text{V}$ $V_I = 2.0\text{V}$ $V_O = 2.0\text{V}$			5	10	
$C_{OUT}$	Output					8	13

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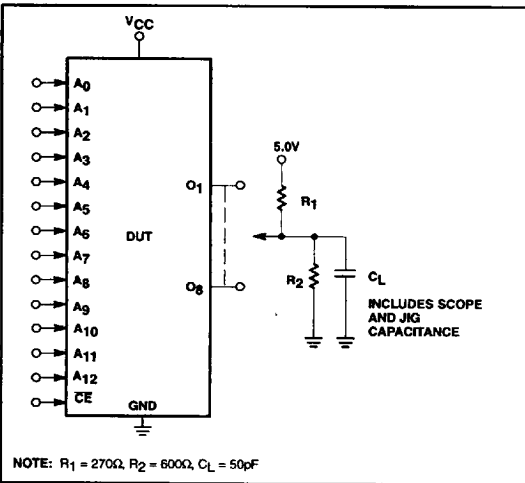
AC ELECTRICAL CHARACTERISTICS -55°C ≤ T<sub>A</sub> ≤ +125°C, 4.5V ≤ V<sub>CC</sub> ≤ 5.5V

SYMBOL	PARAMETER	TO	FROM	82HS641A			82HS641B			UNIT
				Min	Typ <sup>5</sup>	Max	Min	Typ <sup>5</sup>	Max	
t <sub>AA</sub>	Access time <sup>6</sup>	Output	Address		40	55		40	45	ns
t <sub>CE</sub>	Access time <sup>6</sup>	Output	Chip enable		25	35		25	25	ns
t <sub>CD</sub>	Disable time	Output	Chip disable		25	35		25	25	ns

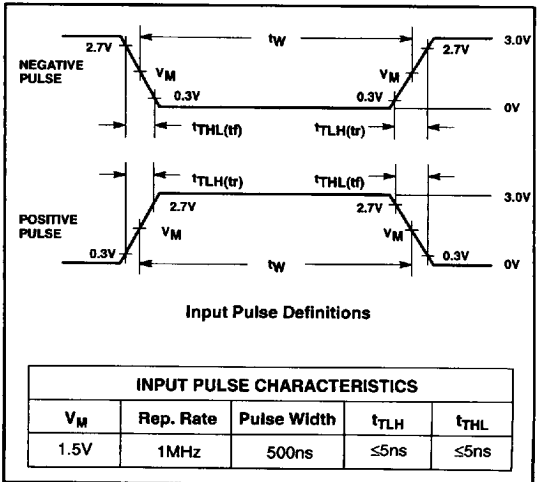
NOTES:

1. Positive current is defined as into the terminal referenced.
2. All voltages with respect to network ground.
3. Measured with one output switching from a Logic "1" to a Logic "0".
4. Duration of short circuit should not exceed 1 second, no more than one output shorted at a time.
5. Typical values are at V<sub>CC</sub> = 5V, T<sub>A</sub> = 25°C.
6. Tested at an address cycle time of 1μs.
7. Guaranteed, but not tested.

TEST LOAD CIRCUITS



VOLTAGE WAVEFORMS



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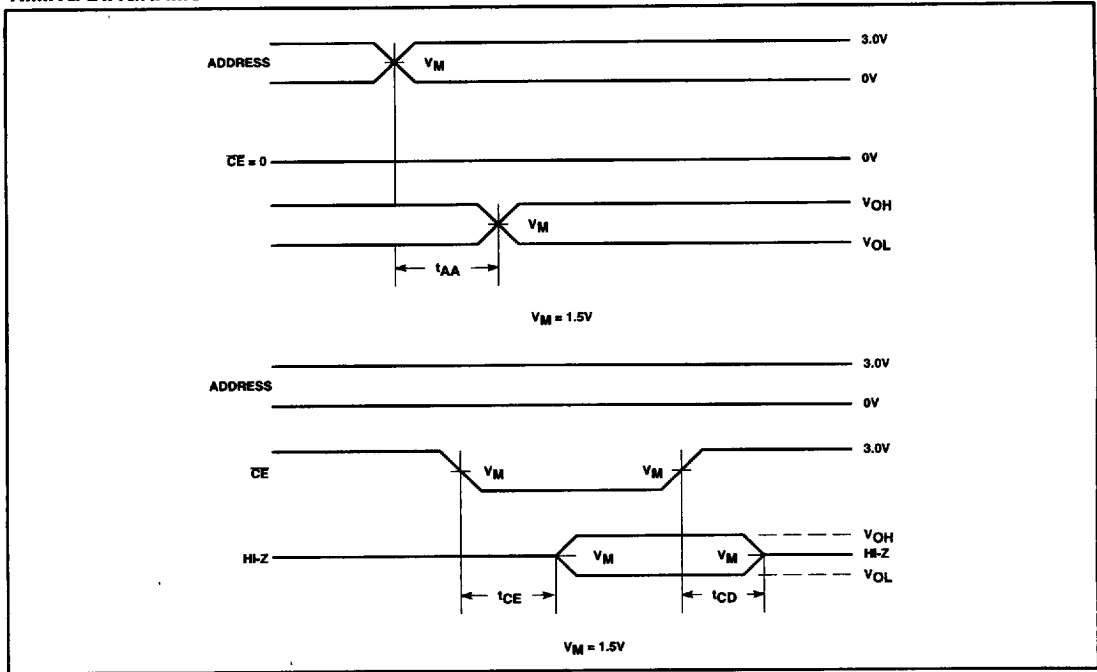
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TIMING DIAGRAMS



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