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Status	Product Specification
Memory Products	

82HS195
82HS195A
82HS195B
16K-bit TTL bipolar PROM

DESCRIPTION

The 82HS195, 82HS195A and 82HS195B are field-programmable, which means that custom patterns are immediately available by following the Signetics Generic II fusing procedure. The 82HS195 devices are supplied with all outputs at logical High. Outputs are programmed to a logic Low level at any specified address by fusing a programmable matrix.

These devices include on-chip decoding and 2 Chip Enable inputs for memory expansion. They feature 3-State outputs for optimization of word expansion in bused organizations.

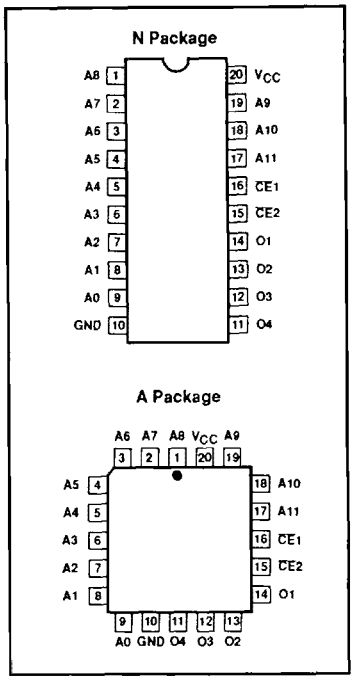
Ordering information can be found on the following page.

These devices are also processed to military requirements for operation over the military temperature range. For specifications and ordering information consult the Signetics Military Data Handbook.

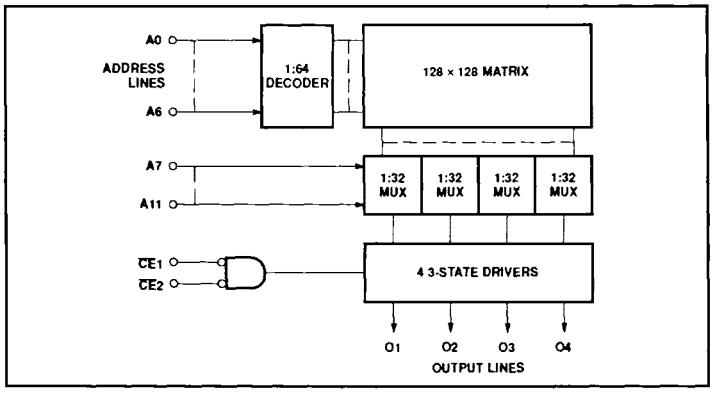
FEATURES

- Low power dissipation: 35μW/bit typ
- Address access time:
  - N82HS195: 45ns max
  - N82HS195A: 35ns max
  - N82HS195B: 25ns max
- Input loading: -250μA max
- Two Chip Enable inputs
- On-chip address decoding
- No separate fusing pins
- Unprogrammed outputs are High level
- Fully TTL compatible
- Outputs: 3-State
- SMD packaging 20-Pin PLCC

PIN CONFIGURATIONS



BLOCK DIAGRAM



16K-bit TTL bipolar PROM (4096 × 4)

82HS195 / 82HS195A / 82HS195B

ORDERING INFORMATION

DESCRIPTION	ORDER CODE
20-Pin Plastic Dual-In-Line 300mil-wide	N82HS195 N, N82HS191A N, N82HS195B N
20-Pin Plastic Leaded Chip Carrier 350mil-square	N82HS195 A, N82HS195A A, N82HS195B A

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	RATING	UNIT
V_{CC}	Supply voltage	+7.0	V_{DC}
V_{IN}	Input voltage	+5.5	V_{DC}
V_O	Output voltage Off-State	+5.5	V_{DC}
T_{amb}	Operating temperature range	0 to +75	°C
T_{stg}	Storage temperature range	-65 to +150	°C

DC ELECTRICAL CHARACTERISTICS

$0°C \leq T_{amb} \leq +75°C$, $4.75V \leq V_{CC} \leq 5.25V$

SYMBOL	PARAMETER	TEST CONDITIONS[1,2]	LIMITS			UNIT
			Min	Typ[3]	Max	
Input voltage						
V_{IL}	Low[4]				0.8	V
V_{IH}	High[4]		2.0			V
V_{IC}	Clamp	I_{IN} = -12mA		-0.8	-1.2	V
Output voltage						
		$\overline{CE1}$ & $\overline{CE2}$ = Low				
V_{OL}	Low	I_{OUT} = 16mA			0.45	V
V_{OH}	High	I_{OUT} = -2.0mA	2.4			V
Input current						
I_{IL}	Low	V_{IN} = 0.45V			-250	µA
I_{IH}	High	V_{IN} = 5.25V			40	µA
Output current						
I_{OZ}	Hi-Z state	$\overline{CE1}$ & $\overline{CE2}$ = High, V_{OUT} = 0.5V			-40	µA
		$\overline{CE1}$ & $\overline{CE2}$ = High, V_{OUT} = 5.5V			40	µA
I_{OS}	Short circuit[5]	$\overline{CE1}$ & $\overline{CE2}$ = Low, V_{OUT} = 0V, High stored	-15		-70	mA
Supply current[6]						
I_{CC}		V_{CC} = 5.25V		120	145	mA
Capacitance						
		$\overline{CE1}$ & $\overline{CE2}$ = High, V_{CC} = 5.0V				
C_{IN}	Input	V_{IN} = 2.0V		5		pF
C_{OUT}	Output	V_{OUT} = 2.0V		8		pF

NOTES:
1. All voltage values are with respect to network ground terminal.
2. Positive current is defined as into the terminal referenced.
3. Typical values are at V_{CC} = 5V, T_{amb} = +25°C.
4. Measured with one output switching from a Logic "1" to a Logic "0".
5. Duration of the short circuit should not exceed 1 second.
6. Measured with all inputs grounded and all outputs open.

16K-bit TTL bipolar PROM (4096 × 4)

82HS195 / 82HS195A / 82HS195B

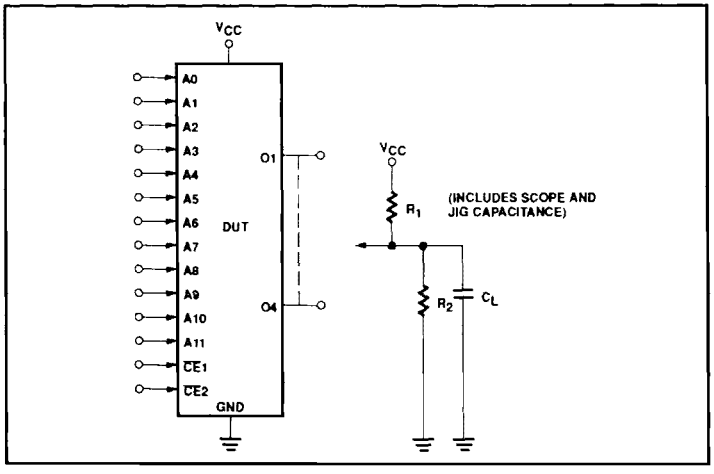
AC ELECTRICAL CHARACTERISTICS

$R_1 = 470\Omega$, $R_2 = 1k\Omega$, $C_L = 30pF$, $0°C \leq T_{amb} \leq +75°C$, $4.75V \leq V_{CC} \leq 5.25V$

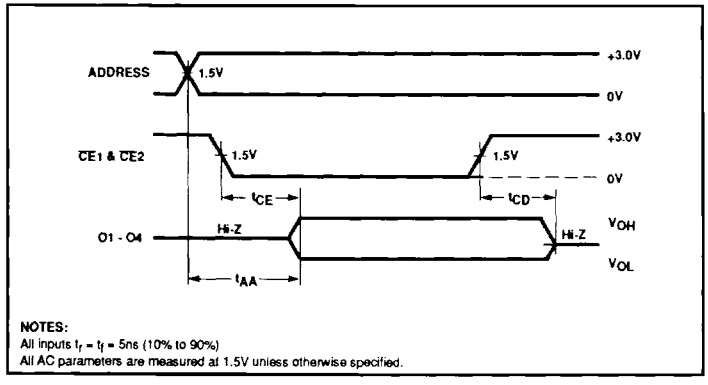
SYMBOL	PARAMETER	TO	FROM	82HS195			82HS195A			82HS195B			UNIT
				Min	Typ[1]	Max	Min	Typ[1]	Max	Min	Typ[1]	Max	
Access time[2]													
t_{AA}		Output	Address		35	45		25	35		20	25	ns
t_{CE}		Output	Chip Enable		20	25		15	20		10	15	ns
Disable time[3]													
t_{CD}		Output	Chip Disable		20	25		15	20		10	15	ns

NOTES:
1. Typical values are $V_{CC} = 5V$, $T_{amb} = +25°C$.
2. Tested at an address cycle time of 1µs.
3. Measured at a delta of 0.5V from Logic Level with $R_1 = 750\Omega$, $R_2 = 750\Omega$ and $C_L = 5pF$.

TEST LOAD CIRCUIT



VOLTAGE WAVEFORM



NOTES:
All inputs $t_r = t_f = 5ns$ (10% to 90%)
All AC parameters are measured at 1.5V unless otherwise specified.