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Memory Products	

82S130A 82S131A

2K-bit TTL bipolar PROM

DESCRIPTION

The 82S130A and 82S131A are field programmable, which means that custom patterns are immediately available by following the Signetics Generic I fusing procedure. The standard 82S130A and 82S131A are supplied with all outputs at logical Low. Outputs are programmed to a logic High level at any specified address by fusing the Ni-Cr link matrix.

These devices include on-chip decoding and 1 Chip Enable input for ease of memory expansion. They feature either Open Collector or 3-State outputs for optimization of word expansion in bused organizations.

Ordering information can be found on the following page.

The 82S130A and 82S131A 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.

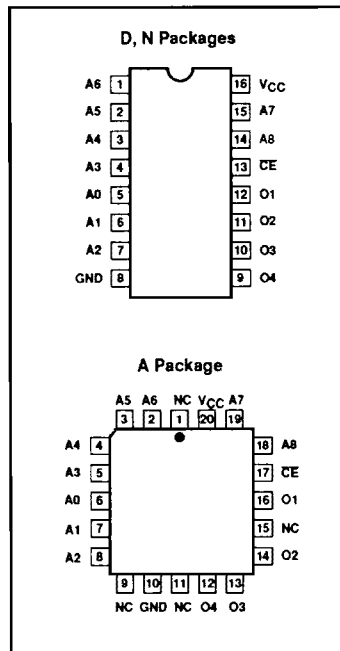
FEATURES

- Address access time:
 - N82S130A: 33ns max
 - N82S131A: 30ns max
- Power dissipation: 0.3mW/bit typ
- Input loading: -100µA max
- On-chip address decoding
- One Chip Enable input
- Output options:
 - N82S130A: Open Collector
 - N82S131A: 3-State
- No separate fusing pins
- Unprogrammed outputs are Low level
- Fully TTL compatible

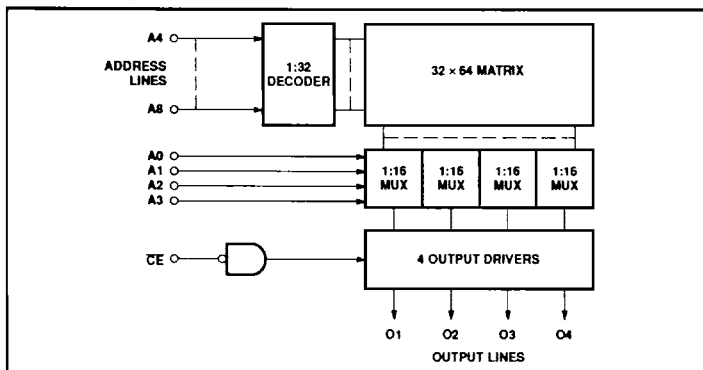
APPLICATIONS

- Prototyping/volume production
- Sequential controllers
- Microprogramming
- Hardwired algorithms
- Control store
- Random logic
- Code conversion

PIN CONFIGURATIONS



BLOCK DIAGRAM



2K-bit TTL bipolar PROM (512 × 4)

82S130A / 82S131A

ORDERING INFORMATION

DESCRIPTION	ORDER CODE
16-Pin Plastic Dual-In-Line 300mil-wide	N82S130A N, N82S131A N
16-Pin Plastic SO 300mil-wide	N82S130A D, N82S131A D
20-Pin Plastic Leaded Chip Carrier 350mil-square	N82S130A A, N82S131A 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 _{OH}	Output voltage High (82S130A)	+5.5	V _{DC}
V _O	Output voltage Off-State (82S131A)	+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 ≤ T_{amb} ≤ +75°C, 4.75V ≤ V_{CC} ≤ 5.25V

SYMBOL	PARAMETER	TEST CONDITIONS ^{1,2}	LIMITS			UNIT
			MIN	TYP ³	MAX	
Input voltage						
V _{IL}	Low	I _N = -12mA	2.0		0.8	V
V _{IH}	High					
V _{IC}	Clamp					
Output voltage						
V _{OL}	Low	CE = Low	2.4		0.45	V
V _{OH}	High (82S131A)	I _{OUT} = 16mA I _{OUT} = -2.0mA				
Input current						
I _{IL}	Low	V _{IN} = 0.45V			-100	μA
I _{IH}	High	V _{IN} = 5.5V				
Output current						
I _{OLK}	Leakage (82S130A)	CE = High, V _{OUT} = 5.5V	-15		40	μA
I _{oz}	Hi-Z state (82S131A)	CE = High, V _{OUT} = 5.5V				
I _{os}	Short circuit (82S131A) ⁴	CE = High, V _{OUT} = 0.5V CE = Low, V _{OUT} = 0V, High stored				
Supply current⁵						
I _{CC}		V _{CC} = 5.25V			140	mA
Capacitance						
C _{IN}	Input	CE = High, V _{CC} = 5.0V		5		pF
C _{OUT}	Output	V _{IN} = 2.0V V _{OUT} = 2.0V				

NOTES:

- Positive current is defined as into the terminal referenced.
- All voltages with respect to network ground.
- Typical values are at V_{CC} = 5V, T_{amb} = +25°C.
- Duration of short circuit should not exceed 1 second.
- Measured with all inputs grounded and all outputs open.

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82S130A / 82S131A

AC ELECTRICAL CHARACTERISTICS

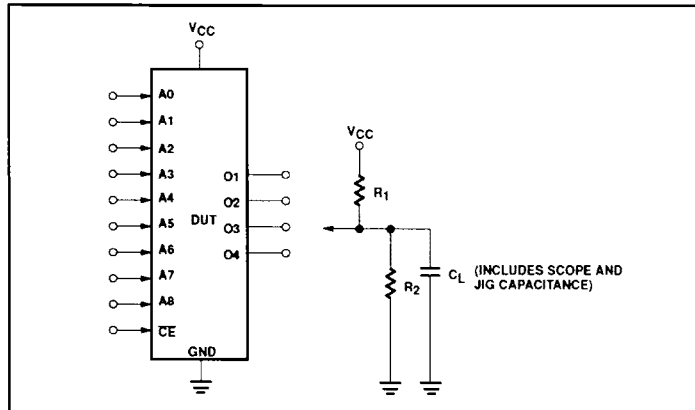
$R_1 = 270\Omega$, $R_2 = 600\Omega$, $C_L = 30\text{pF}$, $0^\circ\text{C} \leq T_{\text{amb}} \leq +75^\circ\text{C}$, $4.75\text{V} \leq V_{\text{CC}} \leq 5.25\text{V}$

SYMBOL	PARAMETER	TO	FROM	N82S131A			N82S130A			UNIT
				Min	Typ ¹	Max	Min	Typ ¹	Max	
Access time²										
t_{AA}		Output	Address		18	30		18	33	ns
t_{CE}		Output	Chip Enable		10	20		10	20	ns
Disable time³										
t_{CD}		Output	Chip Enable		6	15		6	15	ns

NOTES:

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

TEST LOAD CIRCUIT



VOLTAGE WAVEFORMS

