

DATA SHEET

82S126A; 82S129A

1K-bit TTL bipolar PROM (256 x 4)

Product specification

1987 Oct 14

1K-bit TTL bipolar PROM (256 x 4)

82S126A 82S129A

FEATURES

- Address access time: 35ns max
- Input loading: -150µA max
- On-chip address decoding
- Output options:
 - 82S126A: Open collector
 - 82S129A: 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

DESCRIPTION

The 82S126A and 82S129A are field programmable, which means that custom patterns are immediately available by following the Philips Generic I fusing procedure. The 82S126A and 82S129A devices are supplied with all outputs at a logical Low. Outputs are programmed to a logic High level at any specified address by fusing the Ni-Cr link matrix.

These devices includes on-chip decoding and 2 chip enable inputs for ease of memory expansion. They feature either Open collector or 3-State outputs for optimization of word expansion in bused organizations.

ORDERING INFORMATION

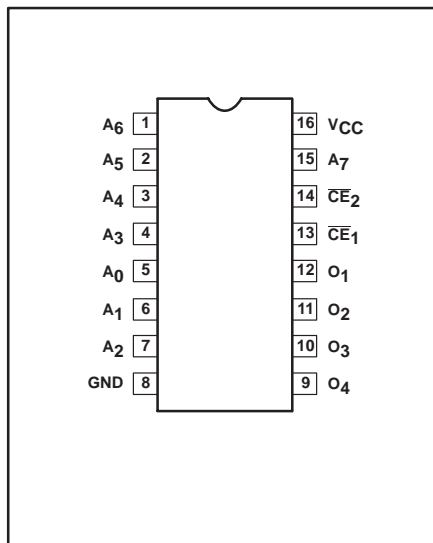
DESCRIPTION	ORDER CODE	PACKAGE DESIGNATOR*
16-pin Ceramic DIP (300mil-wide)	82S126A/BEA, 82S129A/BEA	GDIP1-T16
16-pin Ceramic FlatPack	82S126A/BFA, 82S129A/BFA	GDFFP2-F16

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

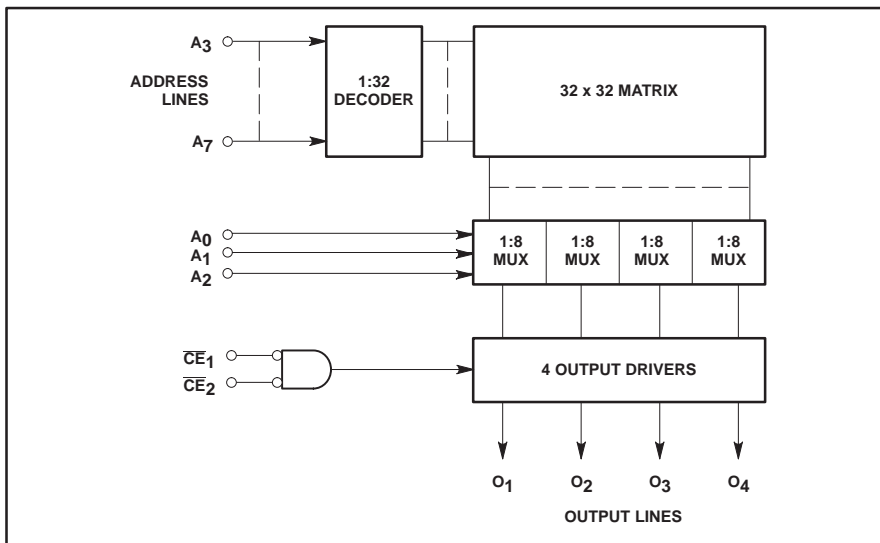
ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	RATING	UNIT
V _{CC}	Supply voltage	+7	V _{DC}
V _I	Input voltage	+5.5	V _{DC}
V _O	Output voltage High (82S126A)	+5.5	V _{DC}
V _O	Output voltage Off-State (82S129A)	+5.5	V _{DC}
T _A	Operating temperature range	-55 to +125	°C
T _{STG}	Storage temperature range	-65 to +150	°C

PIN CONFIGURATION



BLOCK DIAGRAM



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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 ^{1,2}	LIMITS			UNIT	
			Min	Typ ⁵	Max		
Input voltage							
V _{IL}	Low	V _{CC} = 4.5V, I _I = -18mA	2.0		0.8	V	
V _{IH}	High						
V _{IK}	Clamp						-1.2
Output voltage							
V _{OL}	Low	$\overline{\text{CE}}_{1,2} = \text{Low}$ I _O = 16mA	2.4		0.5	V	
V _{OH}	High (82S129A)	V _{CC} = 4.5V, I _O = -2.0mA					
Input current							
I _{IL}	Low	V _{CC} = 5.5V V _I = 0.45V			-150	μA	
I _{IH}	High						V _I = 5.5V
Output current							
I _{OLK}	Leakage (82S126A)	V _{CC} = 5.5V $\overline{\text{CE}}_1$ or $\overline{\text{CE}}_2 = \text{High}$, V _O = 5.5V $\overline{\text{CE}}_1$ or $\overline{\text{CE}}_2 = \text{High}$, V _O = 5.5V $\overline{\text{CE}}_1$ or $\overline{\text{CE}}_2 = \text{High}$, V _O = 0.4V V _{CC} = 5.5V, $\overline{\text{CE}}_{1,2} = \text{Low}$, V _O = 0V, High stored	-15		40	μA	
I _{OZ}	Hi-Z state (82S129A)						40
I _{OS}	Short circuit (82S129A) ³						-40
							-85
Supply current³							
I _{CC}		$\overline{\text{CE}}_1$ or $\overline{\text{CE}}_2 = \text{High}$, V _{CC} = 5.5V			125	mA	
Capacitance⁶							
C _{IN}	Input	$\overline{\text{CE}}_1$ or $\overline{\text{CE}}_2 = \text{High}$, V _{CC} = 5.0V V _I = 2.0V			5	10	pF
C _{OUT}	Output						

AC 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	TO	FROM	LIMITS			UNIT
				Min	Typ ⁵	Max	
t _{AA}	Access time ⁴	Output	Address		17	35	ns
t _{CE}	Access time ⁴	Output	Chip Enable		10	20	ns
t _{CD}	Disable time	Output	Chip Disable		6	15	ns

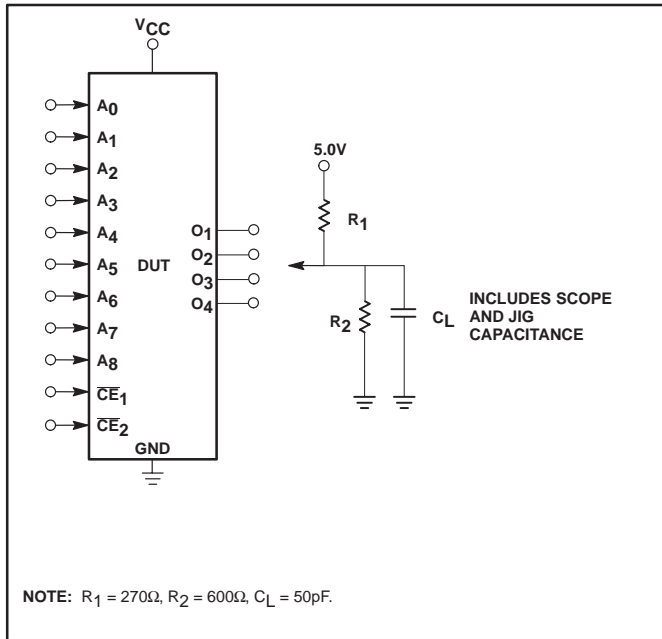
NOTES:

1. Positive current is defined as into the terminal referenced.
2. All voltages with respect to network ground.
3. Duration of short circuit should not exceed 1 second.
4. Tested at an address cycle time of 1μs.
5. Typical values are at V_{CC} = 5V, T_A = +25°C.
6. Guaranteed, but not tested.

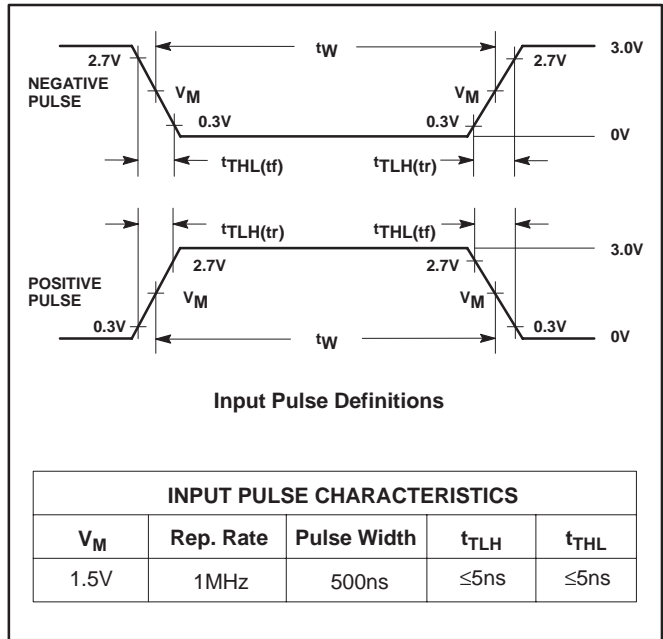
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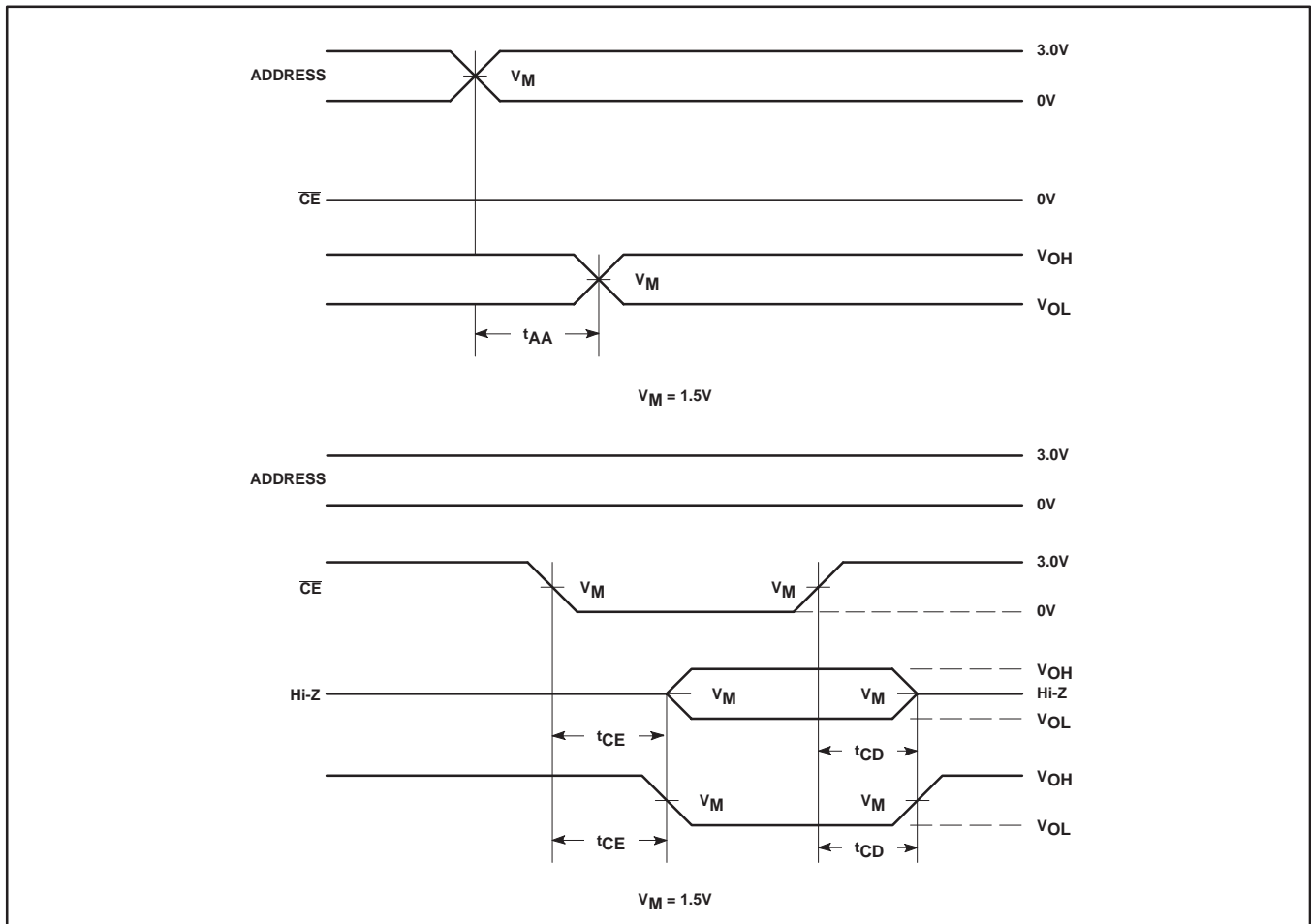
TEST LOAD CIRCUITS



VOLTAGE WAVEFORMS



TIMING DIAGRAMS



1K-bit TTL bipolar PROM (256 x 4)**82S126A;
82S129A****DEFINITIONS**

Data Sheet Identification	Product Status	Definition
<i>Objective Specification</i>	Formative or in Design	This data sheet contains the design target or goal specifications for product development. Specifications may change in any manner without notice.
<i>Preliminary Specification</i>	Preproduction Product	This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
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