Decoder Series

6L16A
8L14A

Features/Benefits

- 14 to 16 outputs
- Efficient implementation of decoders
- Security fuse

Ordering Information

PAL6L16A C NS STD

- PROGRAMMABLE ARRAY LOGIC
- NUMBER OF ARRAY INPUTS
- OUTPUT TYPE
  - L = Combinatorial Active Low
- NUMBER OF OUTPUTS
- HIGH SPEED
- OPERATING CONDITIONS
  - C = Commercial
- PROCESSING
  - STD = Standard
  - XXXX = Other
- PACKAGE
  - NS = Plastic SKINNYDIP
  - JS = Ceramic SKINNYDIP
  - NL = Plastic Leaded Chip Carrier
  - SG = Small-Outline Gull-wing

PAL6L16A, 8L14A

DEVICE	INPUTS	OUTPUTS	t_{PD} (ns)	I_{CC} (mA)
PAL6L16A	6	16	25	90
PAL8L14A	8	14	25	90

Description

The Decoder Series provides a wide number of outputs, especially useful in decoding applications. These two parts implement simple combinatorial logic.

Performance

These devices offer 25-ns speed at only 90 mA supply current.

Packages

The commercial PAL12L10 Series is available in the plastic SKINNYDIP (NS), ceramic SKINNYDIP (JS), plastic leaded chip carrier (NL), and small outline (SG) packages.

Package Drawings

(refer to PAL Device Package Outlines, page 3-179)

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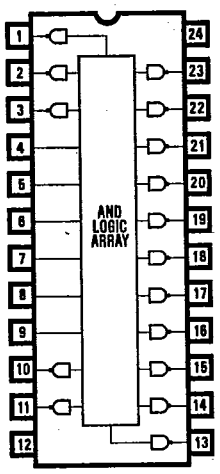
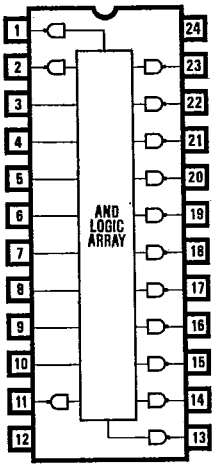
DIP/SO Pinouts

6L16A

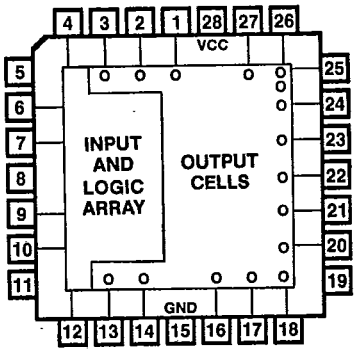


8L14A

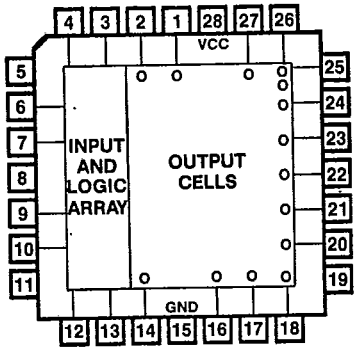


PLCC Pinouts

6L16A



8L14A



Absolute Maximum Ratings

	Operating	Programming
Supply voltage V_{CC}	-0.5 V to 7.0 V	-0.5 V to 12.0 V
Input voltage	-1.5 V to 5.5 V	-1.0 V to 22.0 V
Off-state output voltage	5.5 V	12.0 V
Storage temperature		-65°C to +150°C

Operating Conditions

SYMBOL	PARAMETER	COMMERCIAL[1] MIN	TYP	MAX	UNIT
V_{CC}	Supply voltage	4.75	5	5.25	V
T_A	Operating free-air temperature	0	25	75	°C

Electrical Characteristics Over Operating Conditions

SYMBOL	PARAMETER	TEST CONDITIONS		MIN	TYP	MAX	UNIT
V_{IL}[2]	Low-level input voltage					0.8	V
V_{IH}[2]	High-level input voltage			2			V
V_{IC}	Input clamp voltage	V_{CC} = MIN	I_I = -18 mA		-0.8	-1.5	V
I_{IL}	Low-level input current	V_{CC} = MAX	V_I = 0.4 V		-0.02	-0.25	mA
I_{IH}	High-level input current	V_{CC} = MAX	V_I = 2.4 V			25	μA
I_I	Maximum input current	V_{CC} = MAX	V_I = 5.5 V			100	μA
V_{OL}	Low-level output voltage	V_{CC} = MIN	I_{OL} = 8 mA		0.3	0.5	V
V_{OH}	High-level output voltage	V_{CC} = MIN	I_{OH} = -3.2 mA	2.4	2.8		V
I_{OS}[3]	Output short-circuit current	V_{CC} = 5 V	V_O = 0 V	-30	-70	-130	mA
I_{CC}	Supply current	V_{CC} = MAX			60	90	mA

Switching Characteristics Over Operating Conditions

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PD}	Input to output propagation delay	R1 = 560 Ω, R2 = 1.1 KΩ		15	25	ns

1. The Decoder Series is designed to operate over the full military operating conditions. For availability and specifications, contact Monolithic Memories.
2. These are absolute voltages with respect to the ground pin on the device and include all overshoots due to system and/or tester noise. Do not attempt to test these values without suitable equipment.
3. No more than one output should be shorted at a time, and duration of the short circuit should not exceed one second.

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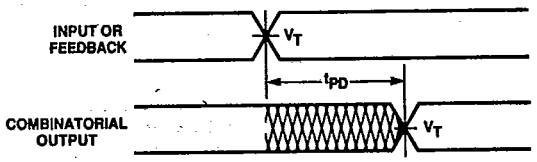
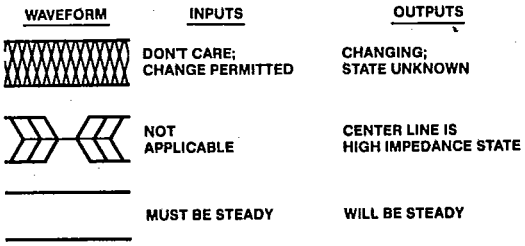
Switching Waveforms



Combinatorial Output

Notes:
1. VT = 1.5 V.
2. Input pulse amplitude 0 V to 3.0 V.
3. Input rise and fall times 2-5 ns typical.

Key to Timing Diagrams



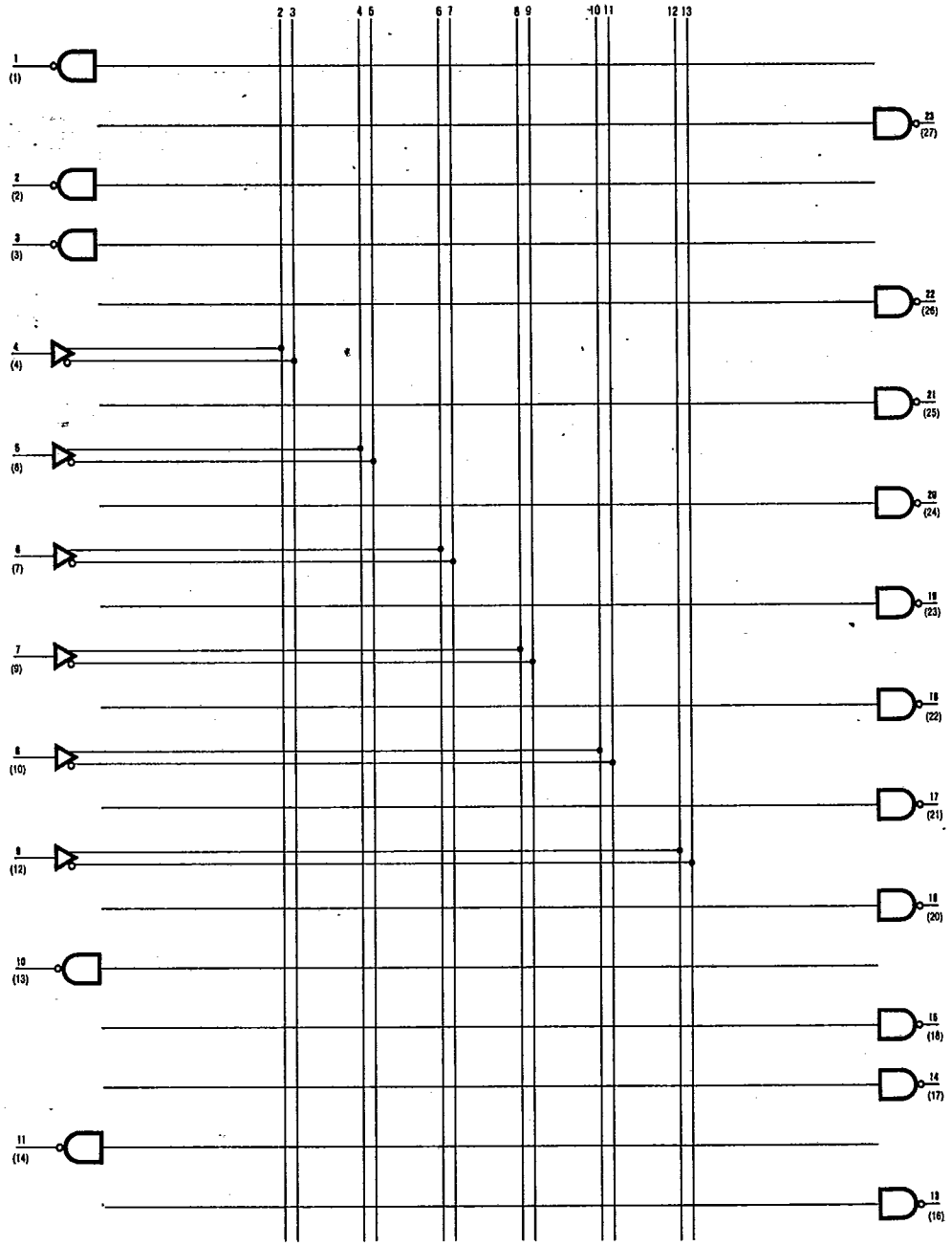
Switching Test Load
(refer to page 5-164)

Programmers/Development Systems
(refer to Programmer Reference Guide, page 3-81)

Schematic of Inputs and Outputs
(refer to page 5-164)

Logic Diagram

6L16A



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Logic Diagram

T-46-13-47

8L14A