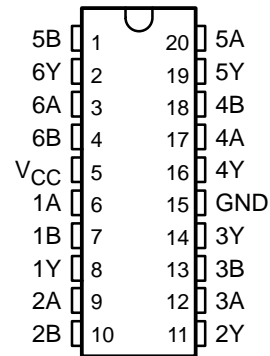


- High Capacitive-Drive Capability
- Typical Delay Time of 3.2 ns ($C_L = 50$ pF) and Typical Power Dissipation of Less Than 13 mW Per Gate
- Center V_{CC} and GND Configuration Provides Minimum Lead Inductance in High-Current Switching Applications
- Packaged in Standard Plastic (N) 300-mil DIPs

N PACKAGE
(TOP VIEW)



description

This device contains six independent 2-input AND drivers. It performs the Boolean functions $Y = A \cdot B$ or $Y = \overline{A} + \overline{B}$ in positive logic.

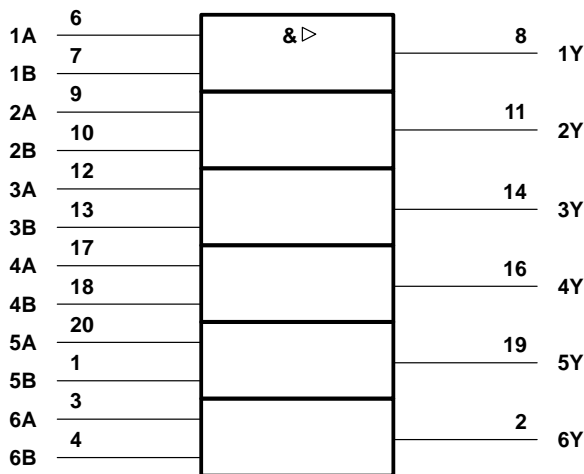
The center-pin configuration reduces lead inductance when compared to the 'AS808B. The reduced lead inductance minimizes noise generated onto either the V_{CC} or GND bus. This reduction is significant in high-current switching applications.

The SN74AS1808 is characterized for operation from 0°C to 70°C.

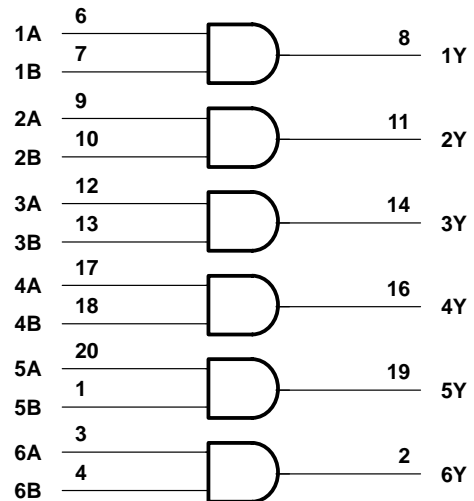
FUNCTION TABLE
(each driver)

INPUTS		OUTPUT
A	B	Y
H	H	H
L	X	L
X	L	L

logic symbol†



logic diagram (positive logic)



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

SN74AS1808

HEX 2-INPUT AND DRIVER

SDAS044C – AUGUST 1984 – REVISED JANUARY 1995

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)[†]

Supply voltage, V_{CC}	7 V
Input voltage, V_I	7 V
Operating free-air temperature range, T_A	0°C to 70°C
Storage temperature range	–65°C to 150°C

[†] Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

recommended operating conditions[‡]

	MIN	NOM	MAX	UNIT
V_{CC} Supply voltage	4.5	5	5.5	V
V_{IH} High-level input voltage	2			V
V_{IL} Low-level input voltage			0.8	V
I_{OH} High-level output current			–48	mA
I_{OL} Low-level output current			48	mA
T_A Operating free-air temperature	0		70	°C

[‡] This high sink- or source-current device is not recommended for use above 40 Mhz.

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	TYP [§]	MAX	UNIT
V_{IK}	$V_{CC} = 4.5$ V, $I_I = -18$ mA			–1.2	V
V_{OH}	$V_{CC} = 4.5$ V to 5.5 V, $I_{OH} = -2$ mA	$V_{CC} - 2$			V
	$V_{CC} = 4.5$ V, $I_{OH} = -3$ mA	2.4	3.2		
		2			
V_{OL}	$V_{CC} = 4.5$ V, $I_{OL} = 48$ mA		0.35	0.5	V
I_I	$V_{CC} = 5.5$ V, $V_I = 7$ V			0.1	mA
I_{IH}	$V_{CC} = 5.5$ V, $V_I = 2.7$ V			20	μA
I_{IL}	$V_{CC} = 5.5$ V, $V_I = 0.4$ V			–0.5	mA
I_O^{\parallel}	$V_{CC} = 5.5$ V, $V_O = 2.25$ V	–50		–200	mA
I_{CCH}	$V_{CC} = 5.5$ V, $V_I = 4.5$ V		8	13	mA
I_{CCL}	$V_{CC} = 5.5$ V, $V_I = 0$		20	33	mA

[§] All typical values are at $V_{CC} = 5$ V, $T_A = 25^\circ\text{C}$.

^{||} The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I_{OS} .

switching characteristics (see Figure 1)

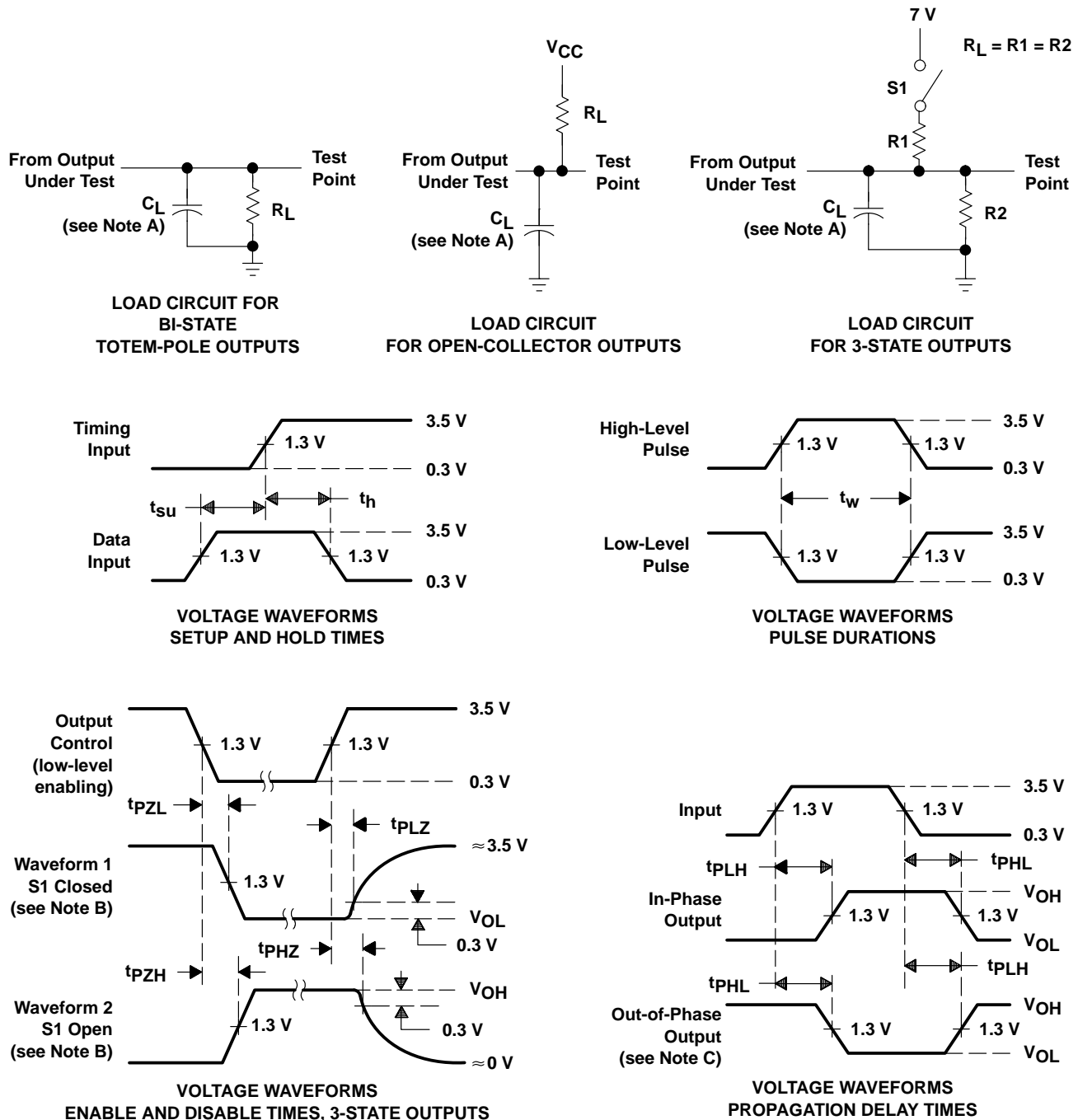
PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5$ V to 5.5 V, $C_L = 50$ pF, $R_L = 500 \Omega$, $T_A = \text{MIN to MAX}^\#$		UNIT
			MIN	MAX	
t_{PLH}	A or B	Y	1	6	ns
t_{PHL}			1	6	

[#] For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

PARAMETER MEASUREMENT INFORMATION
SERIES 54ALS/74ALS AND 54AS/74AS DEVICES



- NOTES: A. C_L includes probe and jig capacitance.
B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
C. When measuring propagation delay items of 3-state outputs, switch S1 is open.
D. All input pulses have the following characteristics: $PRR \leq 1$ MHz, $t_r = t_f = 2$ ns, duty cycle = 50%.
E. The outputs are measured one at a time with one transition per measurement.

Figure 1. Load Circuits and Voltage Waveforms

IMPORTANT NOTICE

Texas Instruments (TI) reserves the right to make changes to its products or to discontinue any semiconductor product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

TI warrants performance of its semiconductor products and related software to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are utilized to the extent TI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.

Certain applications using semiconductor products may involve potential risks of death, personal injury, or severe property or environmental damage ("Critical Applications").

TI SEMICONDUCTOR PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED, OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS.

Inclusion of TI products in such applications is understood to be fully at the risk of the customer. Use of TI products in such applications requires the written approval of an appropriate TI officer. Questions concerning potential risk applications should be directed to TI through a local SC sales office.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards should be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance, customer product design, software performance, or infringement of patents or services described herein. Nor does TI warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used.