

- High Capacitive Drive Capability
- 'ALS808A has Typical Delay Time of 4.8 ns ( $C_L = 50$  pF) and Typical Power Dissipation of 4.5 mW per Gate
- 'AS808B has Typical Delay Time of 3.2 ns ( $C_L = 50$  pF) and Typical Power Dissipation of Less than 13 mW per Gate
- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs
- Dependable Texas Instruments Quality and Reliability

description

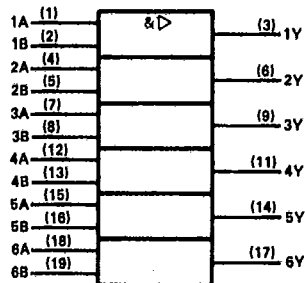
These devices contain six independent 2-input AND drivers. They perform the Boolean functions  $Y = A \cdot B$  or  $Y = \bar{A} + \bar{B}$  in positive logic.

The SN54ALS808A and SN54AS808B are characterized for operation over the full military temperature range of  $-55^\circ\text{C}$  to  $125^\circ\text{C}$ . The SN74ALS808A and SN74AS808B are characterized for operation from  $0^\circ\text{C}$  to  $70^\circ\text{C}$ .

FUNCTION TABLE (each driver)

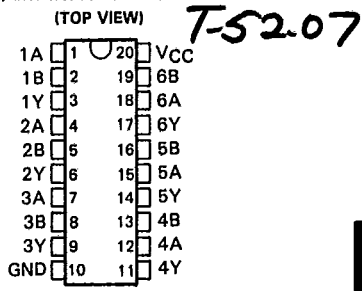
INPUTS		OUTPUT
A	B	Y
H	H	H
L	X	L
X	L	L

logic symbol†

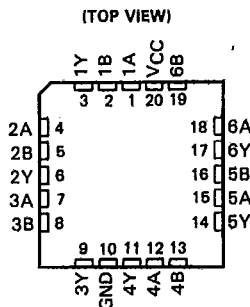


† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

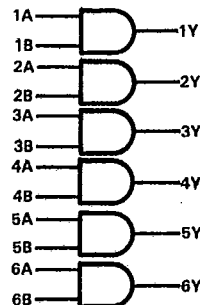
SN54ALS808A, SN54AS808B . . . J PACKAGE  
 SN74ALS808A, SN74AS808B . . . DW OR N PACKAGE



SN54ALS808A, SN54AS808B . . . FK PACKAGE



logic diagram (positive logic)



NOTICE

SEE ORDER OF DATA FOR ERRATA INFORMATION

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ALS and AS Circuits

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.



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**SN54ALS808A, SN74ALS808A  
HEX 2-INPUT AND DRIVERS**

**7-52-07**

**absolute maximum ratings over operating free-air temperature range (unless otherwise noted)**

Supply voltage, V <sub>CC</sub> .....	7 V
Input voltage .....	7 V
Operating free-air temperature range: SN54ALS808A .....	-55°C to 125°C
SN74ALS808A .....	0°C to 70°C
Storage temperature range .....	-65°C to 150°C

**recommended operating conditions**

		SN54ALS808A			SN74ALS808A			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub>	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V <sub>IH</sub>	High-level input voltage	2			2			V
V <sub>IL</sub>	Low-level input voltage			0.7			0.8	V
I <sub>OH</sub>	High-level output current			-12			-15	mA
I <sub>OL</sub>	Low-level output current			12			24	mA
T <sub>A</sub>	Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS	SN54ALS808A			SN74ALS808A			UNIT
		MIN	TYP†	MAX	MIN	TYP†	MAX	
V <sub>IK</sub>	V <sub>CC</sub> = 4.5 V, I <sub>I</sub> = -18 mA			-1.2			-1.2	V
V <sub>OH</sub>	V <sub>CC</sub> = 4.5 V to 5.5 V, I <sub>OH</sub> = -0.4 mA	V <sub>CC</sub> -2			V <sub>CC</sub> -2			V
	V <sub>CC</sub> = 4.5 V, I <sub>OH</sub> = -3 mA	2.4	3.2		2.4	3.2		
	V <sub>CC</sub> = 4.5 V, I <sub>OH</sub> = -12 mA	2						
	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = -15 mA				2			
V <sub>OL</sub>	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 12 mA	0.25	0.4		0.25	0.4		V
	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 24 mA				0.35	0.5		
I <sub>I</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 7 V			0.1			0.1	mA
I <sub>H</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 2.7 V			20			20	μA
I <sub>IL</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 0.4 V			-0.1			-0.1	mA
I <sub>O</sub> ‡	V <sub>CC</sub> = 5.5 V, V <sub>O</sub> = 2.25 V	-30		-112	-30		-112	mA
I <sub>CCH</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 4.5 V			4.5			4.5	7 mA
I <sub>CCL</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 0 V			8			8	16 mA

†All typical values are at V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C

‡The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I<sub>OS</sub>.

**switching characteristics (see note 1)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V <sub>CC</sub> = 5 V, C <sub>L</sub> = 50 pF, R <sub>L</sub> = 500 Ω, T <sub>A</sub> = 25°C		V <sub>CC</sub> = 4.5 V to 5.5 V, C <sub>L</sub> = 50 pF, R <sub>L</sub> = 500 Ω, T <sub>A</sub> = MIN to MAX		UNIT		
			ALS808A		SN54ALS808A			SN74ALS808A	
			TYP	MIN	MAX	MIN		MAX	
t <sub>PLH</sub>	A or B	Y	6	2	11	2	9	ns	
t <sub>PHL</sub>			4	1	10	1	8		

NOTE 1: Load circuit and voltage waveforms are shown in Section 1.

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ALS and AS Circuits

SN54AS808B, SN74AS808B  
HEX 2-INPUT AND DRIVERS

T-52.07

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

Supply voltage, VCC	7 V
Input voltage	7 V
Operating free-air temperature range:	SN54AS808B -55°C to 125°C
	SN74AS808B 0°C to 70°C
Storage temperature range	-65°C to 150°C

recommended operating conditions

	SN54AS808B			SN74AS808B			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
VCC Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V <sub>IH</sub> High-level input voltage	2			2			V
V <sub>IL</sub> Low-level input voltage			0.8			0.8	V
I <sub>OH</sub> High-level output current			-40			-48	mA
I <sub>OL</sub> Low-level output current			40			48	mA
T <sub>A</sub> Operating free-air temperature	-55		125	0		70	°C

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ALS and AS Circuits

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

PARAMETER	TEST CONDITIONS	SN54AS808B		SN74AS808B		UNIT		
		MIN	TYP†	MAX	MIN		TYP†	MAX
V <sub>IK</sub>	VCC = 4.5 V, I <sub>I</sub> = -18 mA			-1.2		-1.2	V	
V <sub>OH</sub>	VCC = 4.5 V to 5.5 V, I <sub>OH</sub> = -2 mA	VCC-2			VCC-2		V	
	VCC = 4.5 V, I <sub>OH</sub> = -3 mA	2.4	3.2		2.4	3.2		
	VCC = 4.5 V, I <sub>OH</sub> = -40 mA	2						
	VCC = 4.5 V, I <sub>OH</sub> = -48 mA				2			
V <sub>OL</sub>	VCC = 4.5 V, I <sub>OL</sub> = 40 mA	0.25	0.5				V	
	VCC = 4.5 V, I <sub>OL</sub> = 48 mA				0.35	0.5		
I <sub>I</sub>	VCC = 5.5 V, V <sub>I</sub> = 7 V		0.1			0.1	mA	
I <sub>H</sub>	VCC = 5.5 V, V <sub>I</sub> = 2.7 V		20			20	μA	
I <sub>IL</sub>	VCC = 5.5 V, V <sub>I</sub> = 0.4 V		-0.5			-0.5	mA	
I <sub>O</sub> ‡	VCC = 5.5 V, V <sub>O</sub> = 2.25 V	-50		-200	-60		-200	mA
I <sub>CC</sub> H	VCC = 5.5 V, V <sub>I</sub> = 4.5 V		8	13		8	13	mA
I <sub>CC</sub> L	VCC = 5.5 V, V <sub>I</sub> = 0 V		20	33		20	33	mA

†All typical values are at VCC = 5 V, TA = 25°C

‡The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I<sub>OS</sub>.

switching characteristics (see note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	VCC = 4.5 V to 5.5 V, CL = 50 pF, RL = 500 Ω TA = MIN to MAX				UNIT
			SN54AS808B		SN74AS808B		
			MIN	MAX	MIN	MAX	
t <sub>PLH</sub>	A or B	Y	1	6.5	1	6	ns
t <sub>PHL</sub>			1	6.5	1	6	

NOTE 1: Load circuit and voltage waveforms are shown in Section 1.

