

SN54ALS808A, SN54AS808B, SN74ALS808A, SN74AS808B

Hex 2-Input and Drivers

The SN74ALS808A and SN54AS808B are characterized for operation over the full military temperature range of -55°C to 125°C while the SN74ALS808A and SN74AS808B are characterized for operation from 0°C to 70°C. These devices contain six independent 2-input AND drivers. They perform the Boolean functions $Y = A \cdot B$ or $Y = \overline{A + B}$ in positive logic.

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All recreations are done with the approval of the OCM.

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-38535
 - Class Q Military
 - Class V Space Level
- Qualified Suppliers List of Distributors (QSLD)
 - Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OEM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

SN54ALS808A, SN54AS808B, SN74ALS808A, SN74AS808B HEX 2-INPUT AND DRIVERS

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- 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

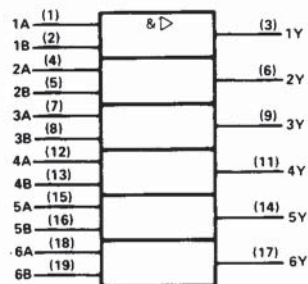
These devices contain six independent 2-input AND drivers. They perform the Boolean functions $Y = A \cdot B$ or $Y = \bar{A} + \bar{B}$ in positive logic.

The SN54ALS808A and SN54AS808B are characterized for operation over the full military temperature range of -55°C to 125°C . The SN74ALS808A and SN74AS808B are 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

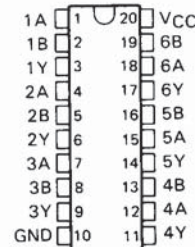
logic symbol†



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

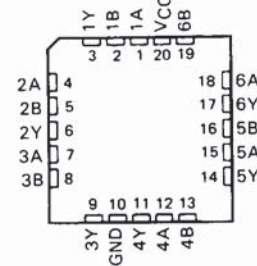
SN54ALS808A, SN54AS808B . . . J PACKAGE
SN74ALS808A, SN74AS808B . . . DW OR N PACKAGE

(TOP VIEW)

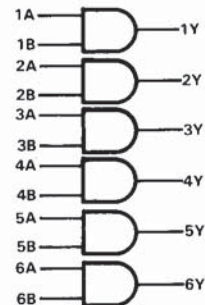


SN54ALS808A, SN54AS808B . . . FK PACKAGE

(TOP VIEW)



logic diagram (positive logic)



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.

TEXAS
INSTRUMENTS

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

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

Supply voltage, V_{CC}	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_{CC}	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage	0.7			0.8			V
I_{OH}	High-level output current	-12			-15			mA
I_{OL}	Low-level output current	12			24			mA
T_A	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_{IK}	$V_{CC} = 4.5 V, I_I = -18 mA$	-1.2			-1.2			V
V_{OH}	$V_{CC} = 4.5 V \text{ to } 5.5 V, I_{OH} = -0.4 mA$	$V_{CC} - 2$			$V_{CC} - 2$			V
	$V_{CC} = 4.5 V, I_{OH} = -3 mA$	2.4	3.2	2.4 3.2				
	$V_{CC} = 4.5 V, I_{OH} = -12 mA$	2			2			
V_{OL}	$V_{CC} = 4.5 V, I_{OL} = 12 mA$	0.25 0.4			0.25	0.4		V
	$V_{CC} = 4.5 V, I_{OL} = 24 mA$				0.35 0.5			
I_I	$V_{CC} = 5.5 V, V_I = 7 V$	0.1			0.1			mA
I_H	$V_{CC} = 5.5 V, V_I = 2.7 V$	20			20			μA
I_{IL}	$V_{CC} = 5.5 V, V_I = 0.4 V$	-0.1			-0.1			mA
I_O^{\ddagger}	$V_{CC} = 5.5 V, V_O = 2.25 V$	-30	-112		-30	-112		mA
I_{CCH}	$V_{CC} = 5.5 V, V_I = 4.5 V$	4.5 7			4.5 7			mA
I_{CCL}	$V_{CC} = 5.5 V, V_I = 0 V$	8 16			8 16			mA

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

[‡]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 note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 5 V, C_L = 50 pF, R_L = 500 \Omega, T_A = 25^\circ C$		$V_{CC} = 4.5 V \text{ to } 5.5 V, C_L = 50 pF, R_L = 500 \Omega, T_A = \text{MIN to MAX}$		UNIT		
			ALS808A		SN54ALS808A			SN74ALS808A	
			TYP	MIN	MAX	MIN		MAX	
t_{PLH}	A or B	Y	6	2	11	2	9		
t_{PHL}			4	1	10	1	8		

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

SN54AS808B, SN74AS808B HEX 2-INPUT AND DRIVERS

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

Supply voltage, V_{CC}	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	
V_{CC}	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.8			0.8	V
I_{OH}	High-level output current			-40			-48	mA
I_{OL}	Low-level output current			40			48	mA
T_A	Operating free-air temperature	-55		125	0		70	°C

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_{IK}	$V_{CC} = 4.5\text{ V}$, $I_I = -18\text{ mA}$			-1.2		-1.2	V	
V_{OH}	$V_{CC} = 4.5\text{ V to } 5.5\text{ V}$, $I_{OH} = -2\text{ mA}$	$V_{CC}-2$			$V_{CC}-2$		V	
	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -3\text{ mA}$	2.4	3.2		2.4	3.2		
	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -40\text{ mA}$	2						
	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -48\text{ mA}$				2			
V_{OL}	$V_{CC} = 4.5\text{ V}$, $I_{OL} = 40\text{ mA}$		0.25	0.5			V	
	$V_{CC} = 4.5\text{ V}$, $I_{OL} = 48\text{ mA}$				0.35	0.5		
I_I	$V_{CC} = 5.5\text{ V}$, $V_I = 7\text{ V}$			0.1			mA	
I_H	$V_{CC} = 5.5\text{ V}$, $V_I = 2.7\text{ V}$			20		20	μA	
I_{IL}	$V_{CC} = 5.5\text{ V}$, $V_I = 0.4\text{ V}$			-0.5		-0.5	mA	
I_O^{\dagger}	$V_{CC} = 5.5\text{ V}$, $V_O = 2.25\text{ V}$	-50		-200	-50		-200	mA
I_{CCH}	$V_{CC} = 5.5\text{ V}$, $V_I = 4.5\text{ V}$		8	13		8	13	mA
I_{CCL}	$V_{CC} = 5.5\text{ V}$, $V_I = 0\text{ V}$		20	33		20	33	mA

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

[‡]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 note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5\text{ V to } 5.5\text{ V}$, $C_L = 50\text{ pF}$, $R_L = 500\ \Omega$, $T_A = \text{MIN to MAX}$				UNIT
			SN54AS808B		SN74AS808B		
			MIN	MAX	MIN	MAX	
t_{PLH}	A or B	Y	1	6.5	1	6	ns
t_{PHL}			1	6.5	1	6	

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