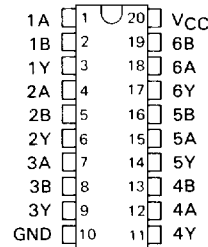


TYPES SN54ALS832, SN54AS832A, SN74ALS832, SN74AS832A HEX 2-INPUT OR DRIVERS

D2661, DECEMBER 1982—REVISED DECEMBER 1983

- High Capacitive Drive Capability
- 'ALS832 Has Typical Delay Time of 5 ns ($C_L = 50$ pF) and Typical Power Dissipation of 5.3 mW per Gate
- 'AS832A Has Typical Delay Time of 3.9 ns ($C_L = 50$ pF) and Typical Power Dissipation of Less than 17 mW per Gate
- Package Options Include Both Plastic and Ceramic Chip Carriers in Addition to Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

SN54ALS832, SN54AS832A . . . J PACKAGE
SN74ALS832, SN74AS832A . . . N PACKAGE
(TOP VIEW)



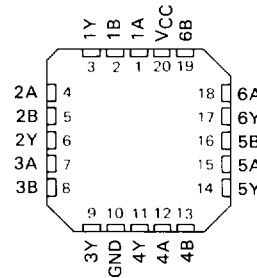
description

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

The -1 version of the SN74ALS832 parts is identical to the standard version except that the recommended maximum I_{OL} is increased to 48 milliamperes. There is no -1 version of the SN54ALS832 parts.

The SN54ALS832 and SN54AS832A are characterized for operation over the full military temperature range of -55°C to 125°C . The SN74ALS832 and SN74AS832A are characterized for operation from 0°C to 70°C .

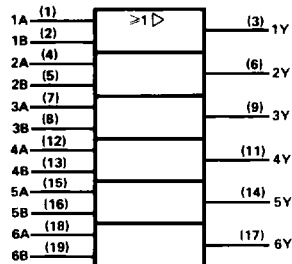
SN54ALS832, SN54AS832A . . . FH PACKAGE
SN74ALS832, SN74AS832A . . . FN PACKAGE
(TOP VIEW)



FUNCTION TABLE (each driver)

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

logic symbol



Pin numbers shown are for J and N packages.

2
ALS AND AS CIRCUITS

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TEXAS
INSTRUMENTS

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2-543

TYPES SN54ALS832, SN74ALS832 HEX 2-INPUT OR 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: SN54ALS832	-55 °C to 125 °C
SN74ALS832	0 °C to 70 °C
Storage temperature range	-65 °C to 150 °C

recommended operating conditions

		SN54ALS832			SN74ALS832			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			V
I_{OH}	High-level output current				-12			mA
I_{OL}	Low-level output current				12			mA
					24			
					48†			
T_A	Operating free-air temperature	-55			125			°C

† The extended limit applies if V_{CC} is maintained between 4.75 V and 5.25 V.
The 48 mA limit applies for the SN74ALS832-1 only.

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

PARAMETER	TEST CONDITIONS	SN54ALS832			SN74ALS832			UNIT
		MIN	TYP‡	MAX	MIN	TYP‡	MAX	
V_{IK}	$V_{CC} = 4.5$ V, $I_I = -18$ mA	-1.5			-1.5			V
V_{OH}	$V_{CC} = 4.5$ V 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						
	$V_{CC} = 4.5$ V, $I_{OH} = -15$ mA				2			
V_{OL}	$V_{CC} = 4.5$ V, $I_{OL} = 12$ mA	0.25			0.25			V
	$V_{CC} = 4.5$ V, $I_{OL} = 24$ mA				0.35			
	$I_{OL} = 48$ mA for -1 version)				0.5			
I_I	$V_{CC} = 5.5$ V, $V_I = 7$ V	0.1			0.1			mA
I_{IH}	$V_{CC} = 5.5$ V, $V_I = 2.7$ V	20			20			μ A
I_{IL}	$V_{CC} = 5.5$ V, $V_I = 0.4$ V	-0.1			-0.1			mA
I_{OS}	$V_{CC} = 5.5$ V, $V_O = 2.25$ V	-30		-112	-30		-112	mA
I_{CCH}	$V_{CC} = 5.5$ V, $V_I = 4.5$ V	4			4			mA
I_{CCL}	$V_{CC} = 5.5$ V, $V_I = 0$ V	9.5			9.5			mA

‡ All typical values are at $V_{CC} = 5$ V, $T_A = 25$ °C.

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

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5$ V to 5.5 V, $C_L = 50$ pF, $R_L = 500$ Ω , $T_A = \text{MIN to MAX}$				UNIT
			SN54ALS832		SN74ALS832		
			MIN	MAX	MIN	MAX	
t_{PLH}	A or B	Y	2	10	2	8	ns
t_{PHL}			2	10	2	8	

NOTE 1: For load circuit and voltage waveforms, see page 1-12.

2 ALS AND AS CIRCUITS

**TYPES SN54AS832A, SN74AS832A
HEX 2-INPUT OR 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: SN54AS832A	-55 °C to 125 °C
SN74AS832A	0 °C to 70 °C
Storage temperature range	-65 °C to 150 °C

recommended operating conditions

		SN54AS832A			SN74AS832A			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	SN54AS832A		SN74AS832A		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}	$V_{CC} = 4.5 V \text{ to } 5.5 V, I_{OH} = -2 mA$	$V_{CC}-2$		$V_{CC}-2$		V		
	$V_{CC} = 4.5 V, I_{OH} = -3 mA$	2.4	3.2	2.4	3.2			
	$V_{CC} = 4.5 V, I_{OH} = -40 mA$	2						
	$V_{CC} = 4.5 V, I_{OH} = -48 mA$			2				
V_{OL}	$V_{CC} = 4.5 V, I_{OL} = 40 mA$	0.25 0.5				V		
	$V_{CC} = 4.5 V, I_{OL} = 48 mA$			0.35	0.5			
I_I	$V_{CC} = 5.5 V, V_I = 7 V$		0.1			0.1	mA	
I_{IH}	$V_{CC} = 5.5 V, V_I = 2.7 V$		20			20	μA	
I_{IL}	$V_{CC} = 5.5 V, V_I = 0.4 V$		-0.5			-0.5	mA	
$I_{O\ddagger}$	$V_{CC} = 5.5 V, V_O = 2.25 V$		-135			-135	mA	
I_{CCH}	$V_{CC} = 5.5 V, V_I = 4.5 V$		9	15		9	15	mA
I_{CCL}	$V_{CC} = 5.5 V, V_I = 0 V$		22	36		22	36	mA

† All typical values are at $V_{CC} = 5 V, T_A = 25 °C$.

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

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5 V \text{ to } 5.5 V,$ $C_L = 50 pF,$ $R_L = 500 \Omega,$ $T_A = \text{MIN to MAX}$				UNIT
			SN54AS832A		SN74AS832A		
			MIN	MAX	MIN	MAX	
t_{PLH}	A or B	Y	1	7	1	5.5	ns
t_{PHL}			1	6.5	1	5.5	

NOTE 1: For load circuit and voltage waveforms, see page 1-12.

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ALS AND AS CIRCUITS