

# SN54HC832, SN74HC832 HEX 2-INPUT OR DRIVERS

D2804, MARCH 1984—REVISED SEPTEMBER 1987

- High-Current Outputs Can Drive Up to 15 LSTTL Loads
- 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

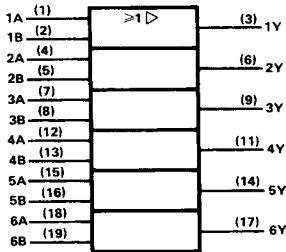
These devices contain six independent 2-input OR drivers. They perform the Boolean functions  $Y = A + B$  or  $Y = \overline{A \cdot B}$  in positive logic.

The SN54HC832 is characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74HC832 is characterized for operation from  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ .

FUNCTION TABLE  
(EACH DRIVER)

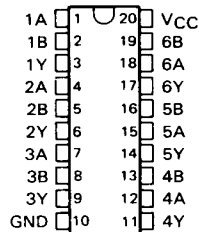
INPUTS		OUTPUT
A	B	Y
H	X	H
X	H	H
L	L	L

## logic symbol†

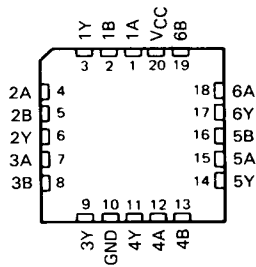


†This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

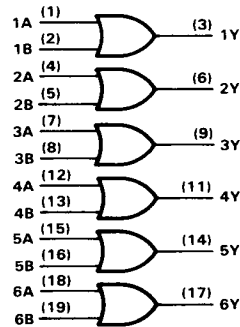
SN54HC832 . . . J PACKAGE  
SN74HC832 . . . DW OR N PACKAGE  
(TOP VIEW)



SN54HC832 . . . FK PACKAGE  
(TOP VIEW)



## logic diagram (positive logic)



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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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**SN54HC832, SN74HC832  
HEX 2-INPUT OR DRIVERS**

**absolute maximum ratings over operating free-air temperature range†**

Supply voltage, $V_{CC}$ .....	-0.5 V to 7 V
Input clamp current, $I_{IK}$ ( $V_I < 0$ or $V_I > V_{CC}$ ) .....	$\pm 20$ mA
Output clamp current, $I_{OK}$ ( $V_O < 0$ or $V_O > V_{CC}$ ) .....	$\pm 20$ mA
Continuous output current, $I_O$ ( $V_O = 0$ to $V_{CC}$ ) .....	$\pm 35$ mA
Continuous current through $V_{CC}$ or GND pins .....	$\pm 70$ mA
Lead temperature 1,6 mm (1/16 in) from case for 60 s: FK or J package .....	300°C
Lead temperature 1,6 mm (1/16 in) from case for 10 s: DW or N package .....	260°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**

		SN54HC832			SN74HC832			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
$V_{CC}$	Supply voltage	2	5	6	2	5	6	V
$V_{IH}$	High-level input voltage	$V_{CC} = 2$ V	1.5		1.5		V	
		$V_{CC} = 4.5$ V	3.15		3.15			
		$V_{CC} = 6$ V	4.2		4.2			
$V_{IL}$	Low-level input voltage	$V_{CC} = 2$ V	0	0.3	0	0.3	V	
		$V_{CC} = 4.5$ V	0	0.9	0	0.9		
		$V_{CC} = 6$ V	0	1.2	0	1.2		
$V_I$	Input voltage	0	$V_{CC}$		0	$V_{CC}$		V
$V_O$	Output voltage	0	$V_{CC}$		0	$V_{CC}$		V
$t_t$	Input transition (rise and fall) times	$V_{CC} = 2$ V	0	1000	0	1000	ns	
		$V_{CC} = 4.5$ V	0	500	0	500		
		$V_{CC} = 6$ V	0	400	0	400		
$T_A$	Operating free-air temperature	-55	125		-40	85		°C

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

PARAMETER	TEST CONDITIONS	$V_{CC}$	$T_A = 25^\circ\text{C}$			SN54HC832		SN74HC832		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$V_{OH}$	$V_I = V_{IH}$ or $V_{IL}$ , $I_{OH} = -20 \mu\text{A}$	2 V	1.9	1.998		1.9	1.9	V		
		4.5 V	4.4	4.499		4.4	4.4			
		6 V	5.9	5.999		5.9	5.9			
	4.5 V	3.98	4.30		3.7	3.84				
$V_{OL}$	$V_I = V_{IH}$ or $V_{IL}$ , $I_{OL} = 20 \mu\text{A}$	2 V		0.002	0.1		0.1	V		
		4.5 V		0.001	0.1		0.1			
		6 V		0.001	0.1		0.1			
	4.5 V		0.17	0.26		0.4	0.33			
$I_I$	$V_I = V_{IH}$ or $V_{IL}$ , $I_{OL} = 7.8 \text{ mA}$	6 V		0.15	0.26		0.4	0.33		
		6 V		$\pm 0.1$	$\pm 100$		$\pm 1000$	$\pm 1000$	nA	
$I_{CC}$	$V_I = V_{CC}$ or 0, $I_O = 0$	6 V		8		160		80	$\mu\text{A}$	
$C_i$		2 to 6 V		3	10		10	10	pF	



**SN54HC832, SN74HC832  
HEX 2-INPUT OR DRIVERS**

switching characteristics over recommended operating free-air temperature range (unless otherwise noted),  $C_L = 50 \text{ pF}$  (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC}$	$T_A = 25^\circ\text{C}$			SN54HC832		SN74HC832		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$t_{pd}$	A or B	Y	2 V	50	100	150	125	ns			
			4.5 V	10	20	30	25				
			6 V	8	17	25	21				
$t_t$		Y	2 V	28	60	90	75	ns			
			4.5 V	8	12	18	15				
			6 V	6	10	15	13				
$C_{pd}$	Power dissipation capacitance per gate			No load, $T_A = 25^\circ\text{C}$			20 pF typ				

Note 1: Load circuits and voltage waveforms are shown in Section 1.

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