

# SN54S260, SN74S260 DUAL 5-INPUT POSITIVE-NOR GATES

SDLS208

DECEMBER 1983 — REVISED MARCH 1988

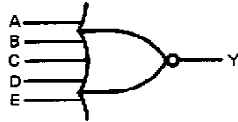
- Package Options Include Ceramic Chip Carriers and Flat Packages in Addition to Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

## description

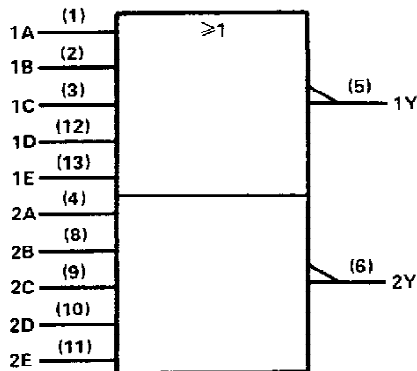
These devices contain two independent 5-input positive -NOR gates. They perform the Boolean function  $Y = \overline{A + B + C + D + E}$  in positive logic.

The SN54S260 is characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74S260 is characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

## logic diagram (each gate)

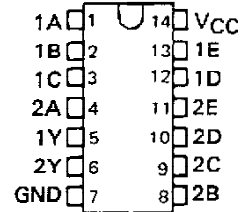


## logic symbol†

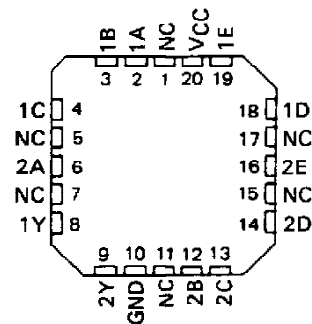


†This symbol is in accordance with ANSI/IEEE Std. 91-1984 and IEC Publication 617-12.  
Pin numbers shown are for D, J, N, and W packages.

SN54S260 . . . J OR W PACKAGE  
SN74S260 . . . D OR N PACKAGE  
(TOP VIEW)



SN54S260 . . . FK PACKAGE  
(TOP VIEW)



NC - No internal connection

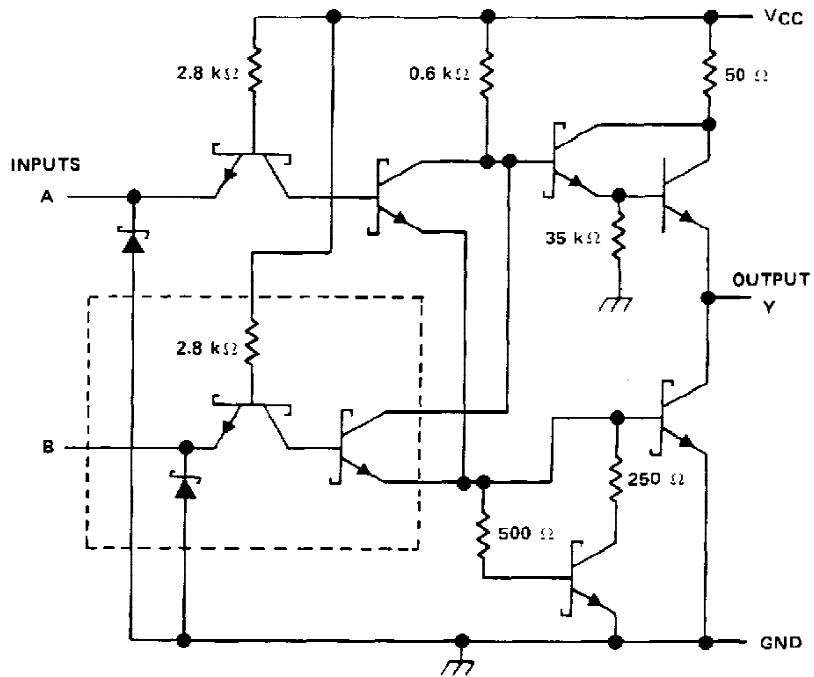
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# SN54S260, SN74S260 DUAL 5-INPUT POSITIVE-NOR GATES

schematic (each gate)



Resistor values shown are nominal.  
The portion of the schematic within the dashed-line is repeated for each additional input.

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

Supply voltage, $V_{CC}$ (see Note 1)	7 V
Input voltage	5.5 V
Operating free-air temperature range: SN54'	$-55^{\circ}\text{C}$ to $125^{\circ}\text{C}$
SN74'	$0^{\circ}\text{C}$ to $70^{\circ}\text{C}$
Storage temperature range	$-65^{\circ}\text{C}$ to $150^{\circ}\text{C}$

NOTE 1: Voltage values are with respect to network ground terminal.

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# SN54S260, SN74S260 DUAL 5-INPUT POSITIVE-NOR GATES

## recommended operating conditions

	SN54S260			SN74S260			UNIT	
	MIN	TYP	MAX	MIN	TYP	MAX		
$V_{CC}$ Supply voltage	4.5	5	5.5	4.75	5	5.25	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	-1			-1			mA	
$I_{OL}$ Low-level output current	20			20			mA	
$T_A$ Operating free-air temperature	-55			0			70	°C

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

PARAMETER	TEST CONDITIONS †	SN54S260			SN74S260			UNIT	
		MIN	TYP‡	MAX	MIN	TYP‡	MAX		
$V_{IK}$	$V_{CC} = \text{MIN}$ , $I_I = -18 \text{ mA}$	-1.2			-1.2			V	
$V_{OH}$	$V_{CC} = \text{MIN}$ , $V_{IL} = 0.8 \text{ V}$ , $I_{OH} = -1 \text{ mA}$	2.5	3.4		2.7	3.4		V	
$V_{OL}$	$V_{CC} = \text{MIN}$ , $V_{IH} = 2 \text{ V}$ , $I_{OL} = 20 \text{ mA}$	0.5			0.5			V	
$I_I$	$V_{CC} = \text{MAX}$ , $V_I = 5.5 \text{ V}$	1			1			mA	
$I_{IH}$	$V_{CC} = \text{MAX}$ , $V_{IH} = 2.7 \text{ V}$	50			50			µA	
$I_{IL}$	$V_{CC} = \text{MAX}$ , $V_{IL} = 0.8 \text{ V}$	-2			-2			mA	
$I_{OS}§$	$V_{CC} = \text{MAX}$	-40		-100	-40		-100	mA	
$I_{CCH}$	$V_{CC} = \text{MAX}$ , $V_I = 0 \text{ V}$	17			17			29	mA
$I_{CCL}$	$V_{CC} = \text{MAX}$ , See Note 2	26			26			45	mA

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

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

§ Not more than one output should be shorted at a time, and the duration of the short-circuit should not exceed one second.

NOTE 2: One input at 4.5 V, all others at GND.

## switching characteristics, $V_{CC} = 5 \text{ V}$ , $T_A = 25^\circ\text{C}$ (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$t_{PLH}$	Any	Y	$R_L = 280 \Omega$ , $C_L = 15 \text{ pF}$		4	5.5	ns
$t_{PHL}$					4	6	ns

NOTE 3: See General Information Section for load circuits and voltage waveforms.

  
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Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
SN54S260J	ACTIVE	CDIP	J	14	1	None	Call TI	Level-NC-NC-NC
SN74S260D	ACTIVE	SOIC	D	14	50	Pb-Free (RoHS)	CU NIPDAU	Level-2-260C-1 YEAR/ Level-1-235C-UNLIM
SN74S260DR	ACTIVE	SOIC	D	14	2500	Pb-Free (RoHS)	CU NIPDAU	Level-2-260C-1 YEAR/ Level-1-235C-UNLIM
SN74S260N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74S260N3	OBSOLETE	PDIP	N	14		None	Call TI	Call TI
SNJ54S260FK	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
SNJ54S260J	ACTIVE	CDIP	J	14	1	None	Call TI	Level-NC-NC-NC
SNJ54S260W	ACTIVE	CFP	W	14	1	None	Call TI	Level-NC-NC-NC

<sup>(1)</sup> The marketing status values are defined as follows:

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<sup>(3)</sup> MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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