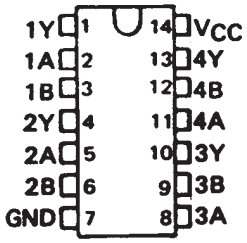
- **Current Sinking Capability up to 80 mA**
- **Guaranteed Fan-Out of 30 Series 54/74 Loads**
- **Dependable Texas Instruments Quality and Reliability**

SN5439 . . . J PACKAGE
SN7439 . . . N PACKAGE
(TOP VIEW)

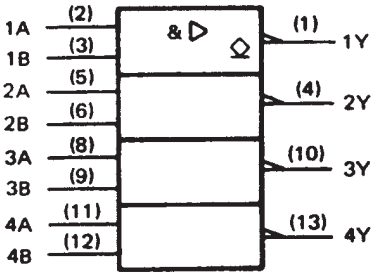


description

These devices contain four independent 2-input NAND buffers. The open-collector outputs require pull-up resistors to perform correctly. They may be connected to other open-collector outputs to implement active-low wired-OR or active-high wired-AND functions. Open-collector devices are often used to generate higher V_{OH} levels.

The SN5439 is characterized for operation over the full military temperature range of −55°C to 125°C. The SN7439 is characterized for operation from 0°C to 70°C.

logic symbol†

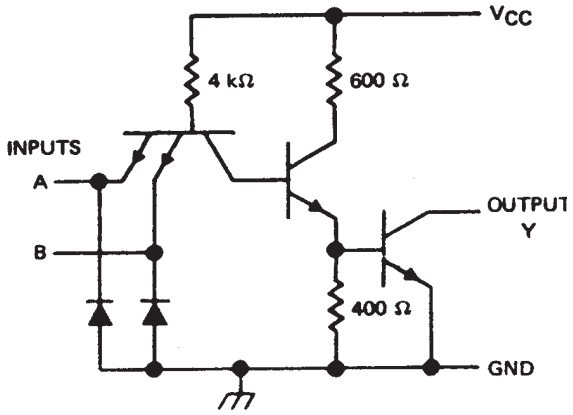


† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

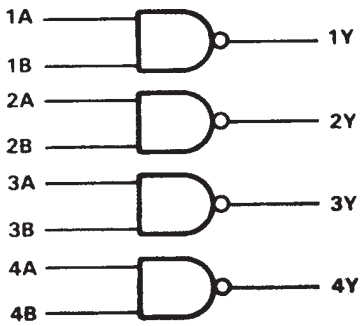
FUNCTION TABLE (each gate)

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

schematics (each gate)



logic diagram



positive logic

$$Y = \overline{A \cdot B} \text{ or } Y = \overline{A} + \overline{B}$$

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

Supply voltage, V_{CC} (see Note 1) 7V
Input voltage 7V
Off-state output voltage 7V
Operating free-air temperature range: SN5439 . . . . . –55°C to 125°C
SN7439 . . . . . 0°C to 70°C
Storage temperature range . . . . . –65°C to 150°C

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

recommended operating conditions

		SN5439			SN7439			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
V_{OH}	High-level output voltage			5.5			5.5	V
I_{OL}	Low-level output voltage			60			60	mA
							80†	
T_A	Operating free-air temperature	–55		125	0		70	°C

†The extended limit applies only if V_{CC} is maintained between 4.75 and 5.25 V.

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

PARAMETER	TEST CONDITIONS†	SN5439			SN7439			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	
V_{IK}	V_{CC} = MIN, I_I = –12 mA			–1.5			–1.5	V
I_{OH}	V_{CC} = MIN, V_{IL} = 0.8 V, V_{OH} = 5.5 V						0.25	mA
	V_{CC} = MIN, V_{IL} = 0.7 V, V_{OH} = 5.5 V			0.25				
V_{OL}	V_{CC} = MIN, I_{OL} = 48 mA			0.4			0.4	V
	V_{CC} = MIN, I_{OL} = 60 mA			0.5			0.5	
	V_{CC} = 4.75 V, I_{OL} = 80 mA						0.6	
I_I	V_{CC} = MAX, V_I = 5.5 V			1			1	mA
I_{IH}	V_{CC} = MAX, V_I = 2.4 V			40			40	μA
I_{IL}	V_{CC} = MAX, V_I = 0.4 V			–1.6			–1.6	mA
I_{CCH}	V_{CC} = MAX, V_I = 0			54			54	mA

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

switching characteristics, V_{CC} = 5 V, T_A = 25°C (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	SN5439		SN7439		UNIT
				MIN	MAX	MIN	MAX	
t_{PLH}	A or B	Y	R_L = 133 Ω, C_L = 45 pF		22		22	ns
t_{PHL}					18		18	

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

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