

**TTL
MSI**

**TYPES SN54LS266, SN74LS266
QUADRUPLE 2-INPUT EXCLUSIVE-NOR GATES
WITH OPEN-COLLECTOR OUTPUTS**

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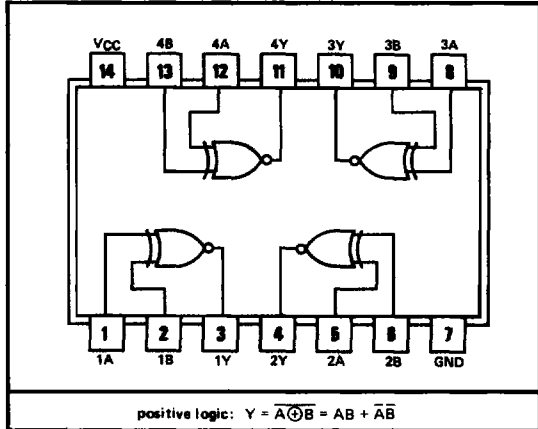
- Can Be Used as a 4-Bit Digital Comparator
- Input Clamping Diodes Simplify System Design
- Fully Compatible with Most TTL and DTL Circuits

FUNCTION TABLE

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

H = high level, L = low level

SN54LS266 . . . J OR W PACKAGE
SN74LS266 . . . J OR N PACKAGE
(TOP VIEW)

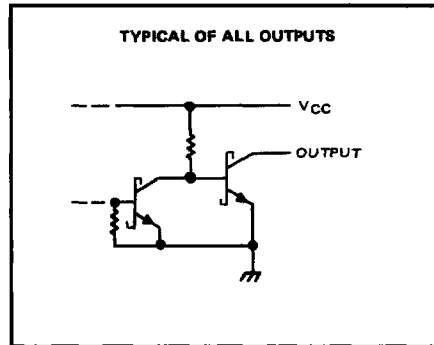
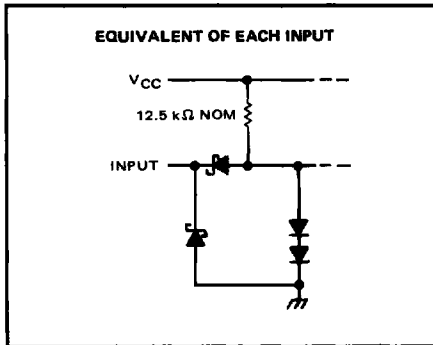


positive logic: $Y = \overline{A \oplus B} = AB + \overline{A}\overline{B}$

description

The 'LS266 is comprised of four independent 2-input exclusive-NOR gates with open-collector outputs. The open-collector outputs permit tying outputs together for multiple-bit comparisons.

schematics of inputs and outputs



TYPES SN54LS266, SN74LS266 QUADRUPLE 2-INPUT EXCLUSIVE-NOR GATES WITH OPEN-COLLECTOR OUTPUTS

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

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage	7 V
Operating free-air temperature range: SN54LS266	-55°C to 125°C
SN74LS266	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

	SN54LS266			SN74LS266			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply voltage, V_{CC}	4.5	5	5.5	4.75	5	5.25	V
High-level output voltage, V_{OH}	5.5			5.5			V
Low-level output current, I_{OL}	4			8			mA
Operating free-air temperature, T_A	-55			125			°C

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

PARAMETER	TEST CONDITIONS†	SN54LS266		SN74LS266		UNIT	
		MIN	TYP‡	MAX	MIN		TYP‡
V_{IH} High-level input voltage		2		2		V	
V_{IL} Low-level input voltage		0.7		0.8		V	
V_{IK} Input clamp voltage	$V_{CC} = \text{MIN}$, $I_I = -18 \text{ mA}$	-1.5		-1.5		V	
I_{OH} High-level output current	$V_{CC} = \text{MIN}$, $V_{IH} = 2 \text{ V}$, $V_{IL} = V_{IL \text{ max}}$, $V_{OH} = 5.5 \text{ V}$	100		100		µA	
V_{OL} Low-level output voltage	$V_{CC} = \text{MIN}$, $V_{IH} = 2 \text{ V}$, $V_{IL} = V_{IL \text{ max}}$	$I_{OL} = 4 \text{ mA}$	0.25	0.4	0.25	0.4	V
		$I_{OL} = 8 \text{ mA}$			0.35	0.5	
I_I Input current at maximum input voltage	$V_{CC} = \text{MAX}$, $V_I = 7 \text{ V}$	0.2		0.2		mA	
I_{IH} High-level input current	$V_{CC} = \text{MAX}$, $V_I = 2.7 \text{ V}$	40		40		µA	
I_{IL} Low-level input current	$V_{CC} = \text{MAX}$, $V_I = 0.4 \text{ V}$	-0.8		-0.8		mA	
I_{CC} Supply current	$V_{CC} = \text{MAX}$, See Note 2	8	13	8	13	mA	

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

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

NOTE 2: I_{CC} is measured with one input of each gate at 4.5 V, the other inputs grounded, and the outputs open.

switching characteristics, $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ \text{C}$

PARAMETER‡	FROM (INPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	A or B	Other input low	C _L = 15 pF, R _L = 2 kΩ, See Note 3	18	30	ns
t_{PHL}				18	30	
t_{PLH}	A or B	Other input high		18	30	ns
t_{PHL}				18	30	

‡ t_{PLH} ≡ propagation delay time, low-to-high-level output

t_{PHL} ≡ propagation delay time, high-to-low-level output

NOTE 3: Load circuit and voltage waveforms are shown on page 3-11.