

74LS266
Gate

Quad 2-Input Exclusive-NOR Gate (Open Collector)
Product Specification

Logic Products

FUNCTION TABLE

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

H = HIGH voltage level
L = LOW voltage level

ORDERING CODE

PACKAGES	COMMERCIAL RANGE V _{CC} = 5V ± 5%; T _A = 0°C to +70°C
Plastic DIP	N74LS266N

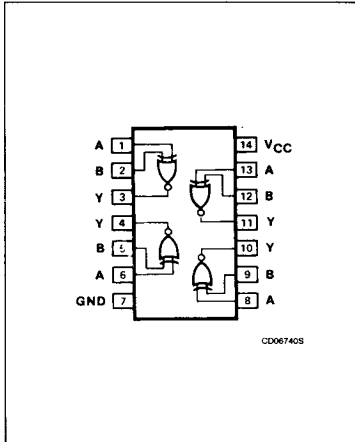
NOTE:
For information regarding devices processed to Military Specifications, see the Signetics Military Products Data Manual.

INPUT AND OUTPUT LOADING AND FAN-OUT TABLE

PINS	DESCRIPTION	74LS
A, B	Inputs	2LSuI
Y	Output	10LSuI

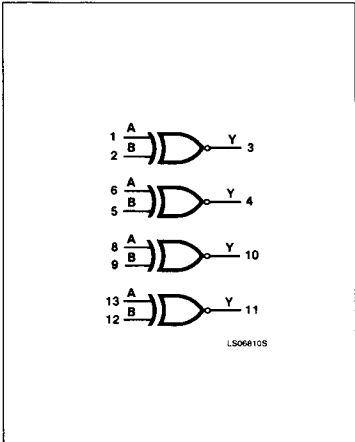
NOTE:
A 74LS unit load (LSuI) is 20µA I_{IH} and -0.4mA I_{IL}.

PIN CONFIGURATION



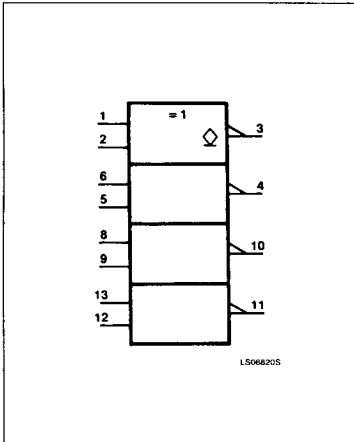
December 4, 1985

LOGIC SYMBOL



5-461

LOGIC SYMBOL (IEEE/IEC)



853-470 81500

Gate

74LS266

ABSOLUTE MAXIMUM RATINGS (Over operating free-air temperature range unless otherwise noted.)

PARAMETER	74LS	UNIT
V_{CC} Supply voltage	7.0	V
V_{IN} Input voltage	-0.5 to +7.0	V
I_{IN} Input current	-30 to +1	mA
V_{OUT} Voltage applied to output in HIGH output state	-0.5 to + V_{CC}	V
T_A Operating free-air temperature range	0 to 70	°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	74LS			UNIT
	Min	Nom	Max	
V_{CC} Supply voltage	4.75	5.0	5.25	V
V_{IH} HIGH-level input voltage	2.0			V
V_{IL} LOW-level input voltage			+0.8	V
I_{IK} Input clamp current			-18	mA
V_{OH} HIGH-level output voltage			5.5	V
I_{OL} LOW-level output current			8	mA
T_A Operating free-air temperature	0		70	°C

DC ELECTRICAL CHARACTERISTICS (Over recommended operating free-air temperature range unless otherwise noted.)

PARAMETER	TEST CONDITIONS ¹	74LS266			UNIT
		Min	Typ ²	Max	
I_{OH} HIGH-level output current	$V_{CC} = \text{MIN}, V_{IH} = \text{MIN}, V_{IL} = \text{MAX}, V_{OH} = 5.5\text{V}$			100	μA
V_{OL} LOW-level output voltage	$V_{CC} = \text{MIN}, V_{IH} = \text{MIN}, V_{IL} = \text{MAX}$		0.35	0.5	V
	$I_{OL} = \text{MAX}$ $I_{OL} = 4\text{mA}$		0.25	0.4	V
V_{IK} Input clamp voltage	$V_{CC} = \text{MIN}, I_I = I_{IK}$			-1.5	V
I_I Input current at maximum input voltage	$V_{CC} = \text{MAX}, V_I = 7.0\text{V}$			0.2	mA
I_{IH} HIGH-level input current	$V_{CC} = \text{MAX}, V_I = 2.7\text{V}$			40	μA
I_{IL} LOW-level input current	$V_{CC} = \text{MAX}, V_I = 0.4\text{V}$			-0.8	mA
I_{CC} Supply current ⁴ (total)	$V_{CC} = \text{MAX}$		8	13	mA

NOTES:

- 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 $V_{CC} = 5\text{V}$, $T_A = 25^\circ\text{C}$.
- I_{OS} is tested with $V_{OUT} = +0.5\text{V}$ and $V_{CC} = V_{CC} \text{ MAX} + 0.5\text{V}$. Not more than one output should be shorted at a time and duration of the short circuit should not exceed one second.
- Measure I_{CC} with one input of each gate at 4.5V, the other inputs grounded and the outputs open.

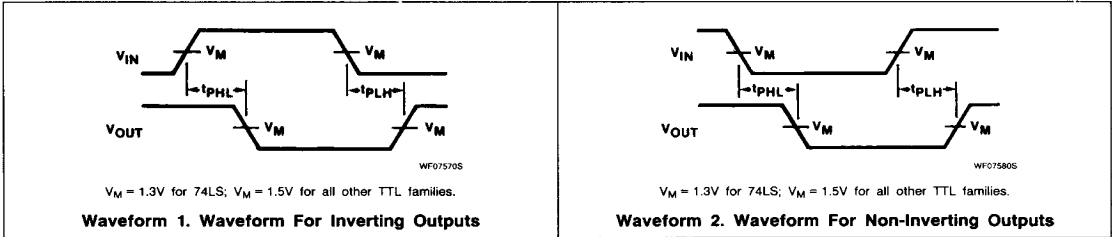
AC ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$, $V_{CC} = 5.0\text{V}$

PARAMETER		TEST CONDITIONS	74LS		UNIT
			C _L = 15pF, R _L = 2kΩ		
			Min	Max	
t _{PLH}	Propagation delay	Waveform 1, other input LOW		30	ns
t _{PHL}	A or B to output			30	
t _{PLH}	Propagation delay	Waveform 2, other input HIGH		30	ns
t _{PHL}	A or B to output			30	

Gate

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AC WAVEFORMS



TEST CIRCUITS AND WAVEFORMS

