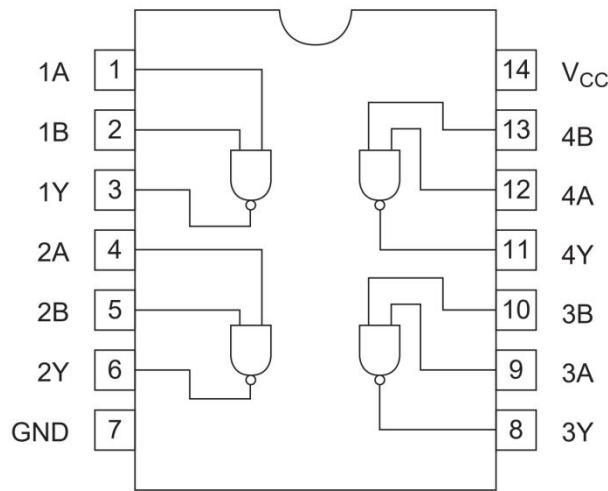


1. DESCRIPTION

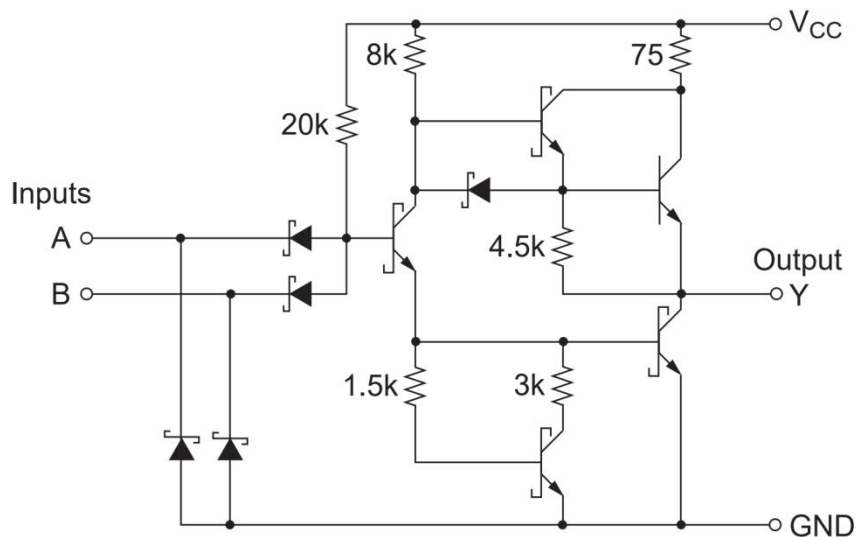
The XD74LS00 and XL74LS00 devices contain 4 independent 2-input NAND gates. The devices perform the Boolean function $Y = \overline{A \cdot B}$ or $Y = \overline{A + B}$ in positive logic.

The XD74LS00 / XL74LS00 characterized for operation from 0 °c to 70 °c.

2. PIN ARRANGEMENT



3. EQUIVALENT CIRCUIT DIAGRAM



4. FUNCTION TABLE

Inputs		Output
A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

5. ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC} ^{Note}	7	V
Input voltage	V_{IN}	7	V
Power dissipation	P_T	400	mW
Storage temperature	T_{stg}	-50 to +150	°C

Note: Voltage value, unless otherwise noted, are with respect to network ground terminal.

6. RECOMMENDED OPERATING CONDITIONS

Item	Symbol	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
Output current	I_{OH}	—	—	-400	μA
	I_{OL}	—	—	8	mA
Operating temperature	T_{opr}	0	25	70	°C

7. ELECTRICAL CHARACTERISTICS

Item	Symbol	min.	Typ.	max	Unit	Condition
Input voltage	V_{IH}	2.0	—	—	V	—
	V_{IL}	—	—	0.8	V	—
Output voltage	V_{OH}	2.7	—	—	V	$V_{CC} = 4.75\text{ V}, V_{IL} = 0.8\text{ V}, I_{OH} = -400\text{ }\mu\text{A}$
	V_{OL}	—	—	0.5	V	$V_{CC} = 4.75\text{ V}, V_{IH} = 2\text{ V}$
—		—	0.4			
Input current	I_{IH}	—	—	20	μA	$V_{CC} = 5.25\text{ V}, V_I = 2.7\text{ V}$
	I_{IL}	—	—	-0.4	mA	$V_{CC} = 5.25\text{ V}, V_I = 0.4\text{ V}$
	I_I	—	—	0.1	mA	$V_{CC} = 5.25\text{ V}, V_I = 7\text{ V}$
Short-circuit output current	I_{OS}	-20	—	-100	mA	$V_{CC} = 5.25\text{ V}$
Supply current	I_{CCH}	—	1	3	mA	$V_{CC} = 5.25\text{ V}$
	I_{CCL}	—	2.6	6	mA	$V_{CC} = 5.25\text{ V}$
Input clamp voltage	V_{IK}	—	—	-1.5	V	$V_{CC} = 4.75\text{ V}, I_{IN} = -18\text{ mA}$

Note: * $V_{CC} = 5\text{ V}, T_a = 25^\circ\text{C}$

8. SWITCHING CHARACTERISTICS

Item	Symbol	min.	Typ.	max	Unit	Condition
Propagation delay time	t_{PLH}	—	12	25	ns	$C_L = 15\text{ pF}, R_L = 2\text{ k}\Omega$
	t_{PHL}	—	13	25	ns	

9. ORDERING INFORMATION

Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (° C)	MSL	Transport Media	Package Quantity
XD74LS00	XD74LS00	DIP14	19.20 * 6.30	0 to 70	MSL3	Tube 25	1000
XL74LS00	XL74LS00	SOP14	10.06 * 5.50	0 to 70	MSL3	T&R	2500

10. DIMENSIONAL DRAWINGS

