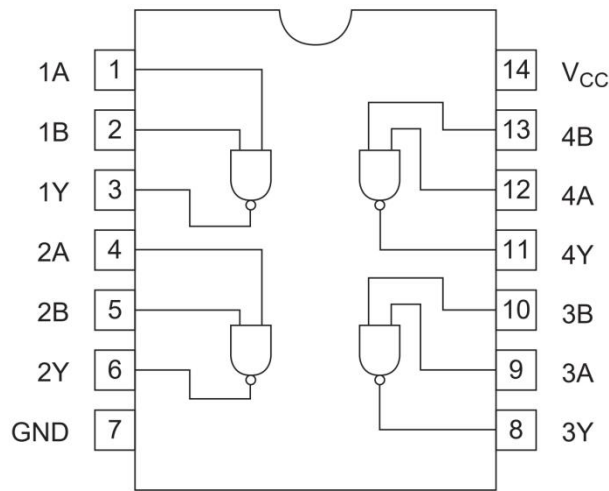


## 1. DESCRIPTION

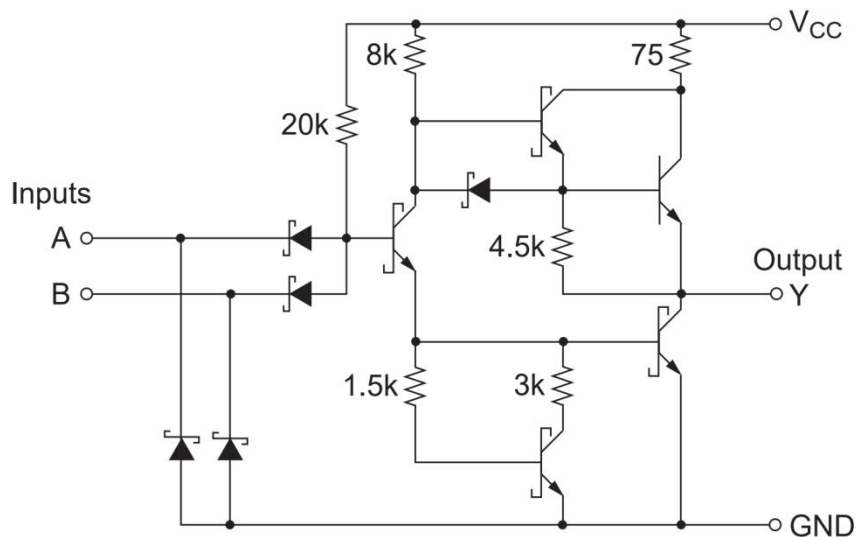
The XD74LS00 and XL74LS00 devices contain 4 independent 2-input NAND gates. The devices perform the Boolean function  $Y = \overline{A \cdot B}$  or  $Y = \overline{A + B}$  in positive logic.

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	$V_{CC}$ <sup>Note</sup>	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

