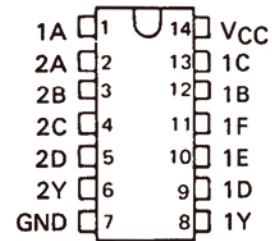


description

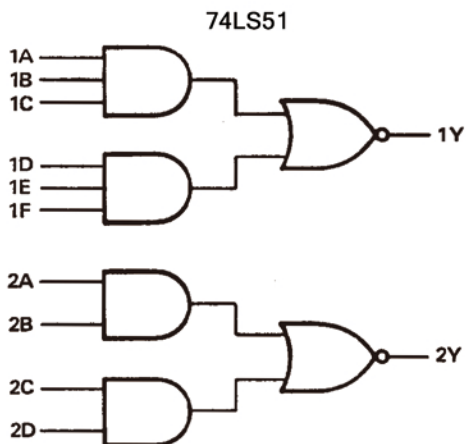
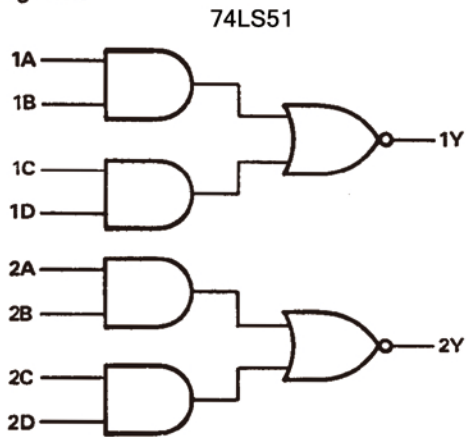
The 74LS51 contain two independent 2-wide 2-input AND-OR-INVERT gates. They perform the Boolean function $Y = \overline{AB + CD}$.

The 74LS51 contains one 2-wide 3-input and one 2-wide 2-input AND-OR-INVERT gates. They perform the Boolean functions $1Y = \overline{(1A \cdot 1B \cdot 1C) + (1D \cdot 1E \cdot 1F)}$ and $2Y = \overline{(2A \cdot 2B) + (2C \cdot 2D)}$.

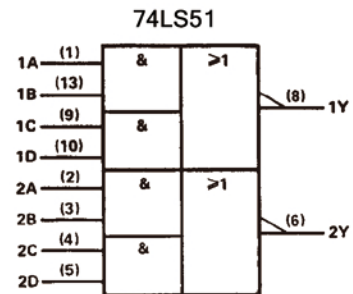
**XD74LS51
(TOP VIEW)**



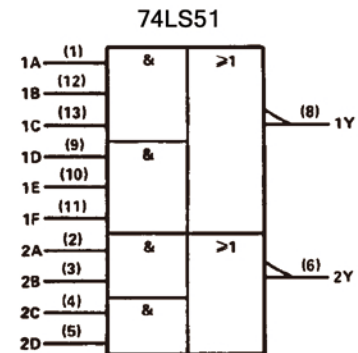
logic diagrams



logic symbols †



positive logic: $Y = \overline{AB + CD}$

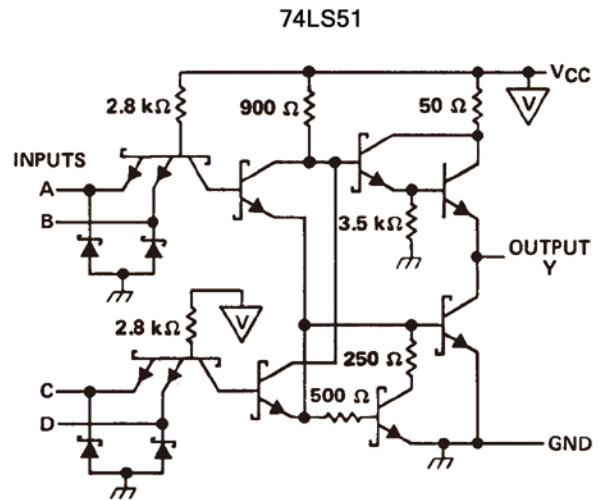
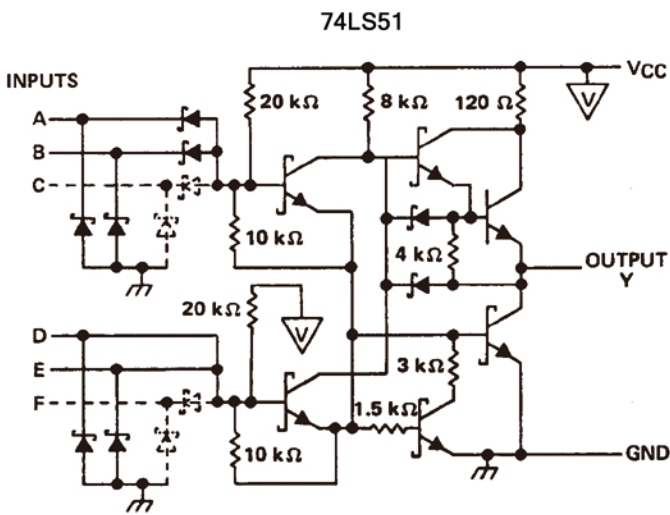
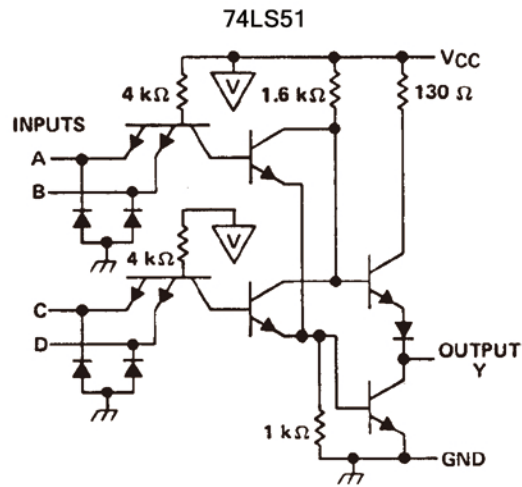


positive logic:

$$1Y = \overline{(1A \cdot 1B \cdot 1C) + (1D \cdot 1E \cdot 1F)}$$

$$2Y = \overline{(2A \cdot 2B) + (2C \cdot 2D)}$$

schematics



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

Supply voltage, V_{CC} (See Note 1): 74LS51	7 V
Input voltage: 74LS51	5.5 V
74LS51	7 V
Operating free-air temperature range: 74LS51	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

	74LS51			UNIT
	MIN	NOM	MAX	
V _{CC} Supply voltage	4.75	5	5.25	V
V _{IH} High-level input voltage	2			V
V _{IL} Low-level input voltage			0.8	V
I _{OH} High-level output current			-0.4	mA
I _{OL} Low-level output current			8	mA
T _A Operating free-air temperature	0		70	°C

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

PARAMETER	TEST CONDITIONS †	74LS51			UNIT
		MIN	TYP ‡	MAX	
V _{IK}	V _{CC} = MIN, I _I = -18 mA			-1.5	V
V _{OH}	V _{CC} = MIN, V _{IL} = MAX, I _{OH} = -0.4 mA	2.7	3.4		V
V _{OL}	V _{CC} = MIN, V _{IH} = 2 V, I _{OL} = 4 mA		0.25	0.4	V
	V _{CC} = MIN, V _{IH} = 2 V, I _{OL} = 8 mA		0.35	0.5	
I _I	V _{CC} = MAX, V _I = 7 V			0.1	mA
I _{IH}	V _{CC} = MAX, V _I = 2.7 V			20	μA
I _{IL}	V _{CC} = MAX, V _I = 0.4 V			-0.4	mA
I _{OS} §	V _{CC} = MAX	-20		-100	mA
I _{CCH}	V _{CC} = MAX, V _I = 0 V		0.8	1.6	mA
I _{CCL}	V _{CC} = MAX, See Note 2		1.4	2.8	mA

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

‡ All typical values are at V_{CC} = 5 V, T_A = 25° C.

§ Not more than one output should be shorted at a time, and the duration of the short-circuit should not exceed one second.

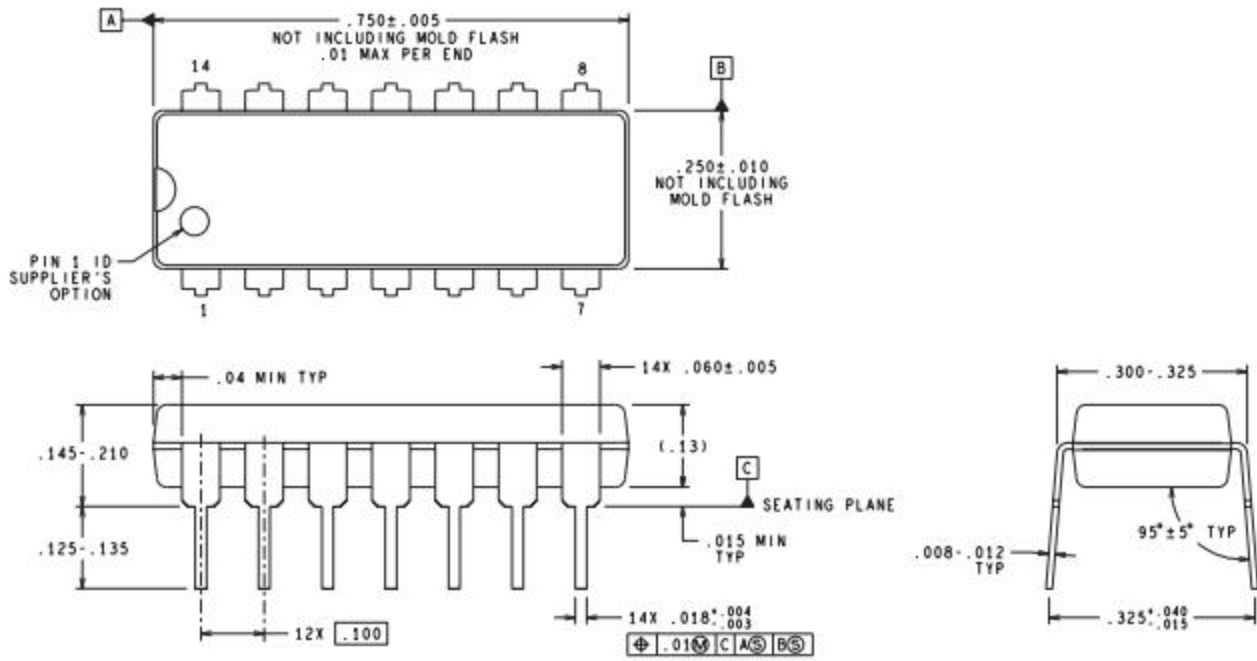
NOTE 2: All inputs of one AND gate at 4.5 V, all others at GND.

switching characteristics, V_{CC} = 5 V, T_A = 25° C (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t _{PLH}	Any	Y	R _L = 2 kΩ, C _L = 15 pF		12	20	ns
t _{PHL}					12.5	20	ns

NOTE 3: Load circuits and voltage waveforms are shown in Section 1.

DIP14



DIMENSIONS ARE IN INCHES
DIMENSIONS IN () FOR REFERENCE ONLY

以上信息仅供参考. 如需帮助联系客服人员。谢谢 XINLUDA