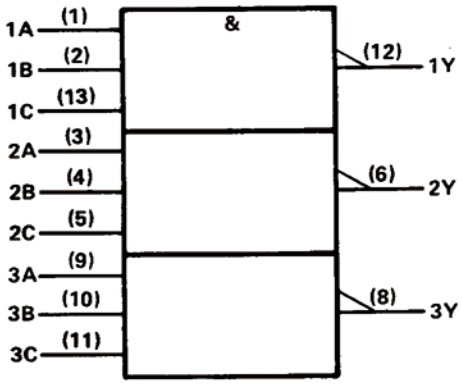
XD74LS10 DIP14 / XL74LS10 SOP14

The XD74LS10 and XL74LS10 are characterized for operation over the full military temperature range of −55°C to 125°C. The XD74LS10 and XL74LS10 are characterized for operation from 0°C to 70°C.

FUNCTION TABLE (each gate)

INPUTS			OUTPUT
A	B	C	Y
H	H	H	L
L	X	X	H
X	L	X	H
X	X	L	H

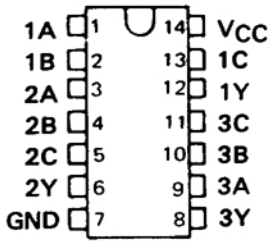
logic symbol†



$Y = \overline{A \cdot B \cdot C}$ or $Y = \overline{A} + \overline{B} + \overline{C}$

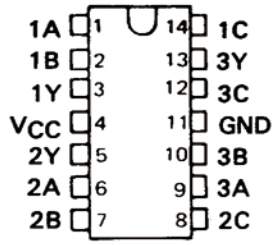
XD74LS10 . . . **J PACKAGE**
XL74LS10 . . . **J PACKAGE**

(TOP VIEW)



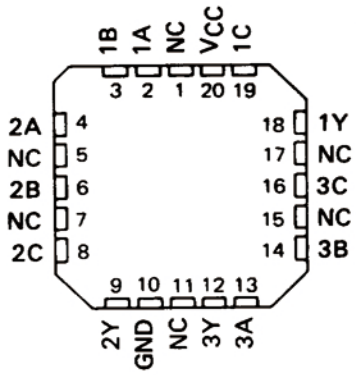
XD74LS10 . . . **W PACKAGE**

(TOP VIEW)



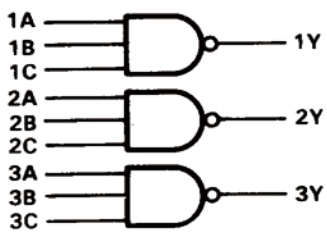
XD74LS10,XL74LS10 . . . **FK PACKAGE**

(TOP VIEW)



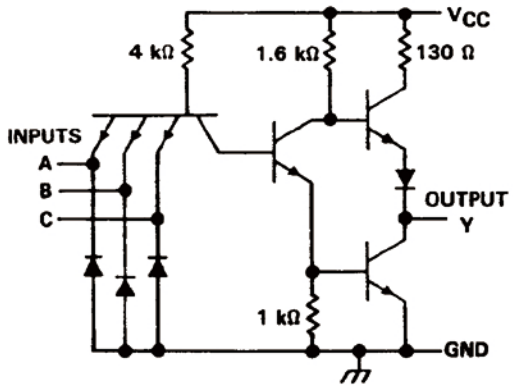
NC - No internal connection

logic diagram (positive logic)

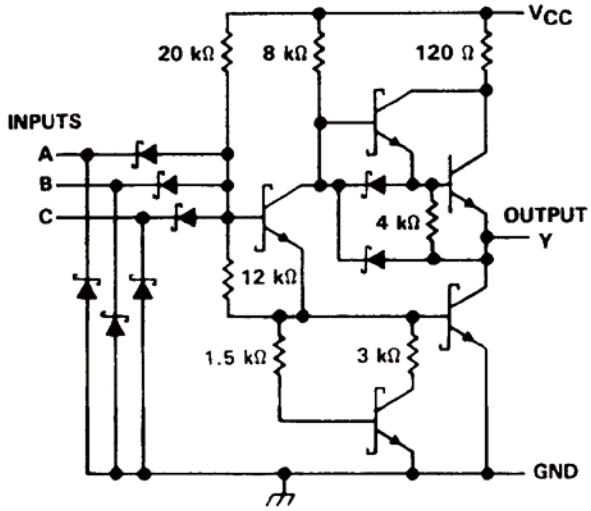


schematics (each gate)

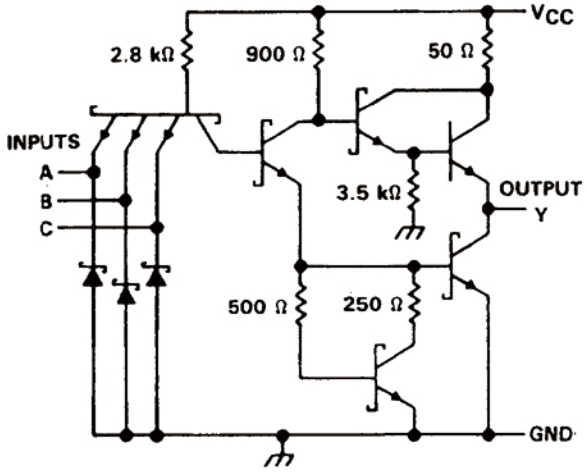
10



'LS10



S10



Resistor values shown are nominal.

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

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage: '10, 'S10	5.5 V
'LS10	7 V
Operating free-air temperature range: XD74'	−55°C to 125°C
XL74'	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

		XD74LS10			XL74LS10			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC}	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.8			0.8	V
I_{OH}	High-level output current			−0.4			−0.4	mA
I_{OL}	Low-level output current			16			16	mA
T_A	Operating free-air temperature	−55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	XD74LS10			XL74LS10			UNIT
		MIN	TYP‡	MAX	MIN	TYP‡	MAX	
V_{IK}	V_{CC} = MIN, I_I = −12 mA			−1.5			−1.5	V
V_{OH}	V_{CC} = MIN, V_{IL} = 0.8 V, I_{OH} = −0.4 mA	2.4	3.4		2.4	3.4		V
V_{OL}	V_{CC} = MIN, V_{IH} = 2 V, I_{OL} = 16 mA		0.2	0.4		0.2	0.4	V
I_I	V_{CC} = MAX, V_I = 5.5 V			1			1	mA
I_{IH}	V_{CC} = MAX, V_I = 2.4 V			40			40	μA
I_{IL}	V_{CC} = MAX, V_I = 0.4 V			−1.6			−1.6	mA
I_{OS}§	V_{CC} = MAX	−20		−55	−18		−55	mA
I_{CCH}	V_{CC} = MAX, V_I = 0 V		3	6		3	6	mA
I_{CCL}	V_{CC} = MAX, V_I = 4.5 V		9	16.5		9	16.5	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.

switching characteristics, V_{CC} = 5 V, T_A = 25°C (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	A, B or C	Y	R_L = 400 Ω, C_L = 15 pF		11	22	ns
t_{PHL}					7	15	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

recommended operating conditions

		XD74LS10			XL74LS10			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC}	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.7			0.8	V
I_{OH}	High-level output current			−0.4			−0.4	mA
I_{OL}	Low-level output current			4			8	mA
T_A	Operating free-air temperature	−55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	XD74LS10			XL74LS10			UNIT
		MIN	TYP‡	MAX	MIN	TYP‡	MAX	
V_{IK}	V_{CC} = MIN, I_I = −18 mA			−1.5			−1.5	V
V_{OH}	V_{CC} = MIN, V_{IL} = MAX, I_{OH} = −0.4 mA	2.5	3.4		2.7	3.4		V
V_{OL}	V_{CC} = MIN, V_{IH} = 2 V, I_{OL} = 4 mA		0.25	0.4			0.4	V
	V_{CC} = MIN, V_{IH} = 2 V, I_{OL} = 8 mA					0.25	0.5	
I_I	V_{CC} = MAX, V_I = 7 V			0.1			0.1	mA
I_{IH}	V_{CC} = MAX, V_I = 2.7 V			20			20	μA
I_{IL}	V_{CC} = MAX, V_I = 0.4 V			−0.4			−0.4	mA
I_{OS}§	V_{CC} = MAX	−20		−100	−20		−100	mA
I_{CCH}	V_{CC} = MAX, V_I = 0 V		0.6	1.2		0.6	1.2	mA
I_{CCL}	V_{CC} = MAX, V_I = 4.5 V		1.8	3.3		1.8	3.3	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.

switching characteristics, V_{CC} = 5 V, T_A = 25°C (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	A, B or C	Y	R_L = 2 kΩ, C_L = 15 pF		9	15	ns
t_{PHL}					10	15	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

recommended operating conditions

								UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC}	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.8			0.8	V
I_{OH}	High-level output current			−1			−1	mA
I_{OL}	Low-level output current			20			20	mA
T_A	Operating free-air temperature	−55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †							UNIT
				MIN	TYP‡	MAX	MIN TYP‡ MAX	
V_{IK}	V_{CC} = MIN,	I_I = −18 mA				−1.2	−1.2	V
V_{OH}	V_{CC} = MIN,	V_{IL} = 0.8 V,	I_{OH} = −1 mA	2.5	3.4		2.7 3.4	V
V_{OL}	V_{CC} = MIN,	V_{IH} = 2 V,	I_{OL} = 20 mA			0.5	0.5	V
I_I	V_{CC} = MAX,	V_I = 5.5 V				1	1	mA
I_{IH}	V_{CC} = MAX,	V_I = 2.7 V				50	50	μA
I_{IL}	V_{CC} = MAX,	V_I = 0.5 V				−2	−2	mA
I_{OS}§	V_{CC} = MAX			−40		−100	−40 −100	mA
I_{CCH}	V_{CC} = MAX,	V_I = 0 V			7.5	12	7.5 12	mA
I_{CCL}	V_{CC} = MAX,	V_I = 4.5 V			15	27	15 27	mA

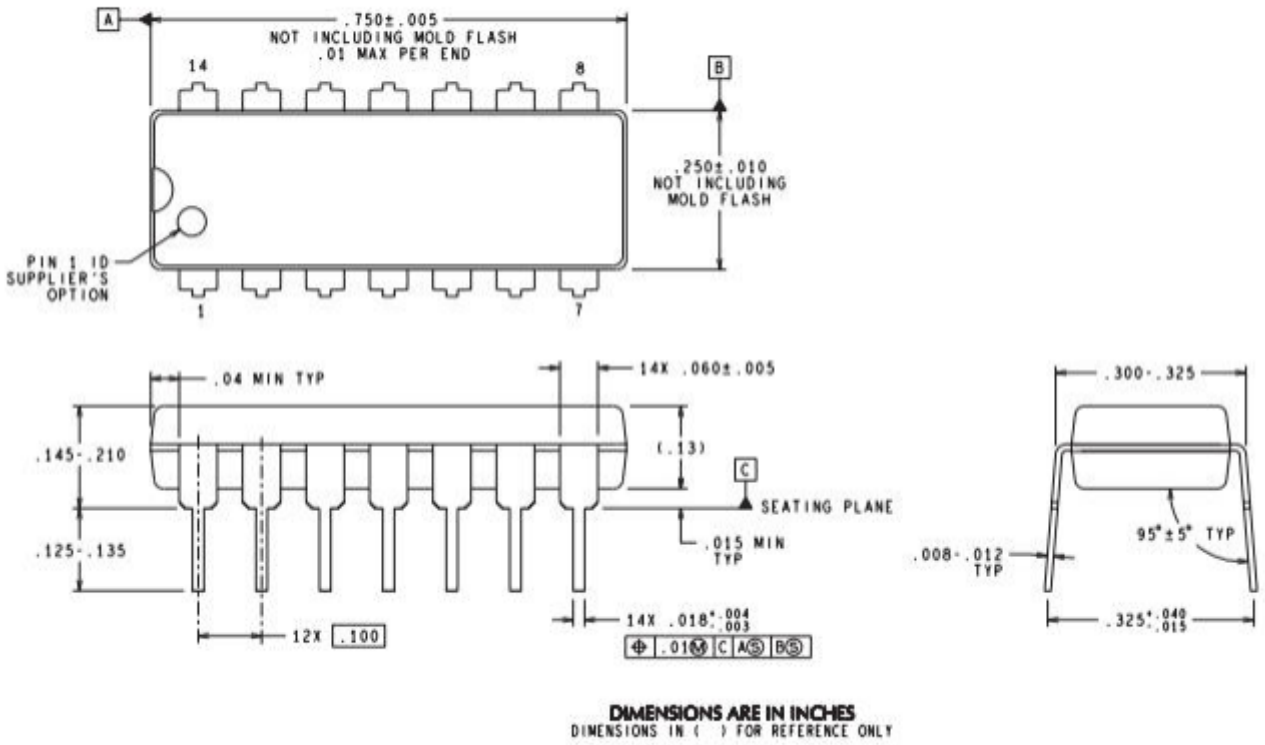
† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ All typical values are at V_{CC} = 5 V, T_A = 25°C.
§ Not more than one output should be shorted at a time, and the duration of the short-circuit should not exceed one second.

switching characteristics, V_{CC} = 5 V, T_A = 25°C (see note 2)

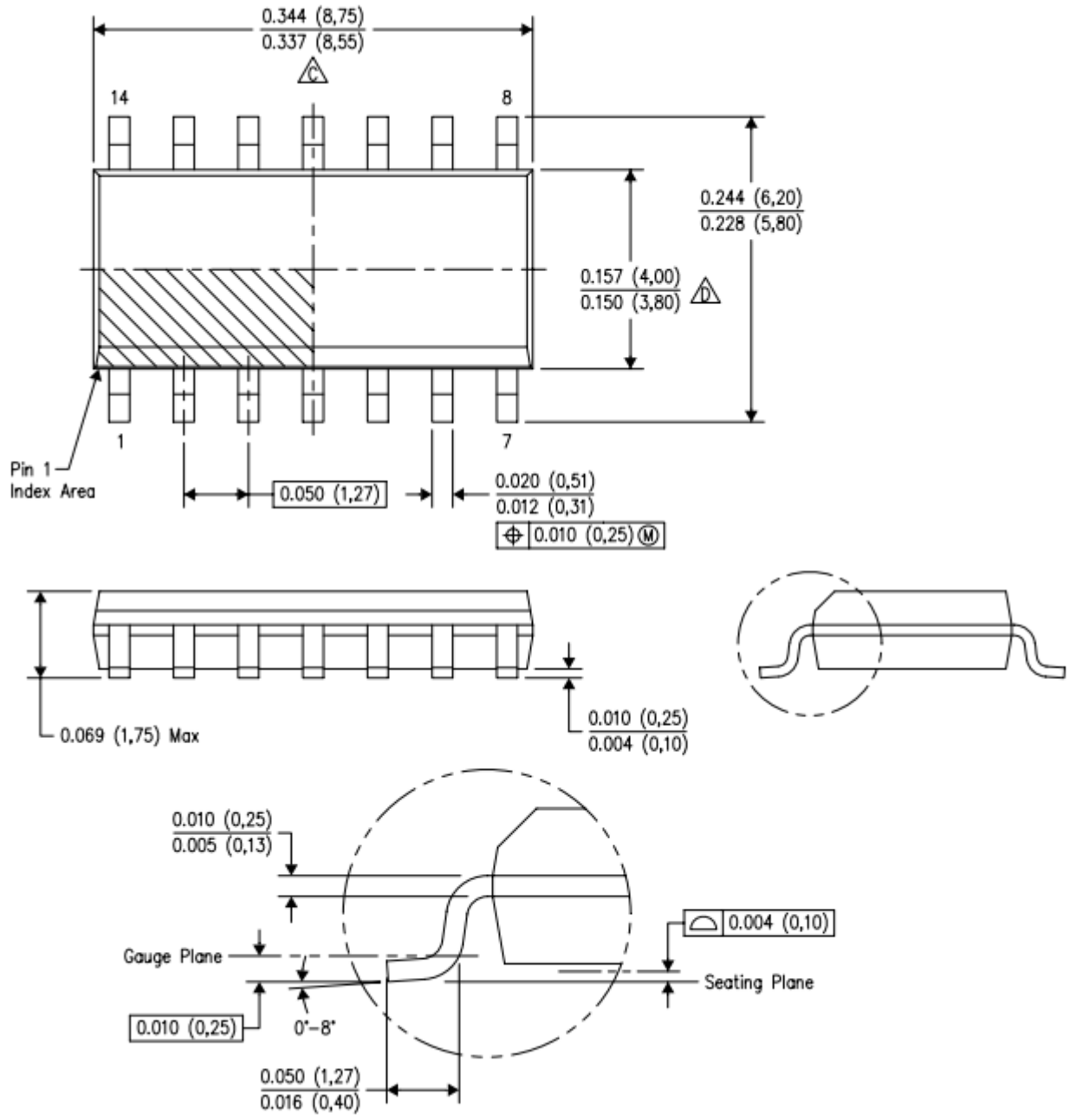
PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS		MIN	TYP	MAX	UNIT
t_{PLH}	A, B or C	Y	R_L = 280 Ω,	C_L = 15 pF		3	4.5	ns
t_{PHL}						3	5	ns
t_{PLH}			R_L = 280 Ω,	C_L = 50 pF		4.5		ns
t_{PHL}						5		ns

NOTE 2: 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