

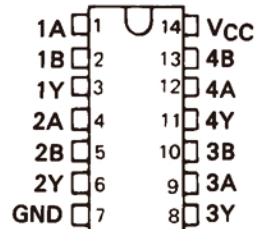
description

These devices contain four independent 2-input AND gates.

The XD74LS08, XL74LS08 and XD54LS08 are characterized for operation over the full military temperature range of -55°C to 125°C . The XD74LS08, XL74LS08 and XD54LS08 are characterized for operation from 0° to 70°C .

XD54LS08
XD74LS08
XL74LS08

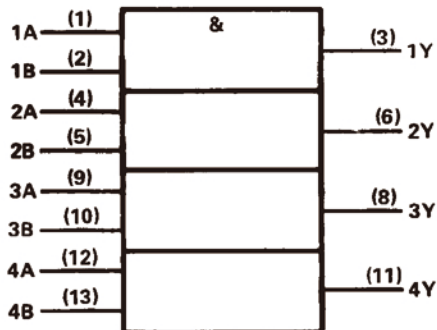
(TOP VIEW)



FUNCTION TABLE (each gate)

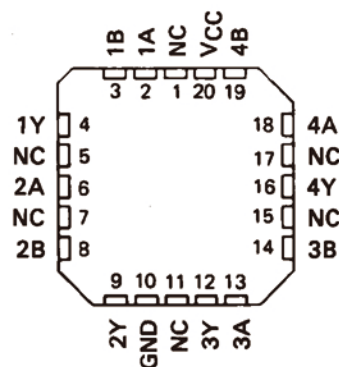
INPUTS		OUTPUT
A	B	Y
H	H	H
L	X	L
X	L	L

logic symbol†



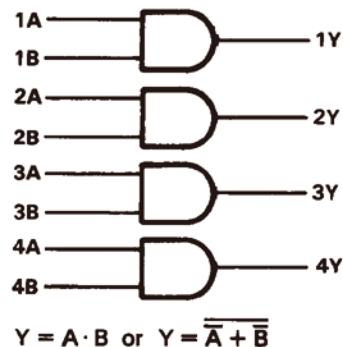
XD74LS08, XL74LS08 ... FK PACKAGE

(TOP VIEW)



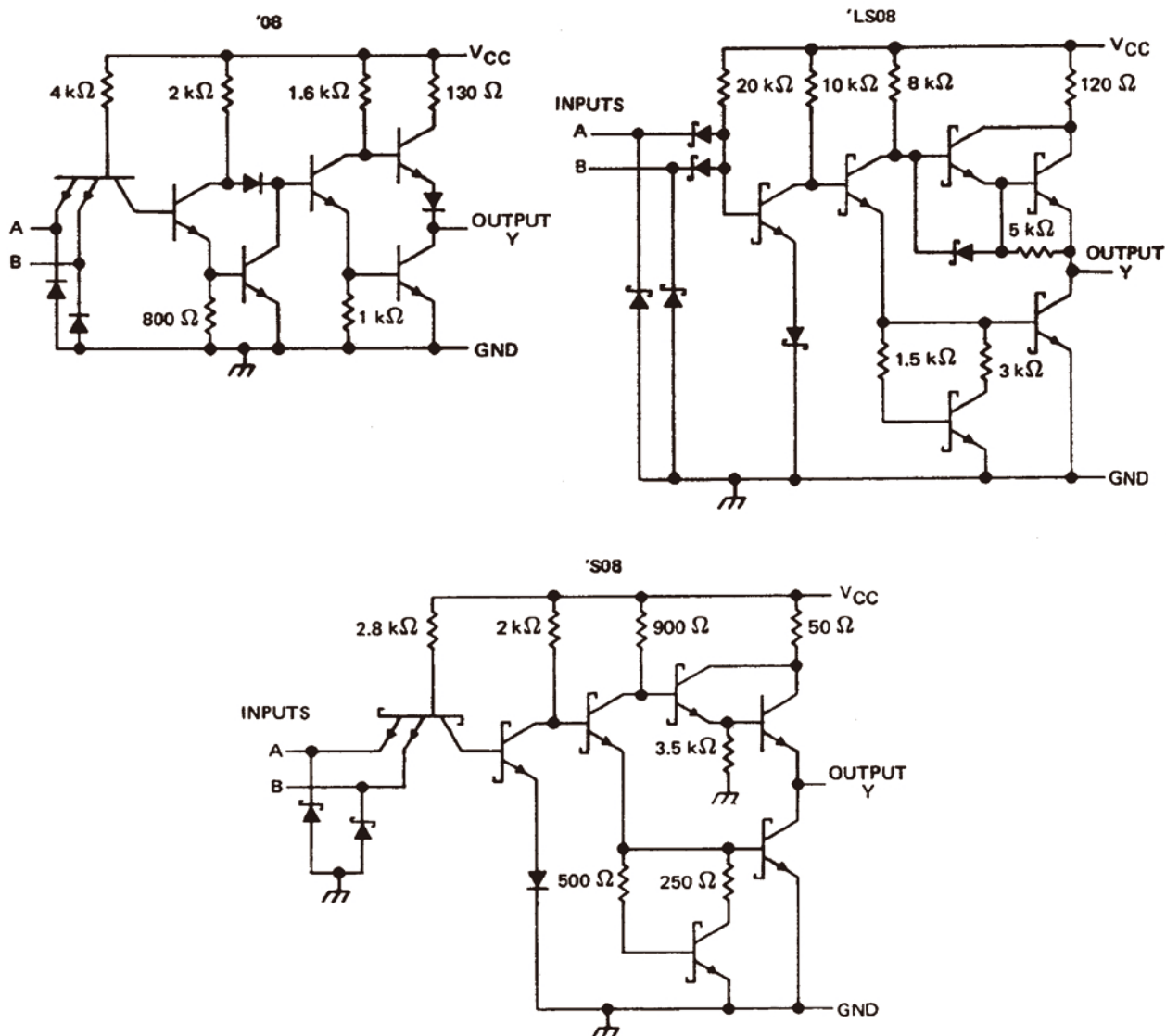
NC—No internal connection

logic diagram (positive logic)



XD74LS08 DIP14/XL74LS08 SOP14

schematics (each gate)



Resistor values 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: '08, 'S08	5.5 V
'LS08	7 V
Operating free-air temperature range: XD54'	-55°C to 125°C
XD74'	0°C to 70°C
Storage temperature range	-65°C to 150°C

XD74LS08 DIP14/XL74LS08 SOP14

recommended operating conditions

	XD74LS08			XL74LS08			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			− 0.8			− 0.8	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 †	XD74LS08			XL74LS08			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 _{IH} = 2 V, I _{OH} = − 0.8 mA	2.4	3.4		2.4	3.4		V
V _{OL}	V _{CC} = MIN, V _{IL} = 0.8 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 = 4.5 V		11	21		11	21	mA
I _{CCL}	V _{CC} = MAX, V _I = 0 V		20	33		20	33	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 or B	Y	R _L = 400 Ω, C _L = 15 pF		17.5	27	ns
t _{PHL}					12	19	ns

XD74LS08 DIP14/XL74LS08 SOP14

recommended operating conditions

	XD74LS08			XL74LS08			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 †	XD74LS08			XL74LS08			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 _{IH} = 2 V, I _{OH} = − 0.4 mA	2.5	3.4		2.7	3.4		V
V _{OL}	V _{CC} = MIN, V _{IL} = MAX, I _{OL} = 4 mA	0.25	0.4		0.25	0.4		V
	V _{CC} = MIN, V _{IL} = MAX, I _{OL} = 8 mA				0.35	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 = 4.5 V		2.4	4.8		2.4	4.8	mA
I _{CCL}	V _{CC} = MAX, V _I = 0 V		4.4	8.8		4.4	8.8	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.

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 or B	Y	R _L = 2 kΩ, C _L = 15 pF		8	15	ns
t _{PHL}					10	20	ns

XD74LS08 DIP14/XL74LS08 SOP14

recommended operating conditions

	XD74LS08			XL74LS08			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 †	XD74LS08			XL74LS08			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 _{IH} = 2 V, I _{OH} = -1 mA	2.5	3.4		2.7	3.4		V
V _{OL}	V _{CC} = MIN, V _{IL} = 0.8 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 = 4.5 V		18	32		18	32	mA
I _{CCL}	V _{CC} = MAX, V _I = 0 V		32	57		32	57	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 or B	Y	R _L = 280 Ω, C _L = 15 pF	4.5	7		ns
t _{PHL}				5	7.5		ns
t _{PLH}			R _L = 280 Ω, C _L = 50 pF	6			ns
t _{PHL}				7.5			ns

S0P14

Top View Dimensions:

- Overall Width: $\frac{0.344}{0.337}$ (8,75) / (8,55)
- Pin 1 Index Area: Indicated by a dashed line and label.
- Pin Count: 14 pins on the top, 8 pins on the bottom.
- Pin Pitch: $\frac{0.157}{0.150}$ (4,00) / (3,80)
- Pin Width: $\frac{0.020}{0.012}$ (0,51) / (0,31)
- Pin Spacing: $\frac{0.050}{0.010}$ (1,27) / (0,25) (M)

Side View Dimensions:

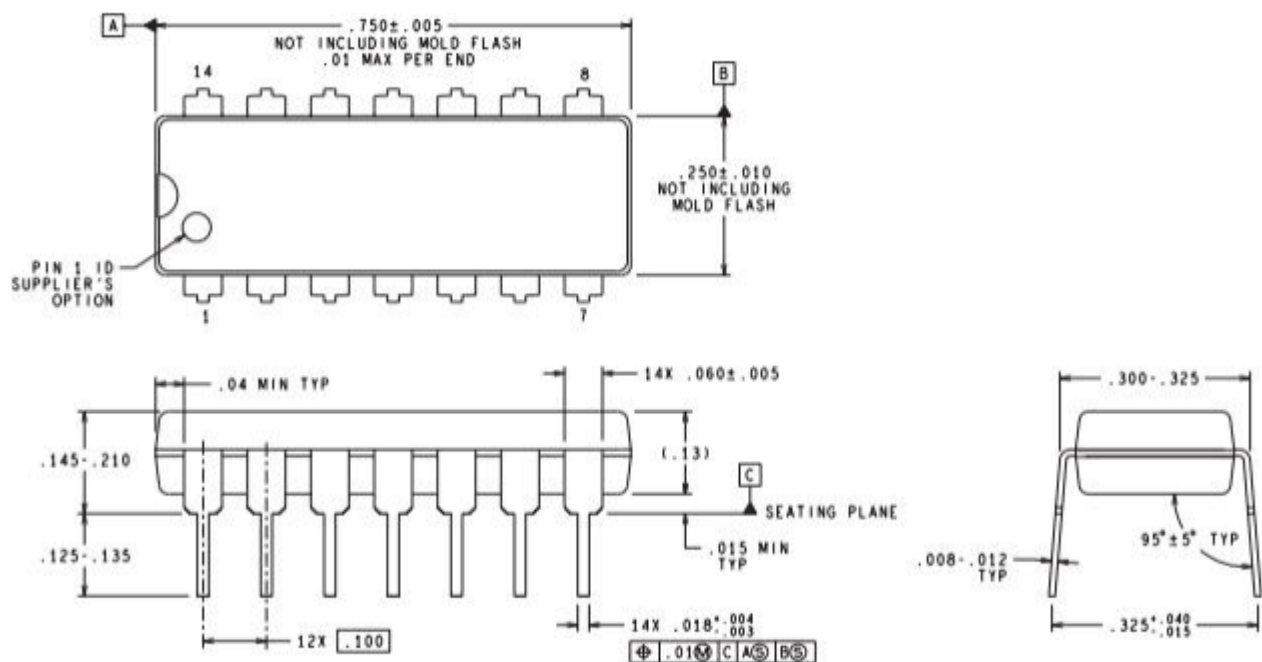
- Overall Height: $\frac{0.244}{0.228}$ (6,20) / (5,80)
- Pin Height: $\frac{0.069}{0.004}$ (1,75) Max / (0,10)

Detail View Dimensions:

- Gauge Plane to Seating Plane: $\frac{0.010}{0.005}$ (0,25) / (0,13)
- Seating Plane to Pin Base: $\frac{0.050}{0.016}$ (1,27) / (0,40)
- Pin Angle: $0^\circ - 8^\circ$
- Pin Width: $\frac{0.010}{0.004}$ (0,25) / (0,10)

XD74LS08 DIP14/XL74LS08 SOP14

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