

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

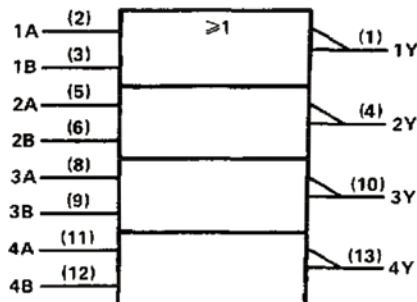
These devices contain four independent 2-input-NOR gates.

The XD74LS02, XL74LS02, and XD54LS04 are characterized for operation over the full military temperature range of -55°C to 125°C . The XD74LS02, XL74LS02, and XD54LS04 are characterized for operation from 0°C to 70°C .

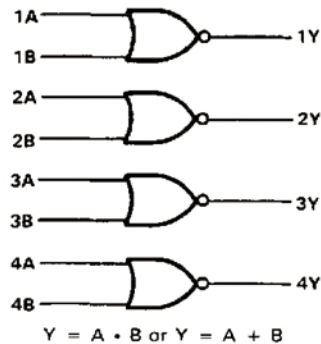
FUNCTION TABLE (each gate)

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

logic symbol†



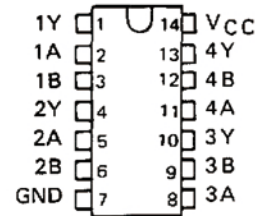
logic diagram (positive logic)



XD74LS02

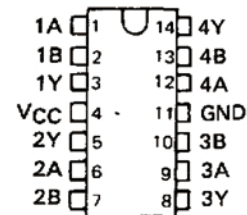
XL74LS02

XD54LS04



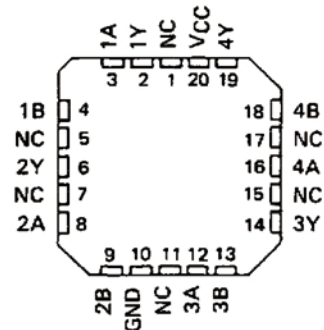
XD54LS04

(TOP VIEW)



XD74LS02 /XL74LS02

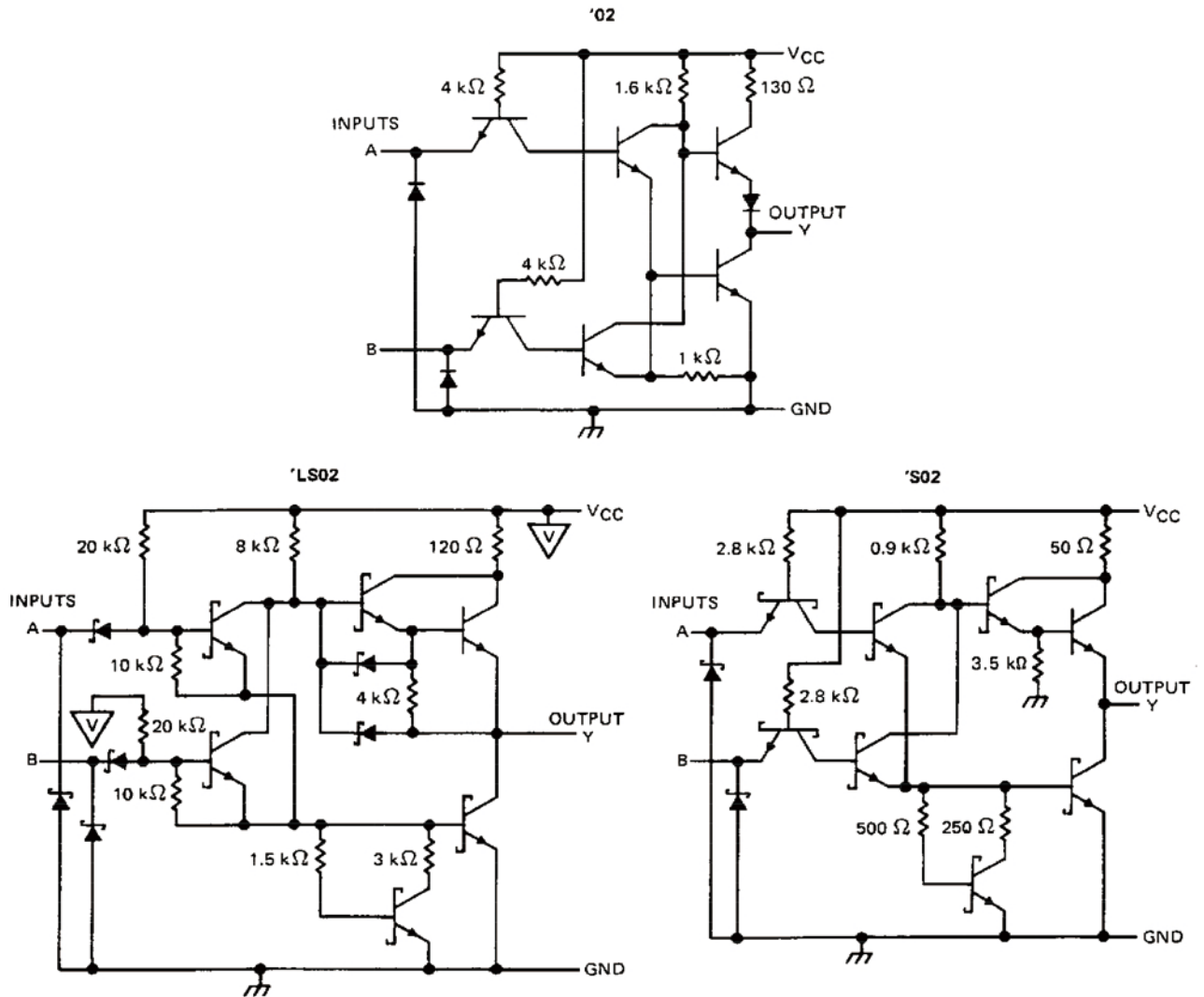
(TOP VIEW)



NC - No internal connection

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

schematics (each gate)



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: '02, 'S02	5.5 V
'LS02	7 V
Off-state output voltage	7 V
Operating free-air temperature range: SN54'	-55 °C to 125 °C
SN74'	0 °C to 70 °C
Storage temperature range	-65 °C to 150 °C

NOTE 1. Voltage values are with respect to network ground terminal.

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

recommended operating conditions

	XD74LS02			XD54LS04			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 †	XD54LS04			XD74LS02			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		8	16		8	16	mA
I _{CCL}	V _{CC} = MAX, See Note 2		14	27		14	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.

NOTE 2: One input 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}	A or B	Y	R _L = 400 Ω, C _L = 15 pF		12	22	ns
t _{PHL}					8	15	ns

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

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

recommended operating conditions

	XD54LS04			XD74LS02			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 †	XD54LS04			XD74LS02			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		0.25	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			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		1.6	3.2		1.6	3.2	mA
I _{CCL}	V _{CC} = MAX, See Note 2		2.8	5.4		2.8	5.4	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: One input 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}	A or B	Y	R _L = 2 kΩ,	C _L = 15 pF		10	15	ns
t _{PHL}						10	15	ns

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

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

recommended operating conditions

	XD54LS04			XD74LS02			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 †	XD54LS04			XD74LS02			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		17	29		17	29	mA
I _{CCL}	V _{CC} = MAX, See Note 2		26	45		26	45	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.

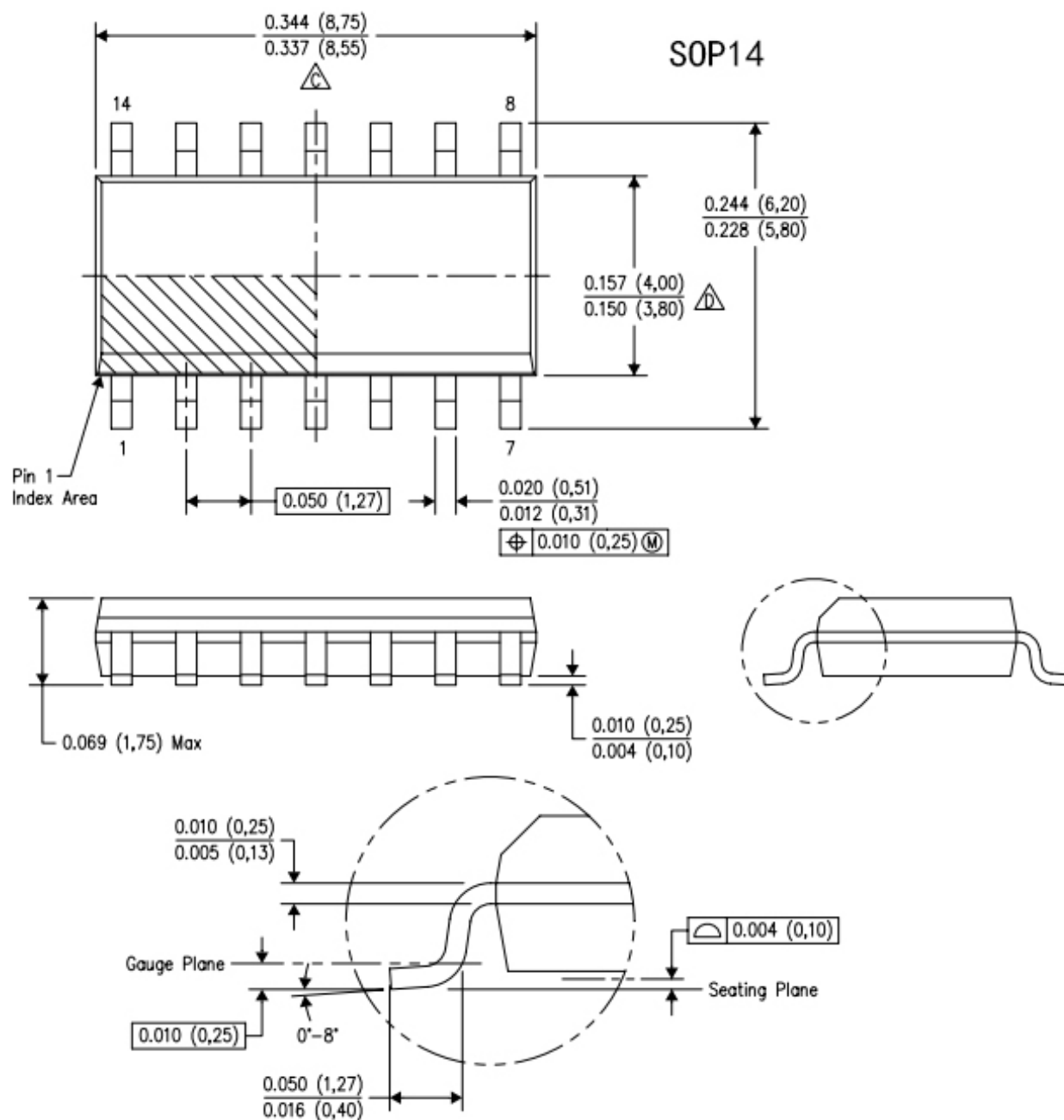
NOTE 2: One input at 4.5 V, all others at GND.

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}	A or B	Y	R _L = 280 Ω, C _L = 15 pF	3.5	5.5		ns
t _{PHL}				3.5	5.5		ns
t _{PLH}			R _L = 280 Ω, C _L = 50 pF	5			ns
t _{PHL}				5			ns

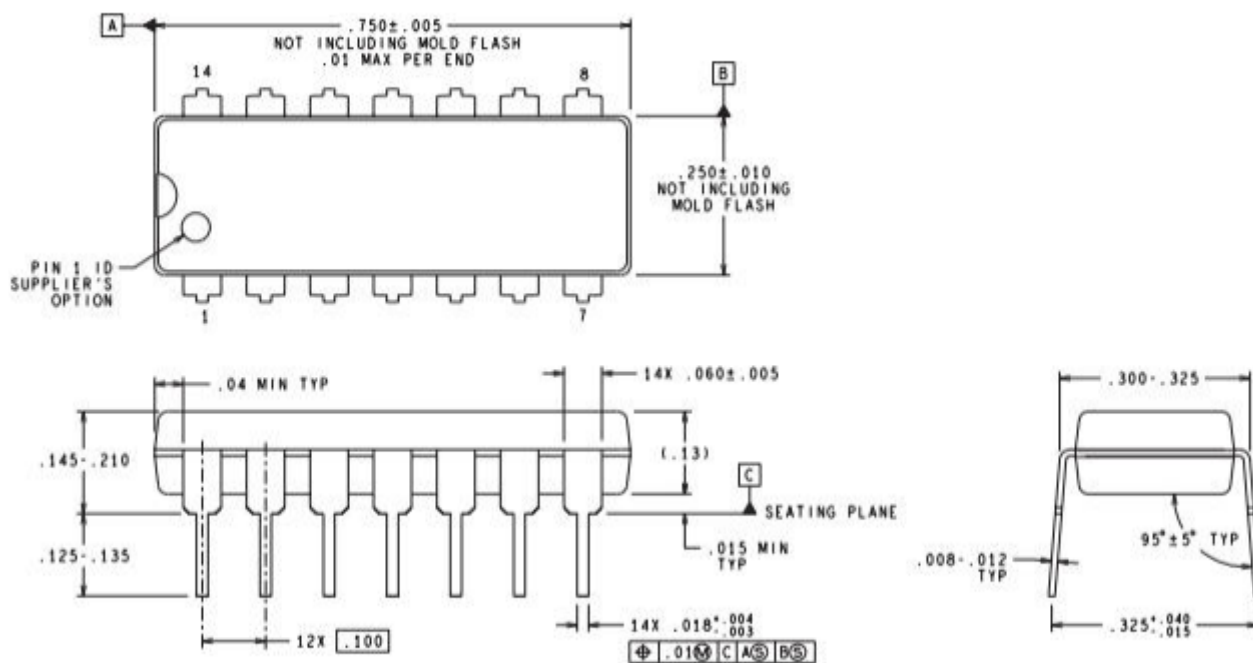
NOTE 3: Load circuits and voltage waveforms are shown in Section 1.

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14



XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

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