

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

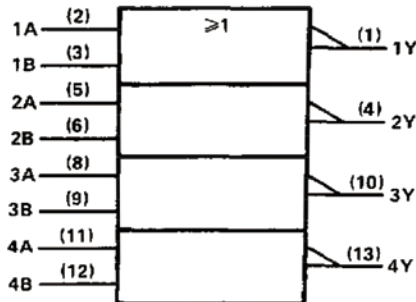
These devices contain four independent 2-input-NOR gates.

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 .

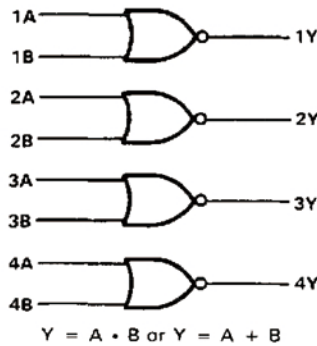
FUNCTION TABLE (each gate)

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

logic symbol†



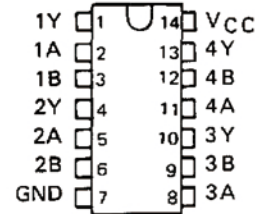
logic diagram (positive logic)



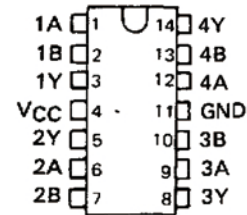
XD74LS02

XL74LS02

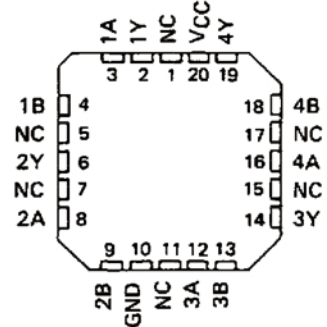
XD54LS04



XD54LS04 (TOP VIEW)



XD74LS02 /XL74LS02 (TOP VIEW)



NC - No internal connection

XD74LS02 DIP14/XL74LS02 SOP14/XD54LS04 DIP14

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}	$V_{CC} = \text{MIN}, I_I = -18 \text{ mA}$	-1.5			-1.5			V
V_{OH}	$V_{CC} = \text{MIN}, V_{IL} = \text{MAX}, I_{OH} = -0.4 \text{ mA}$	2.5	3.4		2.7	3.4	V	
V_{OL}	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, I_{OL} = 4 \text{ mA}$	0.25 0.4			0.25 0.4			V
	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, I_{OL} = 8 \text{ mA}$				0.35 0.5			
I_I	$V_{CC} = \text{MAX}, V_I = 7 \text{ V}$	0.1			0.1			mA
I_{IH}	$V_{CC} = \text{MAX}, V_I = 2.7 \text{ V}$	20			20			μA
I_{IL}	$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$	-0.4			-0.4			mA
$I_{OS}§$	$V_{CC} = \text{MAX}$	-20		-100	-20		-100	mA
I_{CCH}	$V_{CC} = \text{MAX}, V_I = 0 \text{ V}$	1.6 3.2			1.6 3.2			mA
I_{CCL}	$V_{CC} = \text{MAX}, \text{ See Note 2}$	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 $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$

§ 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, $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$ (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS		MIN	TYP	MAX	UNIT
t_{PLH}	A or B	Y	$R_L = 2 \text{ k}\Omega,$	$C_L = 15 \text{ pF}$	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			V
I _{OH} High-level output current				-1			mA
I _{OL} Low-level output current				20			mA
T _A Operating free-air temperature	-55			125			°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			17			29	mA
I _{CCL}	V _{CC} = MAX, See Note 2	26			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.

以上信息仅供参考. 如需帮助联系客服人员. 谢谢 XINLUDA