

DN74LS01 DN74LS01

Quad 2-input Positive NAND Gates (with Open Collector Outputs)

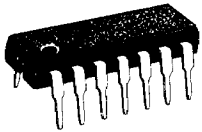
■ Description

DN74LS01 contains four 2-input positive isolation NAND gate circuits with open collector outputs.

■ Features

- “Wired” AND capability
- Low power consumption ($P_d = 8\text{mW}$ typical)
- High speed ($t_{pd} = 16\text{ns}$ typical)
- Wide operating temperature range ($T_a = -20$ to $+75^\circ\text{C}$)

P-1



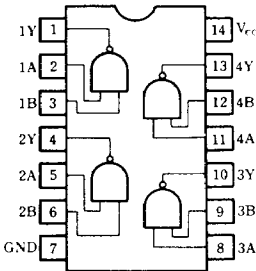
14-pin plastic DIL package

P-4



14-pin Panaflat package (SO-14D)

Pin configuration (top view)



■ Recommended operating conditions

Parameter	Sym	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
HIGH level output voltage	V_{OH}			5.5	V
LOW level output voltage	I_{OL}			8	mA
Operating temperature range	T_{opr}	-20	25	75	$^\circ\text{C}$

4 R

■ DC characteristics (Ta = -20 ~ +75℃)

Parameter	Sym	Test conditions	Min	Typ*	Max	Unit
Input voltage	V _{IH}		2.0			V
	V _{IL}				0.8	V
Output voltage	V _{O1.1}	V _{CC} = 4.75 V I _{O1} = 4 mA		0.25	0.4	V
	V _{O1.2}	V _{IH} = 2 V I _{O1} = 8 mA		0.35	0.5	V
Input current	I _{IH}	V _{CC} = 5.25 V V _i = 2.7 V			20	μA
	I _{IL}	V _{CC} = 5.25 V V _i = 0.4 V			-0.4	mA
	I _I	V _{CC} = 5.25 V V _i = 7 V			0.1	mA
Output current	I _{OH}	V _{CC} = 4.75 V, V _{IL} = 0.8 V V _{OH} = 5.5 V			100	μA
Input clamp voltage	V _{IK}	V _{CC} = 4.75 V I _i = -18 mA			-1.5	V
Supply current	I _{CCH}	V _{CC} = 5.25 V		0.8	1.6	mA
	I _{CC1}	V _{CC} = 5.25 V		2.4	4.4	mA

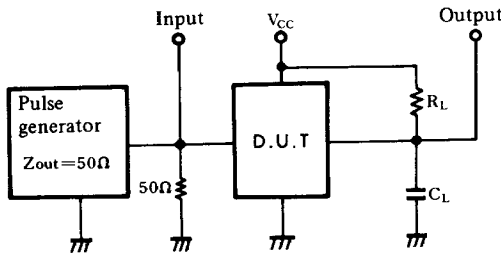
* When constant at V_{CC} = 5 V, Ta = 25℃.

■ Switching characteristics (V_{CC} = 5 V, Ta = 25℃)

Parameter	Sym	Test conditions	Min	Typ	Max	Unit
Propagation delay time	t _{PLH}	C _L = 15 pF, R _L = 2 kΩ		17	32	ns
	t _{PHL}			15	28	ns

※ Switching parameter measurement information

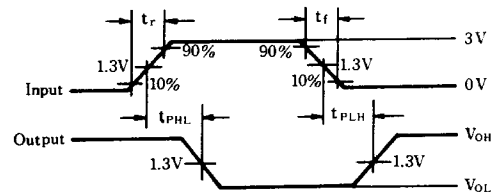
1. Measurement circuit



Notes

1. C_L includes probe and tool floating capacitance.

2. Waveforms



Notes

1. Input waveform: tr ≤ 15 ns, tf ≤ 6 ns, PRR = 1 MHz, duty cycle = 50%.