

HD74LS51

2-wide 2-input, 2-wide 3-input AND-OR-INVERT Gates

REJ03D0412-0300 Rev.3.00 Jul.22.2005

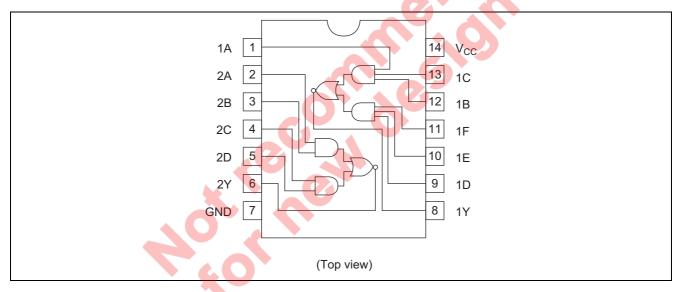
Features

• Ordering Information

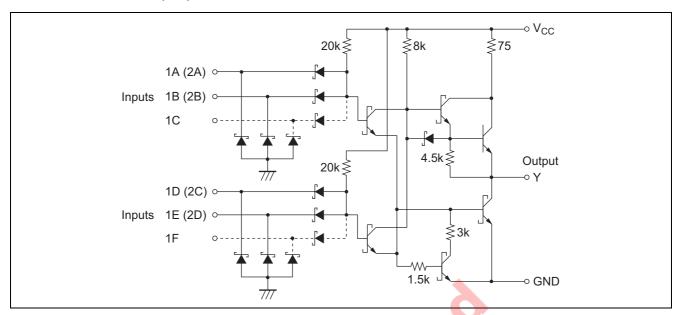
Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS51P	DILP-14 pin	PRDP0014AB-B (DP-14AV)	Р	_
HD74LS51FPEL	SOP-14 pin (JEITA)	PRSP0014DF-B (FP-14DAV)	FP	EL (2,000 pcs/reel)

Note: Please consult the sales office for the above package availability.

Pin Arrangement



Circuit Schematic (1/2)



Absolute Maximum Ratings

Item	Symbol	Ratings	Unit
Supply voltage	V _{cc}	7	V
Input voltage	V _{IN}	7	V
Power dissipation	P _T	400	mW
Storage temperature	Tstg	-65 to +150	°C

Note: Voltage value, unless otherwise noted, are with respect to network ground terminal.

Recommended Operating Conditions

Item	Symbol	Min	Тур	Max	Unit
Supply voltage	V _{CC}	4.75	5.00	5.25	V
Output current	Іон	_	_	-400	μΑ
Output current	l _{OL}	_	_	8	mA
Operating temperature	Topr	-20	25	75	°C

Electrical Characteristics

 $(Ta = -20 \text{ to } +75 \text{ }^{\circ}\text{C})$

Item	Symbol	min.	typ.*	max.	Unit	Condition	
Input voltage	V_{IH}	2.0	_	_	V		
Input voltage	V_{IL}	_		0.8	V		
	V _{OH}	2.7		_	V	$V_{CC} = 4.75 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OH} = -400 \mu\text{A}$	
Output voltage	Vo			0.5	V	$I_{OL} = 8 \text{ mA}$ $V_{CC} = 4.75 \text{ V}, V_{IH} = 2 \text{ V}$	
	V _{OL}			0.4	V	$I_{OL} = 4 \text{ mA}$ $V_{CC} = 4.73 \text{ V}, \text{ V}_{IH} = 2 \text{ V}$	
	I _{IH}			20	μΑ	$V_{CC} = 5.25 \text{ V}, V_I = 2.7 \text{ V}$	
Input current	I _{IL}	_		-0.4	mA	$V_{CC} = 5.25 \text{ V}, V_I = 0.4 \text{ V}$	
	I _I	_		0.1	mA	$V_{CC} = 5.25 \text{ V}, V_I = 7 \text{ V}$	
Short-circuit output current	I _{OS}	-20		-100	mA	V _{CC} = 5.25 V	
Supply current	I _{CCH}	_	0.8	1.6	mA	V _{CC} = 5.25 V	
	I _{CCL}	_	1.4	2.8	mA	V _{CC} = 5.25 V	
Input clamp voltage	V_{IK}		_	-1.5	V	$V_{CC} = 4.75 \text{ V}, I_{IN} = -18 \text{ mA}$	

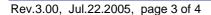
Note: $^*V_{CC} = 5 \text{ V}, \text{ Ta} = 25^{\circ}\text{C}$

Switching Characteristics

 $(V_{CC} = 5 \text{ V}, Ta = 25^{\circ}\text{C})$

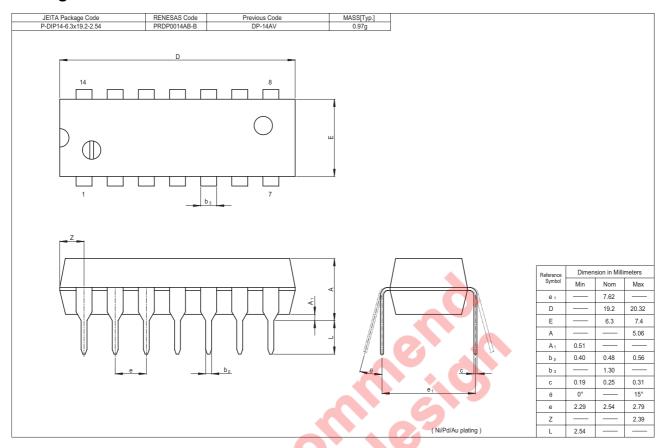
Item	Symbol	min.	typ.	max.	Unit	Condition	
Propagation delay time	t _{PLH}	_	12	20	ns	$C_L = 15 \text{ pF}, R_L = 2 \text{ k}\Omega$	
	t _{PHL}	_	12.5	20	ns	$C_L = 15 \text{pr}, \text{RL} = 2 \text{Ksz}$	

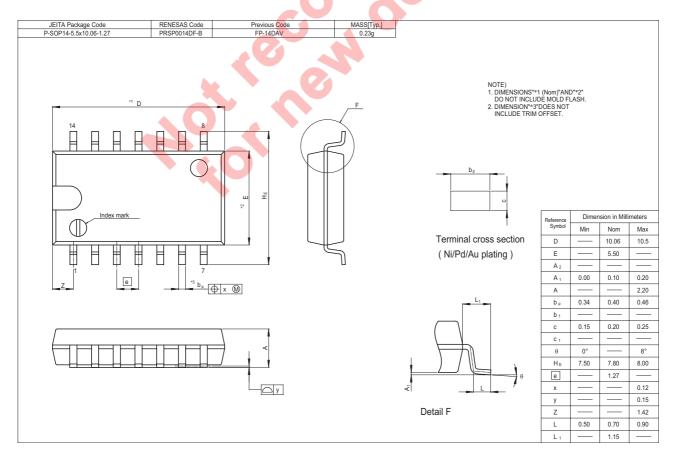
Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".





Package Dimensions





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