

HD74LS38

Quadruple 2-input Positive NAND Buffers (with Open Collector Outputs)

REJ03D0407-0300

Rev.3.00

Jul.22.2005

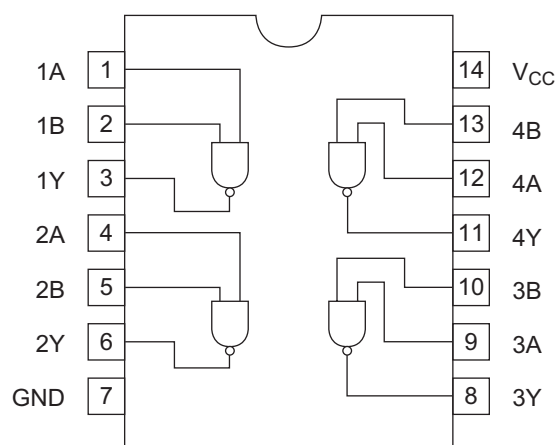
Features

- Ordering Information

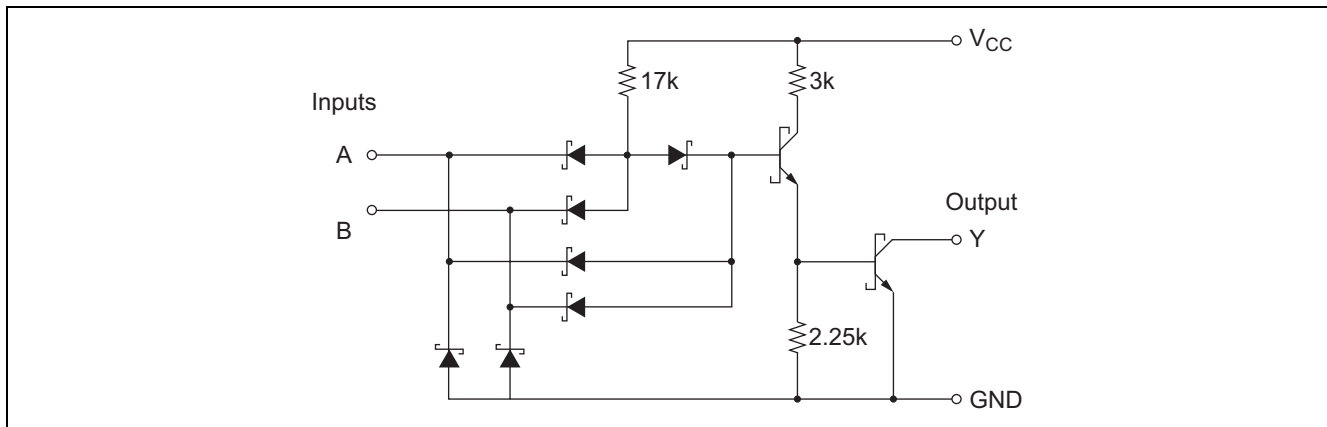
Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS38P	DILP-14 pin	PRDP0014AB-B (DP-14AV)	P	—
HD74LS38FPEL	SOP-14 pin (JEITA)	PRSP0014DF-B (FP-14DAV)	FP	EL (2,000 pcs/reel)
HD74LS38RPEL	SOP-14 pin (JEDEC)	PRSP0014DE-A (FP-14DNV)	RP	EL (2,500 pcs/reel)

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

Pin Arrangement



Circuit Schematic (1/4)



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	T_{stg}	-65 to +150	°C

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

Recommended Operating Conditions

Item	Symbol	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
Output voltage	V_{OH}	—	—	5.5	V
Output current	I_{OL}	—	—	24	mA
Operating temperature	T_{opr}	-20	25	75	°C

Electrical Characteristics

(Ta = -20 to +75 °C)

Item	Symbol	min.	typ.*	max.	Unit	Condition
Input voltage	V _{IH}	2.0	—	—	V	
	V _{IL}	—	—	0.8	V	
Output voltage	V _{OL}	—	—	0.5	V	V _{CC} = 4.75 V, V _{IH} = 2 V
		—	—	0.4		
Output current	I _{OH}	—	—	250	μA	V _{CC} = 4.75 V, V _I = 0.8 V, V _{OH} = 5.5 V
Input current	I _{IH}	—	—	20	μA	V _{CC} = 5.25 V, V _I = 2.7 V
	I _{IL}	—	—	-0.4	mA	V _{CC} = 5.25 V, V _I = 0.4 V
	I _I	—	—	0.1	mA	V _{CC} = 5.25 V, V _I = 7 V
Supply current	I _{CCH}	—	0.9	2.0	mA	V _{CC} = 5.25 V
	I _{CCL}	—	6	12	mA	V _{CC} = 5.25 V
Input clamp voltage	V _{IK}	—	—	-1.5	V	V _{CC} = 4.75 V, I _{IN} = -18 mA

Note: * V_{CC} = 5 V, Ta = 25°C

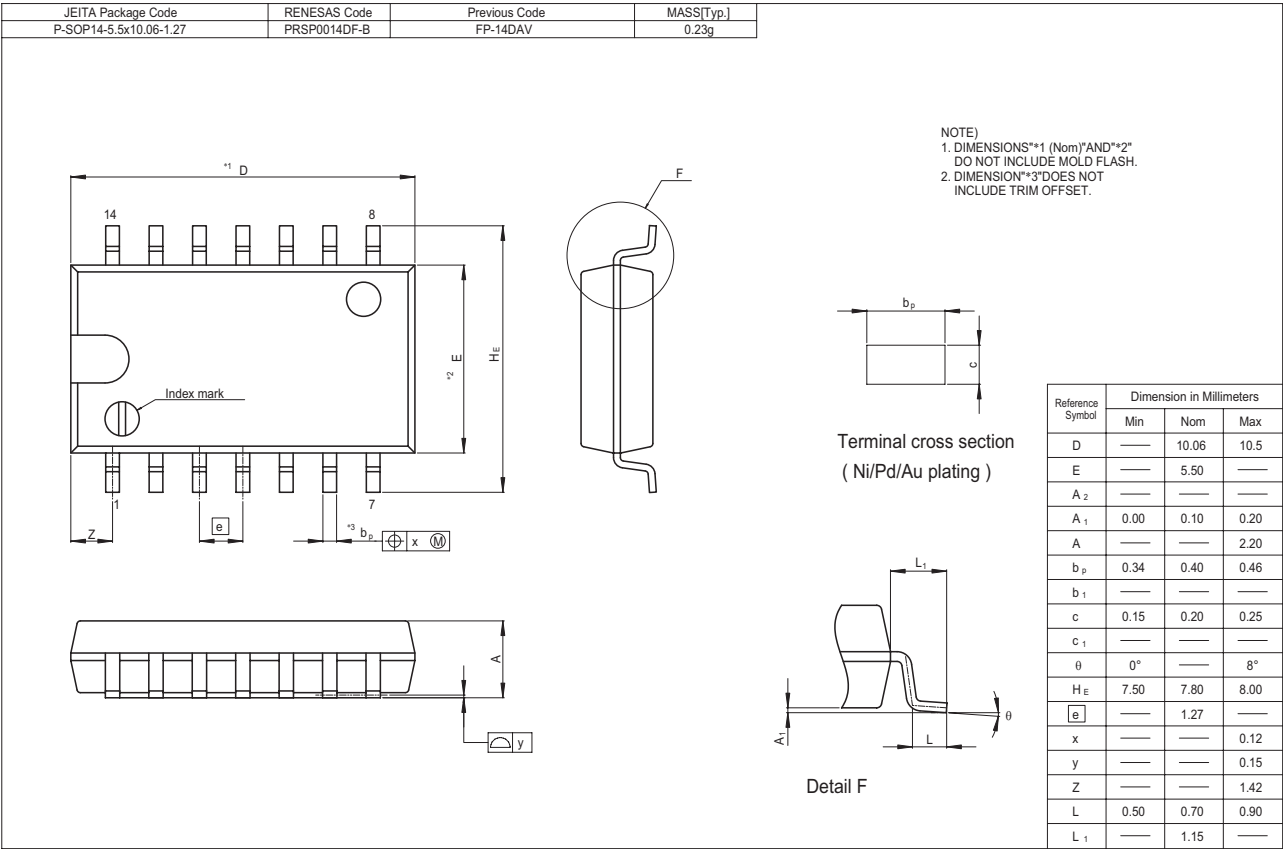
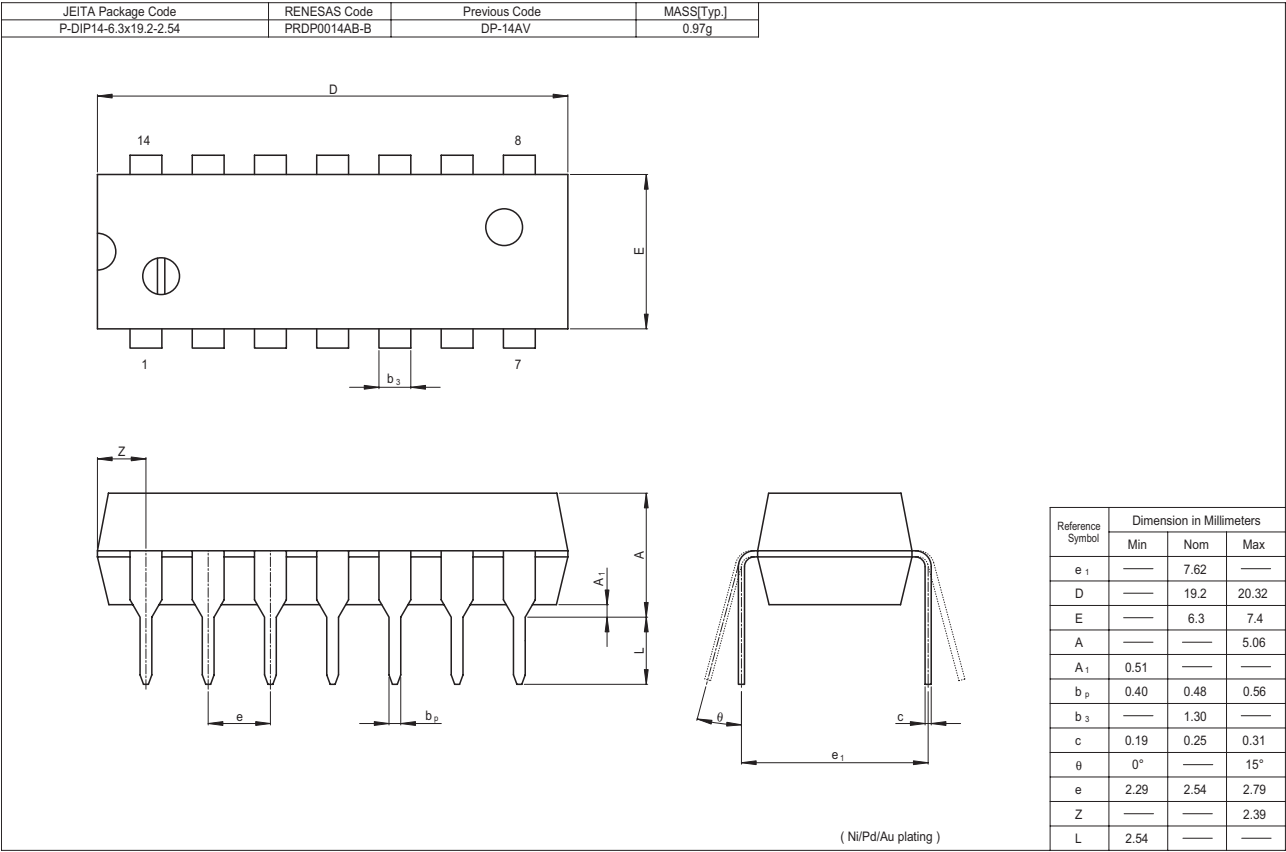
Switching Characteristics

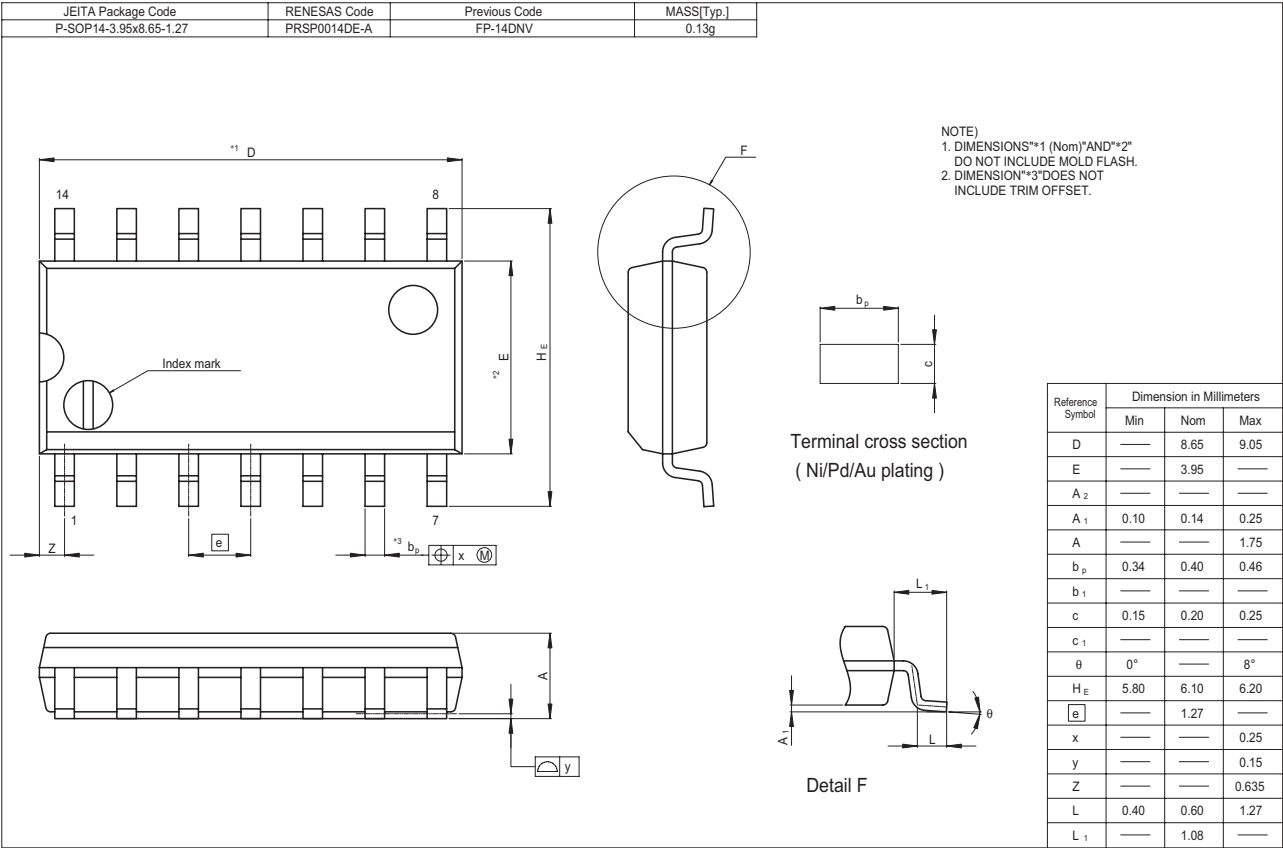
(V_{CC} = 5 V, Ta = 25°C)

Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	t _{PLH}	—	20	32	ns	C _L = 45 pF, R _L = 667 Ω
	t _{PHL}	—	18	28	ns	

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

Package Dimensions





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