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April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Not recommended
for new design

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HD74LS40

Dual 4-input Positive NAND Buffers

REJ03D0408-0200

Rev.2.00

Feb.18.2005

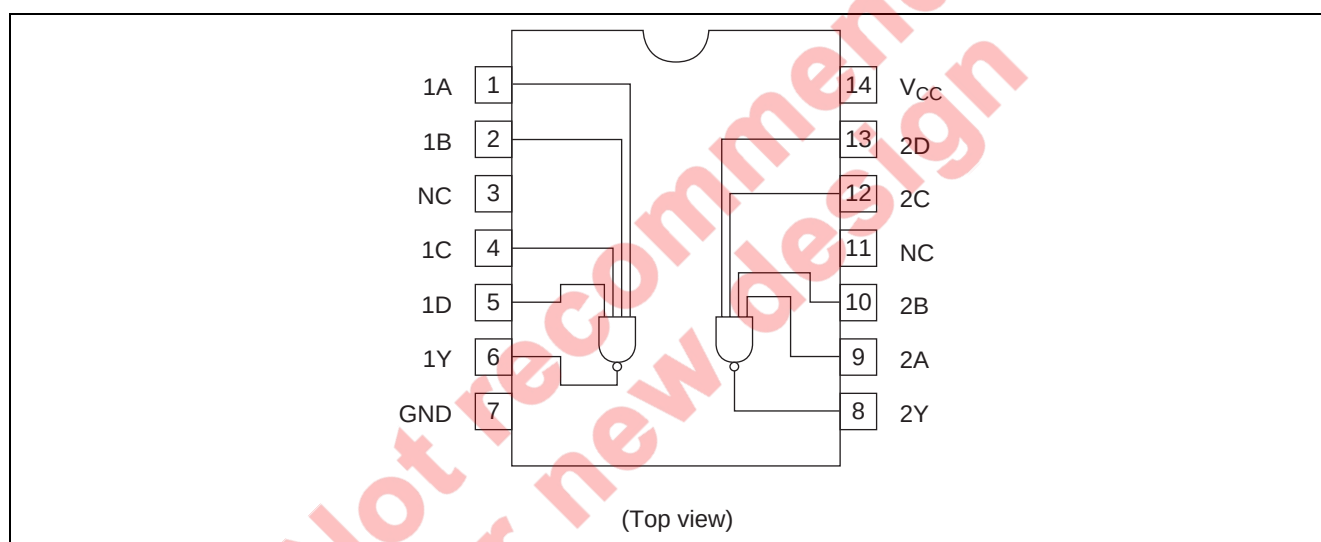
Features

- Ordering Information

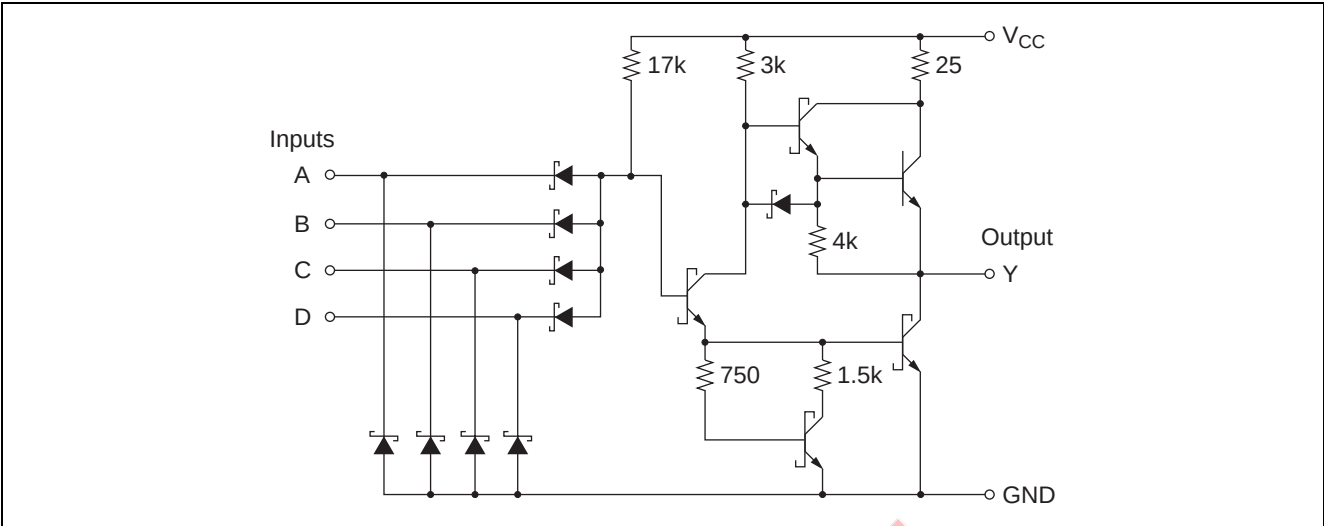
Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS40FPEL	SOP-14 pin (JEITA)	PRSP0014DF-B (FP-14DAV)	FP	EL (2,000 pcs/reel)

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	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 current	I_{OH}	—	—	-1.2	mA
	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 _{OH}	2.7	—	—	V	V _{CC} = 4.75 V, V _{IL} = 0.8 V, I _{OH} = -1.2 mA
	V _{OL}	—	—	0.5	V	I _{OL} = 24 mA
		—	—	0.4		I _{OL} = 12 mA
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
Short-circuit output current	I _{OS}	-30	—	-130	mA	V _{CC} = 5.25 V
Supply current	I _{CCH}	—	0.45	1.0	mA	V _{CC} = 5.25 V
	I _{CCL}	—	3	6	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

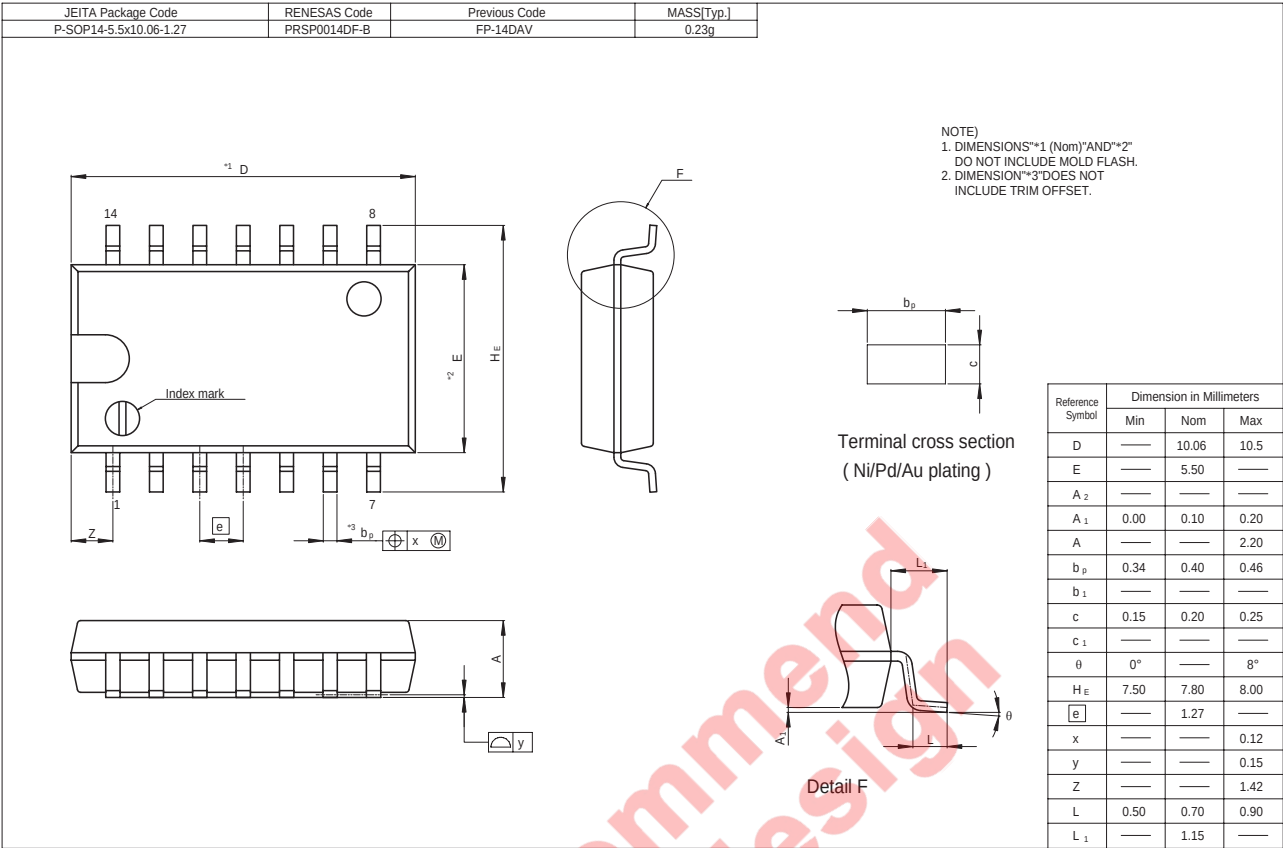
Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	t _{PLH}	—	12	24	ns	C _L = 45 pF, R _L = 667 Ω
	t _{PHL}	—	12	24	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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