

# HD74LS54

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

REJ03D0413-0200  
Rev.2.00  
Feb.18.2005

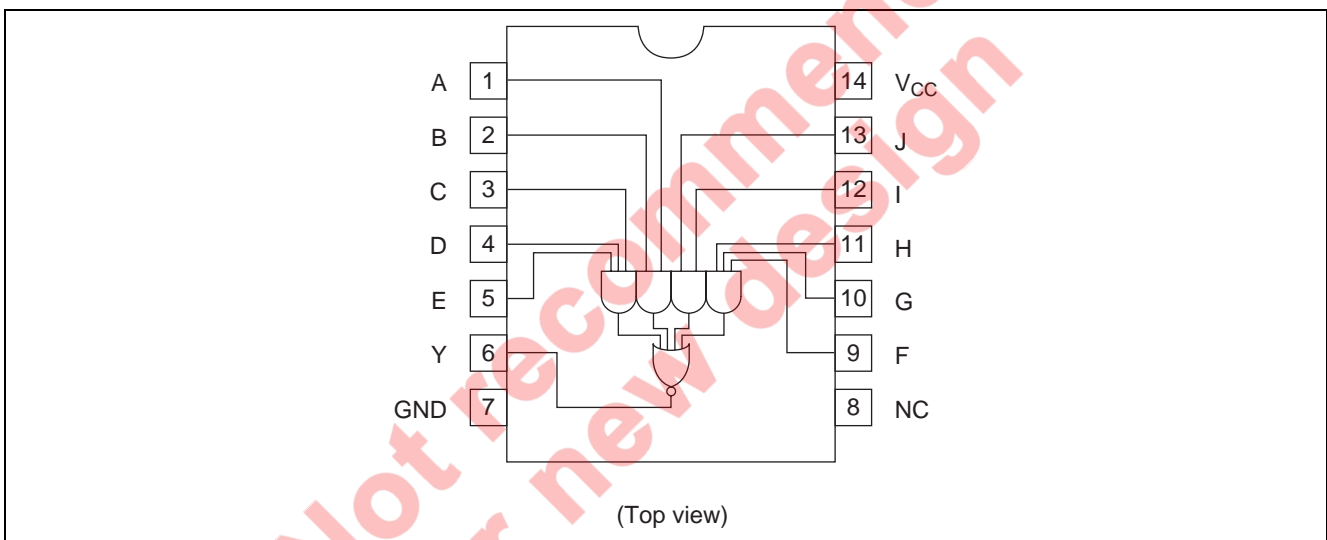
### Features

- Ordering Information

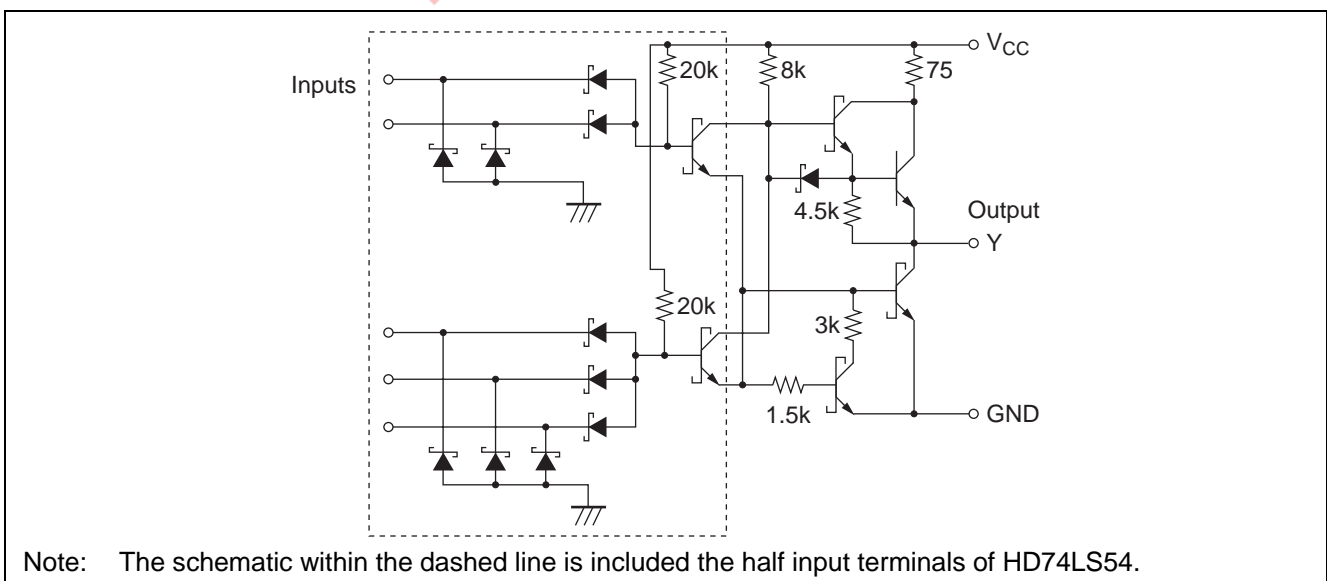
Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS54FPEL	SOP-14 pin(JEITA)	PRSP0014DF-B (FP-14DAV)	FP	EL (2,000 pcs/reel)

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

### Pin Arrangement



### Circuit Schematic



### 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	$I_{OH}$	—	—	-400	μA
	$I_{OL}$	—	—	8	mA
Operating temperature	$T_{opr}$	-20	25	75	°C

### Electrical Characteristics

( $T_a = -20$  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, $I_{OH} = -400$ μA $I_{OL} = 8$ mA $V_{CC} = 4.75$ V, $V_{IH} = 2$ V $I_{OL} = 4$ mA
	$V_{OL}$	—	—	0.5 0.4	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
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
	$I_{CCL}$	—	1.0	2.0	mA	$V_{CC} = 5.25$ V
Input clamp voltage	$V_{IR}$	—	—	-1.5	V	$V_{CC} = 4.75$ V, $I_{IN} = -18$ mA

Note: \*  $V_{CC} = 5$  V,  $T_a = 25$  °C

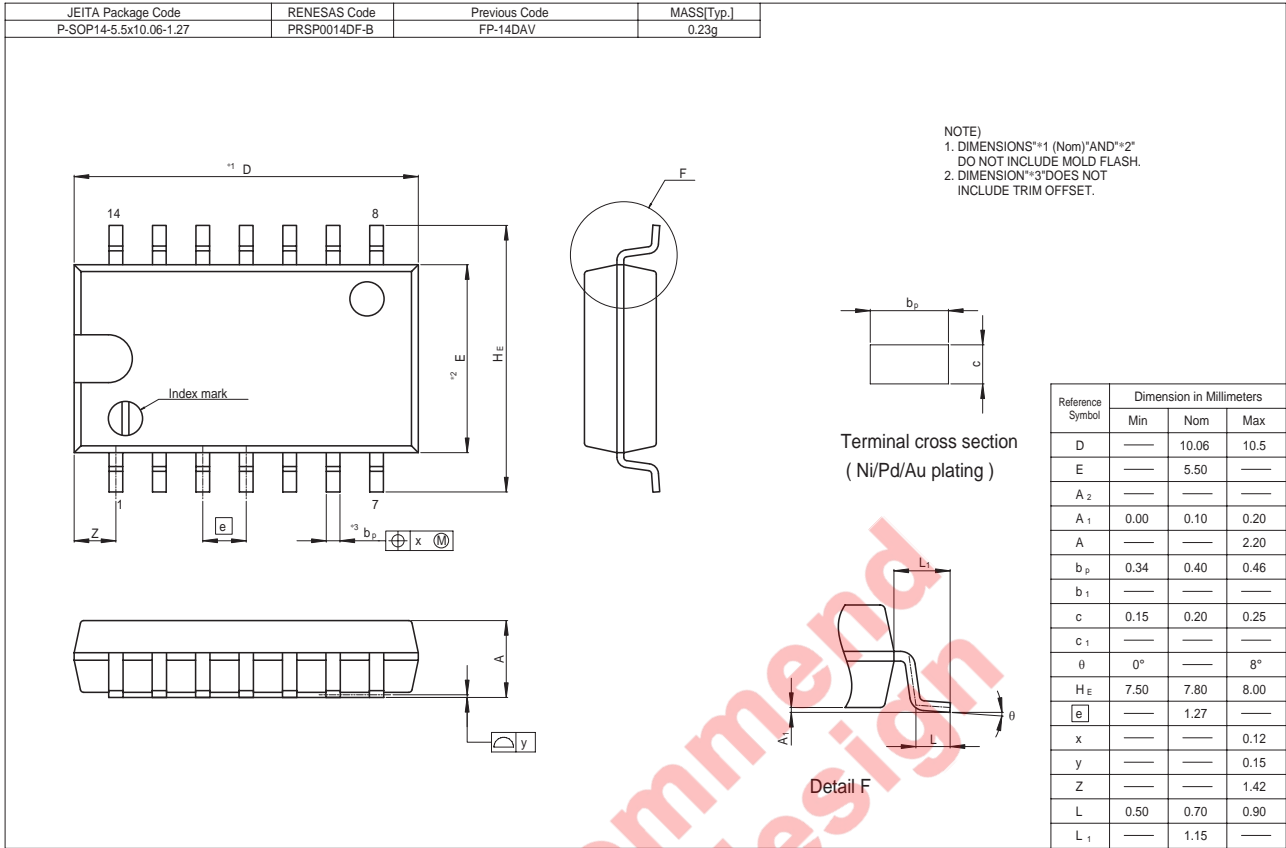
### Switching Characteristics

( $V_{CC} = 5$  V,  $T_a = 25$  °C)

Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	$t_{PLH}$	—	12	20	ns	$C_L = 15$ pF, $R_L = 2$ kΩ
	$t_{PHL}$	—	12.5	20	ns	

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

Package Dimensions



Not recommended for new design

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