

HD74LS30

8-input Positive NAND Gate

REJ03D0404-0200
 Rev.2.00
 Feb.18.2005

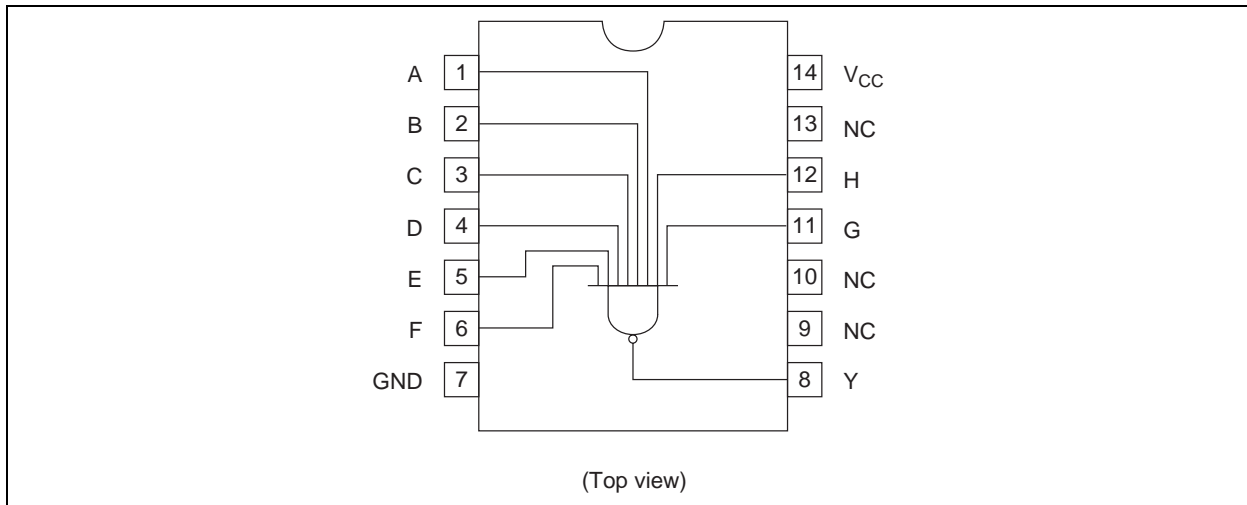
Features

- Ordering Information

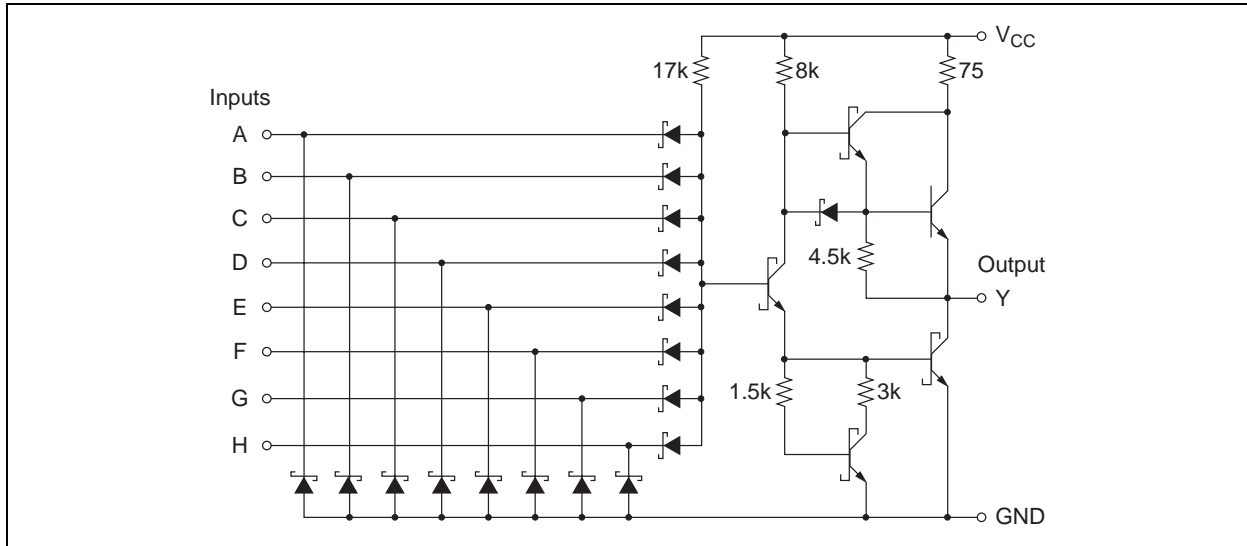
| Part Name | Package Type | Package Code (Previous Code) | Package Abbreviation | Taping Abbreviation (Quantity) |
|--------------|--------------------|------------------------------|----------------------|--------------------------------|
| HD74LS30P | DILP-14 pin | PRDP0014AB-B (DP-14AV) | P | — |
| HD74LS30FPEL | SOP-14 pin (JEITA) | PRSP0014DF-B (FP-14DAV) | FP | EL (2,000 pcs/reel) |
| HD74LS30RPEL | 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



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

(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} = -400 μA |
| | V _{OL} | — | — | 0.5 | V | V _{CC} = 4.75 V, V _{IH} = 2 V |
| | | — | — | 0.4 | | |
| 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} | — | 0.35 | 0.5 | mA | V _{CC} = 5.25 V |
| | I _{CCL} | — | 0.6 | 1.1 | 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

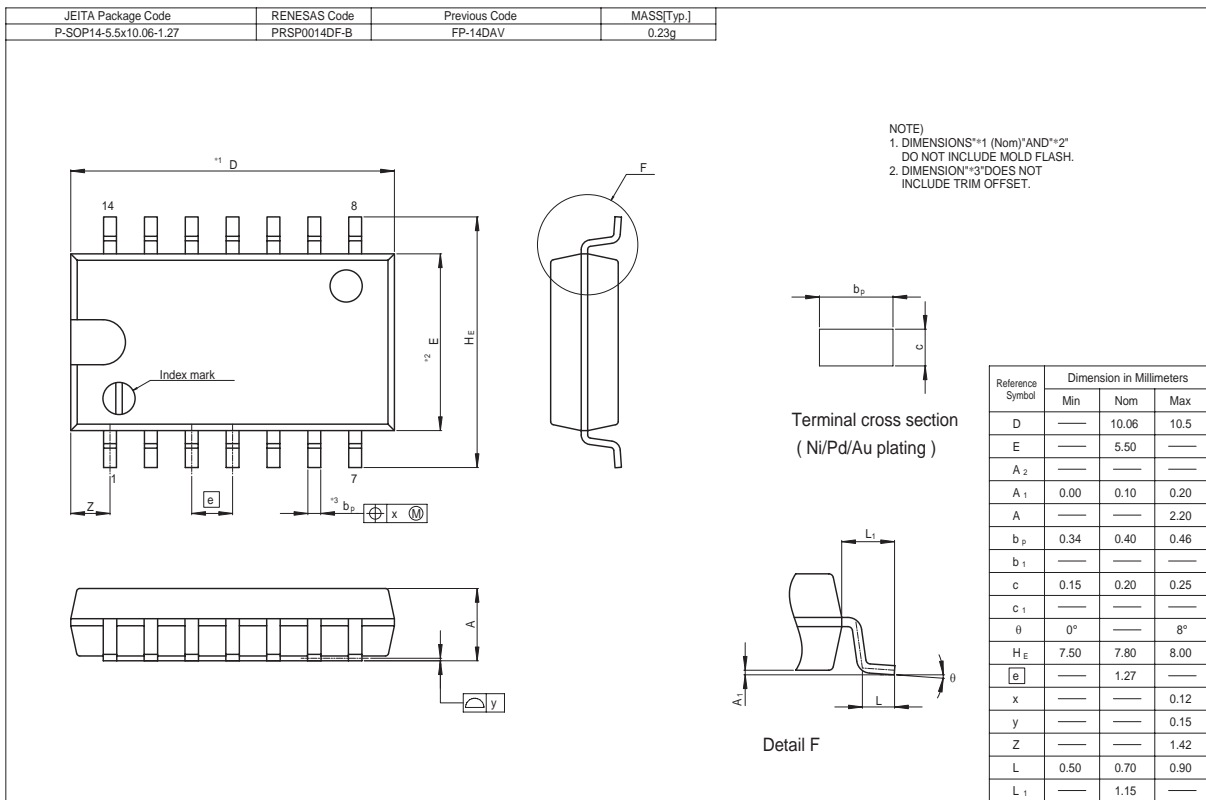
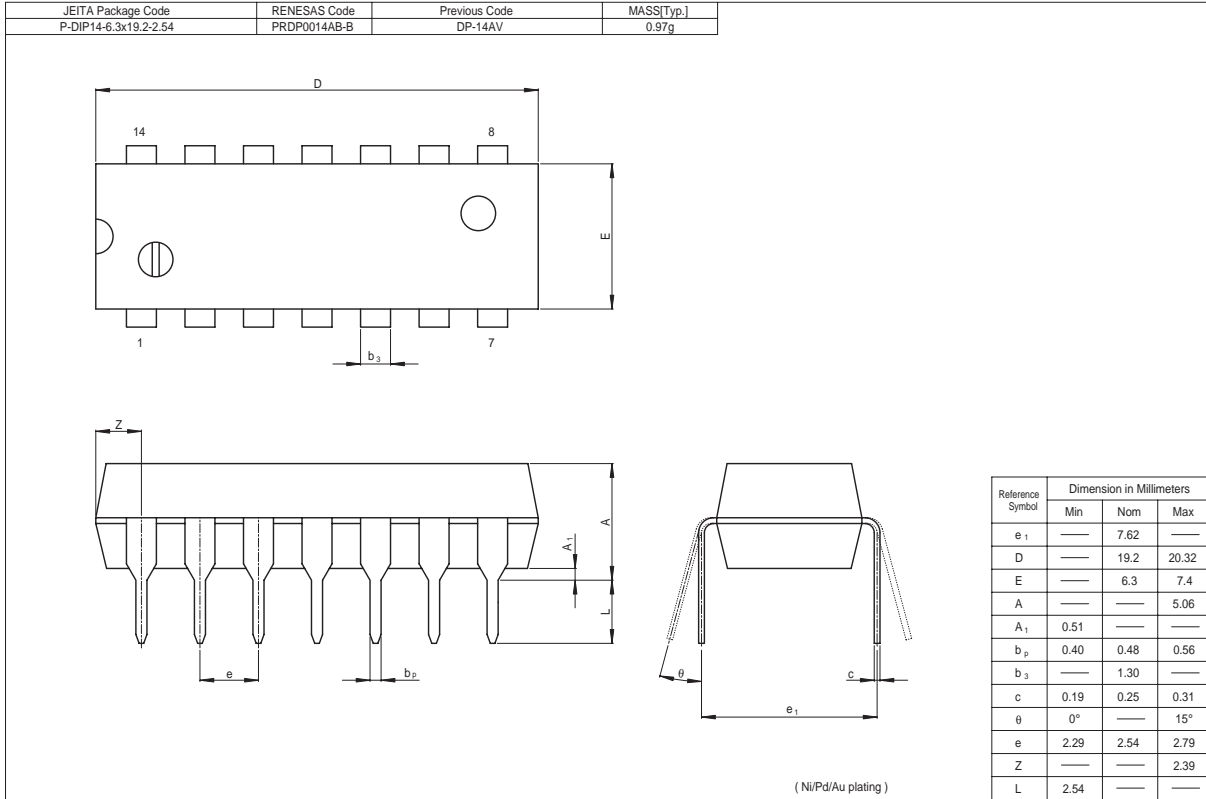
Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

| Item | Symbol | min. | typ. | max. | Unit | Condition |
|------------------------|------------------|------|------|------|------|---|
| Propagation delay time | t _{PLH} | — | 8 | 15 | ns | C _L = 15 pF, R _L = 2 kΩ |
| | t _{PHL} | — | 13 | 20 | ns | |

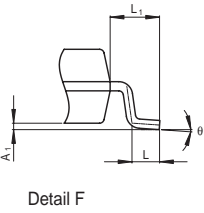
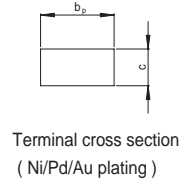
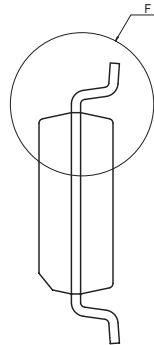
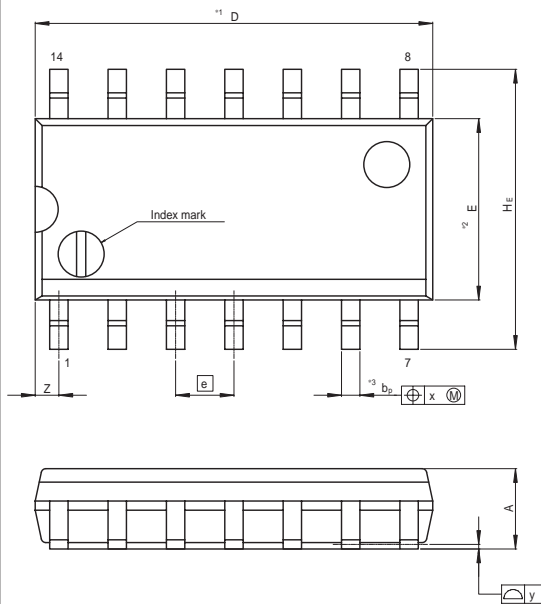
Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".

Package Dimensions



HD74LS30

| | | | |
|--|------------------------------|---------------------------|---------------------|
| JEITA Package Code P-SOP14-3.95x8.65-1.27 | RENESAS Code PRSP0014DE-A | Previous Code FP-14DNV | MASS[Typ.] 0.13g |
|--|------------------------------|---------------------------|---------------------|



NOTE)
1. DIMENSIONS *1 (Nom)*AND*2*
DO NOT INCLUDE MOLD FLASH.
2. DIMENSION *3* DOES NOT
INCLUDE TRIM OFFSET.

| Reference Symbol | Dimension in Millimeters | | |
|------------------|--------------------------|------|-------|
| | Min | Nom | Max |
| D | — | 8.65 | 9.05 |
| E | — | 3.95 | — |
| A ₂ | — | — | — |
| A ₁ | 0.10 | 0.14 | 0.25 |
| A | — | — | 1.75 |
| b _p | 0.34 | 0.40 | 0.46 |
| b ₁ | — | — | — |
| c | 0.15 | 0.20 | 0.25 |
| c ₁ | — | — | — |
| θ | 0° | — | 8° |
| H _E | 5.80 | 6.10 | 6.20 |
| e | — | 1.27 | — |
| x | — | — | 0.25 |
| y | — | — | 0.15 |
| Z | — | — | 0.635 |
| L | 0.40 | 0.60 | 1.27 |
| L ₁ | — | 1.08 | — |

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Renesas Technology America, Inc.

450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.

10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.

Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.

1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001