

# 74LV00

## Quad 2-input NAND gate

Rev. 03 — 20 December 2007

Product data sheet

### 1. General description

The 74LV00 is a low-voltage Si-gate CMOS device that is pin and function compatible with 74HC00 and 74HCT00.

The 74LV00 provides a quad 2-input NAND function.

### 2. Features

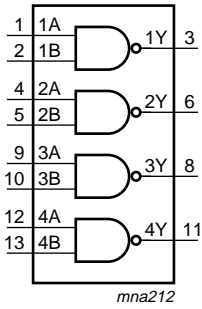
- Wide operating voltage: 1.0 V to 5.5 V
- Optimized for low voltage applications: 1.0 V to 3.6 V
- Accepts TTL input levels between  $V_{CC} = 2.7$  V and  $V_{CC} = 3.6$  V
- Typical output ground bounce < 0.8 V at  $V_{CC} = 3.3$  V and  $T_{amb} = 25$  °C
- Typical HIGH-level output voltage ( $V_{OH}$ ) undershoot: > 2 V at  $V_{CC} = 3.3$  V and  $T_{amb} = 25$  °C
- ESD protection:
  - ◆ HBM JESD22-A114E exceeds 2000 V
  - ◆ MM JESD22-A115-A exceeds 200 V
- Multiple package options
- Specified from -40 °C to +85 °C and from -40 °C to +125 °C

### 3. Ordering information

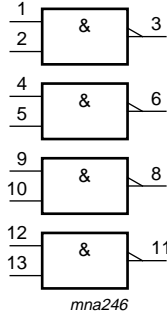
Table 1. Ordering information

| Type number | Package           |          |  |          |
|-------------|-------------------|----------|--|----------|
|             | Temperature range | Name     | Description  | Version  |
| 74LV00N     | -40 °C to +125 °C | DIP14    | plastic dual in-line package; 14 leads (300 mil)   | SOT27-1  |
| 74LV00D     | -40 °C to +125 °C | SO14     | plastic small outline package; 14 leads;<br>body width 3.9 mm  | SOT108-1 |
| 74LV00DB    | -40 °C to +125 °C | SSOP14   | plastic shrink small outline package; 14 leads;<br>body width 5.3 mm   | SOT337-1 |
| 74LV00PW    | -40 °C to +125 °C | TSSOP14  | plastic thin shrink small outline package; 14 leads;<br>body width 4.4 mm  | SOT402-1 |
| 74LV00BQ    | -40 °C to +125 °C | DHVQFN14 | plastic dual in-line compatible thermal enhanced very<br>thin quad flat package; no leads; 14 terminals;<br>body 2.5 × 3 × 0.85 mm | SOT762-1 |

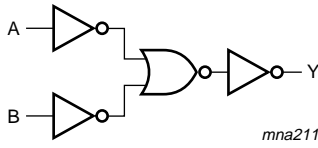
### 4. Functional diagram



*mna212*



*mna246*



*mna211*

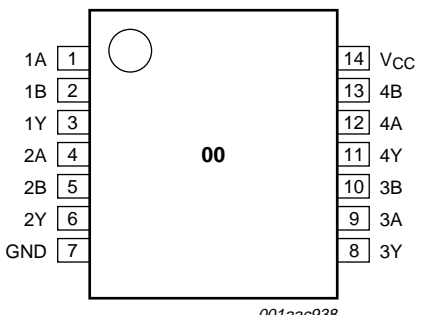
**Fig 1. Logic symbol**

**Fig 2. IEC logic symbol**

**Fig 3. Logic diagram (one gate)**

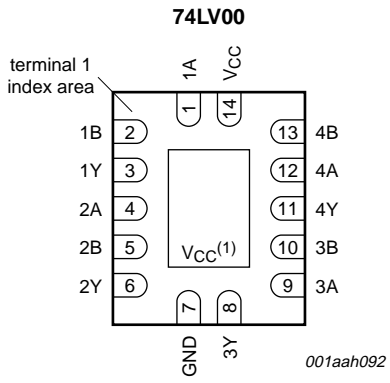
### 5. Pinning information

#### 5.1 Pinning



*001aac938*

**74LV00**



*001aah092*

Transparent top view

(1) The die substrate is attached to this pad using conductive die attach material. It can not be used as a supply pin or input.

**Fig 4. Pin configuration DIP14, SO14 and (T)SSOP14**

**Fig 5. Pin configuration DHVQFN14**

#### 5.2 Pin description

**Table 2. Pin description**

| Symbol | Pin | Description |
|--------|-----|-------------|
| 1A     | 1   | data input  |
| 1B     | 2   | data input  |
| 1Y     | 3   | data output |
| 2A     | 4   | data input  |
| 2B     | 5   | data input  |
| 2Y     | 6   | data output |

Table 2. Pin description ...continued

| Symbol          | Pin | Description    |
|-----------------|-----|----------------|
| GND             | 7   | ground (0 V)   |
| 3Y              | 8   | data output    |
| 3A              | 9   | data input     |
| 3B              | 10  | data input     |
| 4Y              | 11  | data output    |
| 4A              | 12  | data input     |
| 4B              | 13  | data input     |
| V <sub>CC</sub> | 14  | supply voltage |

## 6. Functional description

Table 3. Function table<sup>[1]</sup>

| Input |    | Output |
|-------|----|--------|
| nA    | nB | nY     |
| L     | X  | H      |
| X     | L  | H      |
| H     | H  | L      |

[1] H = HIGH voltage level; L = LOW voltage level; X = don't care

## 7. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).

| Symbol           | Parameter               | Conditions   | Min   | Max  | Unit |
|------------------|-------------------------|--|-------|------|------|
| V <sub>CC</sub>  | supply voltage          |  | -0.5  | +7.0 | V    |
| I <sub>IK</sub>  | input clamping current  | $V_I < -0.5 \text{ V}$ or $V_I > V_{CC} + 0.5 \text{ V}$ | [1] - | ±20  | mA   |
| I <sub>OK</sub>  | output clamping current | $V_O < -0.5 \text{ V}$ or $V_O > V_{CC} + 0.5 \text{ V}$ | [1] - | ±50  | mA   |
| I <sub>O</sub>   | output current          | $V_O = -0.5 \text{ V}$ to $(V_{CC} + 0.5 \text{ V})$     | -     | ±25  | mA   |
| I <sub>CC</sub>  | supply current          |  | -     | 50   | mA   |
| I <sub>GND</sub> | ground current          |  | -50   | -    | mA   |
| T <sub>stg</sub> | storage temperature     |  | -65   | +150 | °C   |
| P <sub>tot</sub> | total power dissipation | T <sub>amb</sub> = -40 °C to +125 °C                     |       |      |      |
|                  |                         | DIP14 package  | [2] - | 750  | mW   |
|                  |                         | SO14 package   | [3] - | 500  | mW   |
|                  |                         | (T)SSOP14 package  | [4] - | 500  | mW   |
|                  |                         | DHVQFN14 package   | [5] - | 500  | mW   |

[1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

[2] P<sub>tot</sub> derates linearly with 12 mW/K above 70 °C.

[3] P<sub>tot</sub> derates linearly with 8 mW/K above 70 °C.

[4] P<sub>tot</sub> derates linearly with 5.5 mW/K above 60 °C.

[5] P<sub>tot</sub> derates linearly with 4.5 mW/K above 60 °C.

## 8. Recommended operating conditions

**Table 5. Recommended operating conditions**

Voltages are referenced to GND (ground = 0 V).

| Symbol              | Parameter                           | Conditions                              | Min     | Typ | Max      | Unit |
|---------------------|-------------------------------------|---|---------|-----|----------|------|
| $V_{CC}$            | supply voltage                      |   | [1] 1.0 | 3.3 | 5.5      | V    |
| $V_I$               | input voltage                       |   | 0       | -   | $V_{CC}$ | V    |
| $V_O$               | output voltage                      |   | 0       | -   | $V_{CC}$ | V    |
| $T_{amb}$           | ambient temperature                 |   | -40     | +25 | +125     | °C   |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CC} = 1.0\text{ V to }2.0\text{ V}$ | -       | -   | 500      | ns/V |
|                     |                                     | $V_{CC} = 2.0\text{ V to }2.7\text{ V}$ | -       | -   | 200      | ns/V |
|                     |                                     | $V_{CC} = 2.7\text{ V to }3.6\text{ V}$ | -       | -   | 100      | ns/V |
|                     |                                     | $V_{CC} = 3.6\text{ V to }5.5\text{ V}$ | -       | -   | 50       | ns/V |

[1] The static characteristics are guaranteed from  $V_{CC} = 1.2\text{ V}$  to  $V_{CC} = 5.5\text{ V}$ , but LV devices are guaranteed to function down to  $V_{CC} = 1.0\text{ V}$  (with input levels GND or  $V_{CC}$ ).

## 9. Static characteristics

**Table 6. Static characteristics**

Voltages are referenced to GND (ground = 0 V).

| Symbol                                       | Parameter                 | Conditions                                       | -40 °C to +85 °C |                    |             | -40 °C to +125 °C |             | Unit |
|--|---------------------------|--|------------------|--------------------|-------------|-------------------|-------------|------|
|  |                           |  | Min              | Typ <sup>[1]</sup> | Max         | Min               | Max         |      |
| $V_{IH}$                                     | HIGH-level input voltage  | $V_{CC} = 1.2\text{ V}$                          | 0.9              | -                  | -           | 0.9               | -           | V    |
|  |                           | $V_{CC} = 2.0\text{ V}$                          | 1.4              | -                  | -           | 1.4               | -           | V    |
|  |                           | $V_{CC} = 2.7\text{ V to }3.6\text{ V}$          | 2.0              | -                  | -           | 2.0               | -           | V    |
|  |                           | $V_{CC} = 4.5\text{ V to }5.5\text{ V}$          | $0.7V_{CC}$      | -                  | -           | $0.7V_{CC}$       | -           | V    |
| $V_{IL}$                                     | LOW-level input voltage   | $V_{CC} = 1.2\text{ V}$                          | -                | -                  | 0.3         | -                 | 0.3         | V    |
|  |                           | $V_{CC} = 2.0\text{ V}$                          | -                | -                  | 0.6         | -                 | 0.6         | V    |
|  |                           | $V_{CC} = 2.7\text{ V to }3.6\text{ V}$          | -                | -                  | 0.8         | -                 | 0.8         | V    |
|  |                           | $V_{CC} = 4.5\text{ V to }5.5\text{ V}$          | -                | -                  | $0.3V_{CC}$ | -                 | $0.3V_{CC}$ | V    |
| $V_{OH}$                                     | HIGH-level output voltage | $V_I = V_{IH}$ or $V_{IL}$                       |                  |                    |             |                   |             |      |
|  |                           | $I_O = -100\ \mu\text{A}; V_{CC} = 1.2\text{ V}$ | -                | 1.2                | -           | -                 | -           | V    |
|  |                           | $I_O = -100\ \mu\text{A}; V_{CC} = 2.0\text{ V}$ | 1.8              | 2.0                | -           | 1.8               | -           | V    |
|  |                           | $I_O = -100\ \mu\text{A}; V_{CC} = 2.7\text{ V}$ | 2.5              | 2.7                | -           | 2.5               | -           | V    |
|  |                           | $I_O = -100\ \mu\text{A}; V_{CC} = 3.0\text{ V}$ | 2.8              | 3.0                | -           | 2.8               | -           | V    |
|  |                           | $I_O = -100\ \mu\text{A}; V_{CC} = 4.5\text{ V}$ | 4.3              | 4.5                | -           | 4.3               | -           | V    |
|  |                           | $I_O = -6\text{ mA}; V_{CC} = 3.0\text{ V}$      | 2.4              | 2.82               | -           | 2.2               | -           | V    |
| $I_O = -12\text{ mA}; V_{CC} = 4.5\text{ V}$ | 3.6                       | 4.2  | -                | 3.5                | -           | V                 |             |      |

**Table 6. Static characteristics ...continued**  
 Voltages are referenced to GND (ground = 0 V).

| Symbol           | Parameter                 | Conditions   | -40 °C to +85 °C |                    |      | -40 °C to +125 °C |      | Unit |
|------------------|---------------------------|--|------------------|--------------------|------|-------------------|------|------|
|                  |                           |  | Min              | Typ <sup>[1]</sup> | Max  | Min               | Max  |      |
| V <sub>OL</sub>  | LOW-level output voltage  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                    |                  |                    |      |                   |      |      |
|                  |                           | I <sub>O</sub> = 100 μA; V <sub>CC</sub> = 1.2 V                                       | -                | 0                  | -    | -                 | -    | V    |
|                  |                           | I <sub>O</sub> = 100 μA; V <sub>CC</sub> = 2.0 V                                       | -                | 0                  | 0.2  | -                 | 0.2  | V    |
|                  |                           | I <sub>O</sub> = 100 μA; V <sub>CC</sub> = 2.7 V                                       | -                | 0                  | 0.2  | -                 | 0.2  | V    |
|                  |                           | I <sub>O</sub> = 100 μA; V <sub>CC</sub> = 3.0 V                                       | -                | 0                  | 0.2  | -                 | 0.2  | V    |
|                  |                           | I <sub>O</sub> = 100 μA; V <sub>CC</sub> = 4.5 V                                       | -                | 0                  | 0.2  | -                 | 0.2  | V    |
|                  |                           | I <sub>O</sub> = 6 mA; V <sub>CC</sub> = 3.0 V   | -                | 0.25               | 0.40 | -                 | 0.50 | V    |
|                  |                           | I <sub>O</sub> = 12 mA; V <sub>CC</sub> = 4.5 V  | -                | 0.35               | 0.55 | -                 | 0.65 | V    |
| I <sub>I</sub>   | input leakage current     | V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 5.5 V                       | -                | -                  | 1.0  | -                 | 1.0  | μA   |
| I <sub>CC</sub>  | supply current            | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 5.5 V | -                | -                  | 20.0 | -                 | 40   | μA   |
| ΔI <sub>CC</sub> | additional supply current | per input; V <sub>I</sub> = V <sub>CC</sub> - 0.6 V; V <sub>CC</sub> = 2.7 V to 3.6 V  | -                | -                  | 500  | -                 | 850  | μA   |
| C <sub>I</sub>   | input capacitance         |  | -                | 3.5                | -    | -                 | -    | pF   |

[1] Typical values are measured at T<sub>amb</sub> = 25 °C.

## 10. Dynamic characteristics

**Table 7. Dynamic characteristics**  
 GND = 0 V; For test circuit see [Figure 7](#).

| Symbol          | Parameter                     | Conditions   | -40 °C to +85 °C |                    |     | -40 °C to +125 °C |     | Unit |
|-----------------|-------------------------------|--|------------------|--------------------|-----|-------------------|-----|------|
|                 |                               |  | Min              | Typ <sup>[1]</sup> | Max | Min               | Max |      |
| t <sub>pd</sub> | propagation delay             | nA, nB to nY; see <a href="#">Figure 6</a> <sup>[2]</sup>  |                  |                    |     |                   |     |      |
|                 |                               | V <sub>CC</sub> = 1.2 V  | -                | 45                 | -   | -                 | -   | ns   |
|                 |                               | V <sub>CC</sub> = 2.0 V  | -                | 15                 | 26  | -                 | 31  | ns   |
|                 |                               | V <sub>CC</sub> = 2.7 V  | -                | 11                 | 18  | -                 | 23  | ns   |
|                 |                               | V <sub>CC</sub> = 3.0 V to 3.6 V; C <sub>L</sub> = 15 pF <sup>[3]</sup>                                | -                | 7                  | -   | -                 | -   | ns   |
|                 |                               | V <sub>CC</sub> = 3.0 V to 3.6 V <sup>[3]</sup>  | -                | 9.0                | 15  | -                 | 18  | ns   |
|                 |                               | V <sub>CC</sub> = 4.5 V to 5.5 V <sup>[3]</sup>  | -                | 6.5                | 11  | -                 | 14  | ns   |
| C <sub>PD</sub> | power dissipation capacitance | C <sub>L</sub> = 50 pF; f <sub>i</sub> = 1 MHz; V <sub>I</sub> = GND to V <sub>CC</sub> <sup>[4]</sup> | -                | 22                 | -   | -                 | -   | pF   |

[1] All typical values are measured at T<sub>amb</sub> = 25 °C.

[2] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.

[3] Typical values are measured at nominal supply voltage (V<sub>CC</sub> = 3.3 V and V<sub>CC</sub> = 5.0 V).

[4] C<sub>PD</sub> is used to determine the dynamic power dissipation (P<sub>D</sub> in μW).

$$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \Sigma(C_L \times V_{CC}^2 \times f_o) \text{ where:}$$

f<sub>i</sub> = input frequency in MHz, f<sub>o</sub> = output frequency in MHz

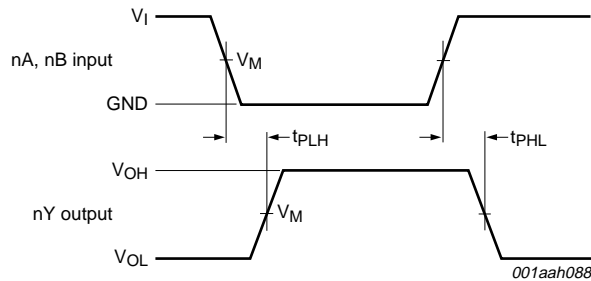
C<sub>L</sub> = output load capacitance in pF

V<sub>CC</sub> = supply voltage in V

N = number of inputs switching

Σ(C<sub>L</sub> × V<sub>CC</sub><sup>2</sup> × f<sub>o</sub>) = sum of the outputs.

## 11. Waveforms



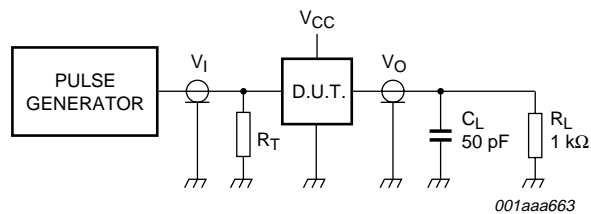
Measurement points are given in [Table 8](#).

$V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

**Fig 6. The input (nA, nB) to output (nY) propagation delays**

**Table 8. Measurement points**

| Supply voltage | Input       | Output      |
|----------------|-------------|-------------|
| $V_{CC}$       | $V_M$       | $V_M$       |
| < 2.7 V        | $0.5V_{CC}$ | $0.5V_{CC}$ |
| 2.7 V to 3.6 V | 1.5 V       | 1.5 V       |
| $\geq 4.5$ V   | $0.5V_{CC}$ | $0.5V_{CC}$ |



Test data is given in [Table 9](#).

Definitions test circuit:

$R_T$  = Termination resistance should be equal to output impedance  $Z_o$  of the pulse generator.

$R_L$  = Load resistance.

$C_L$  = Load capacitance including jig and probe capacitance.

**Fig 7. Load circuit for switching times**

**Table 9. Test data**

| Supply voltage | Input    | $t_r, t_f$    |
|----------------|----------|---------------|
| $V_{CC}$       | $V_I$    | $t_r, t_f$    |
| < 2.7 V        | $V_{CC}$ | $\leq 2.5$ ns |
| 2.7 V to 3.6 V | 2.7 V    | $\leq 2.5$ ns |
| $\geq 4.5$ V   | $V_{CC}$ | $\leq 2.5$ ns |

12. Package outline

DIP14: plastic dual in-line package; 14 leads (300 mil)

SOT27-1

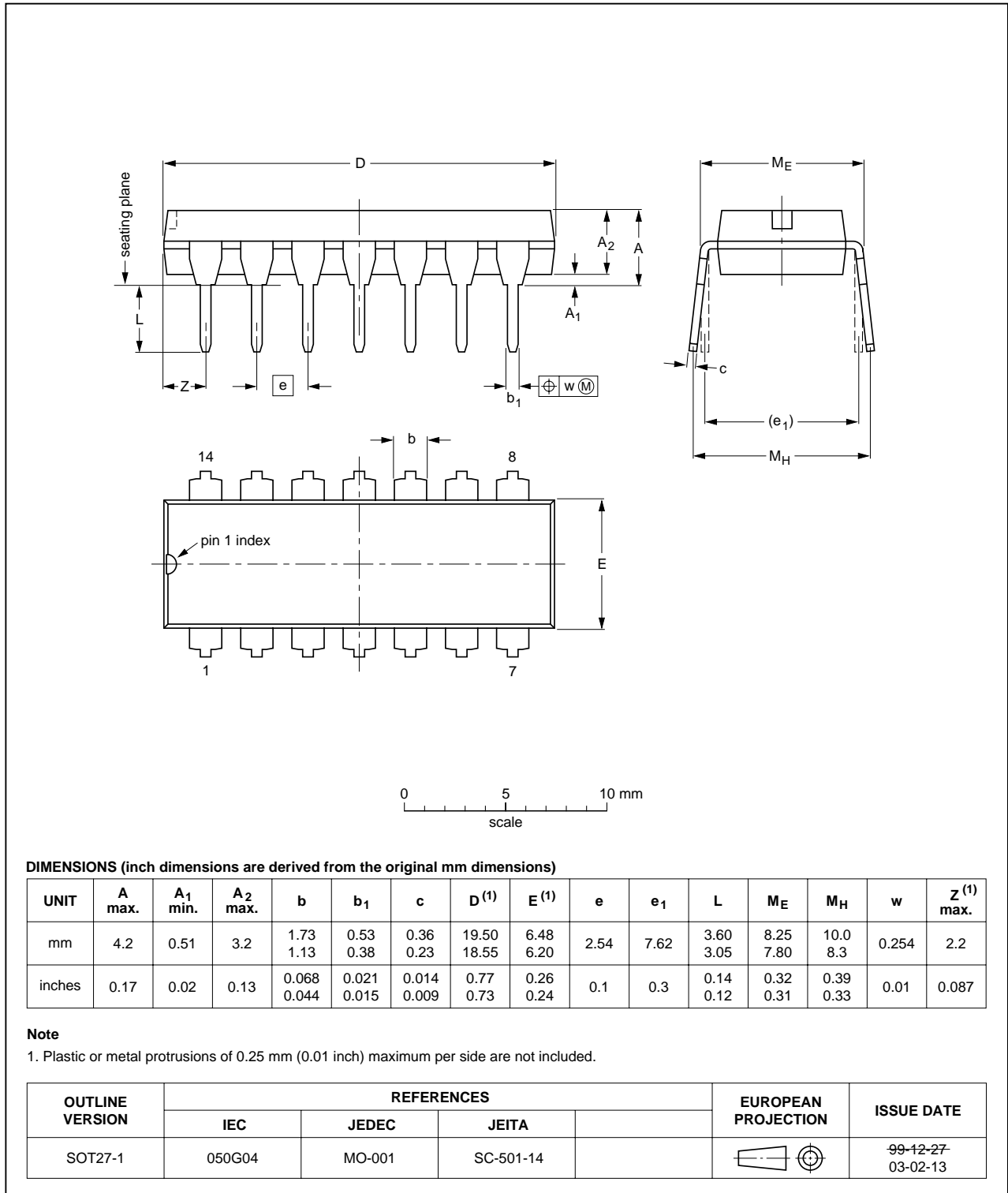


Fig 8. Package outline SOT27-1 (DIP14)

SO14: plastic small outline package; 14 leads; body width 3.9 mm

SOT108-1

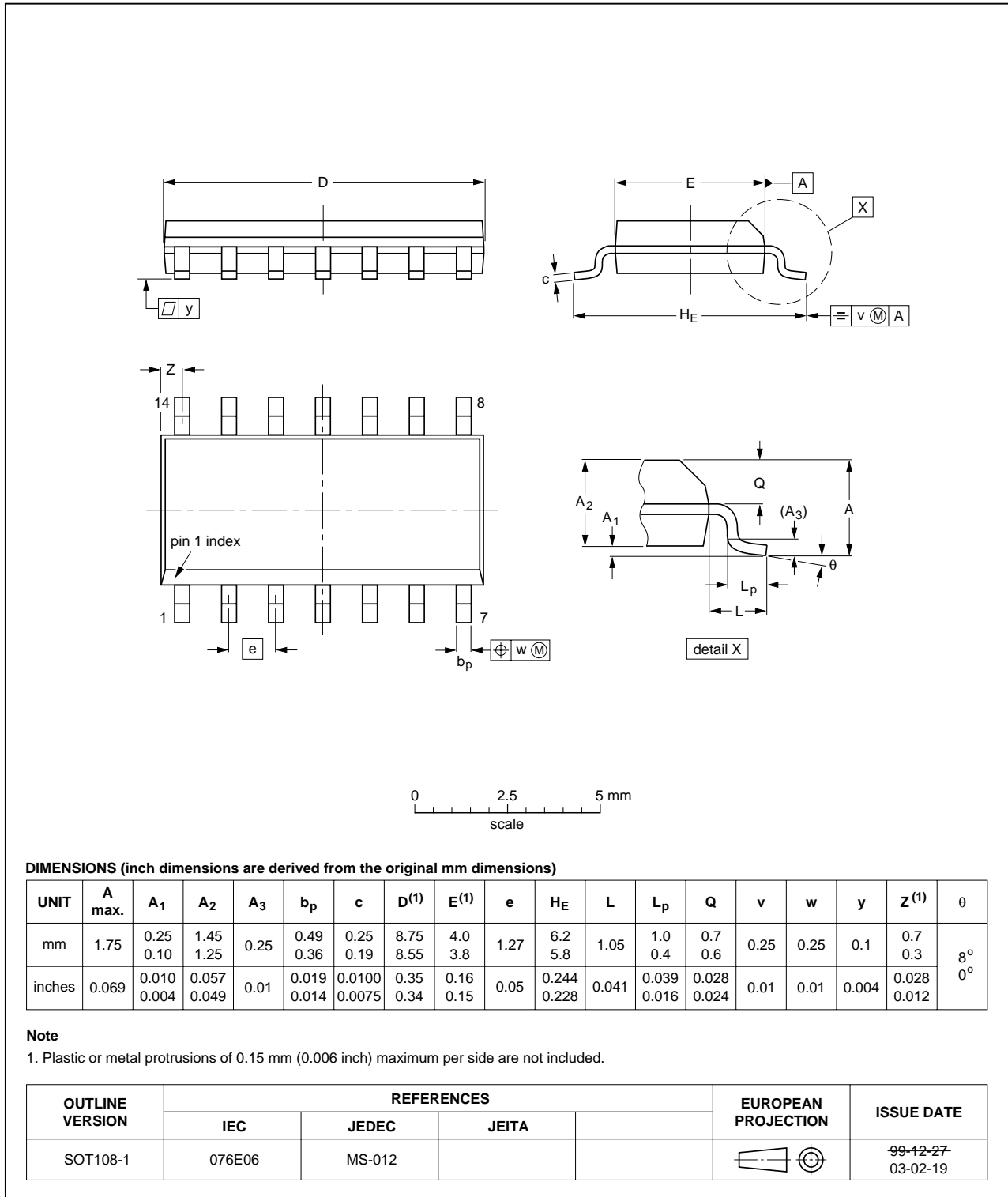


Fig 9. Package outline SOT108-1 (SO14)



SSOP14: plastic shrink small outline package; 14 leads; body width 5.3 mm

SOT337-1

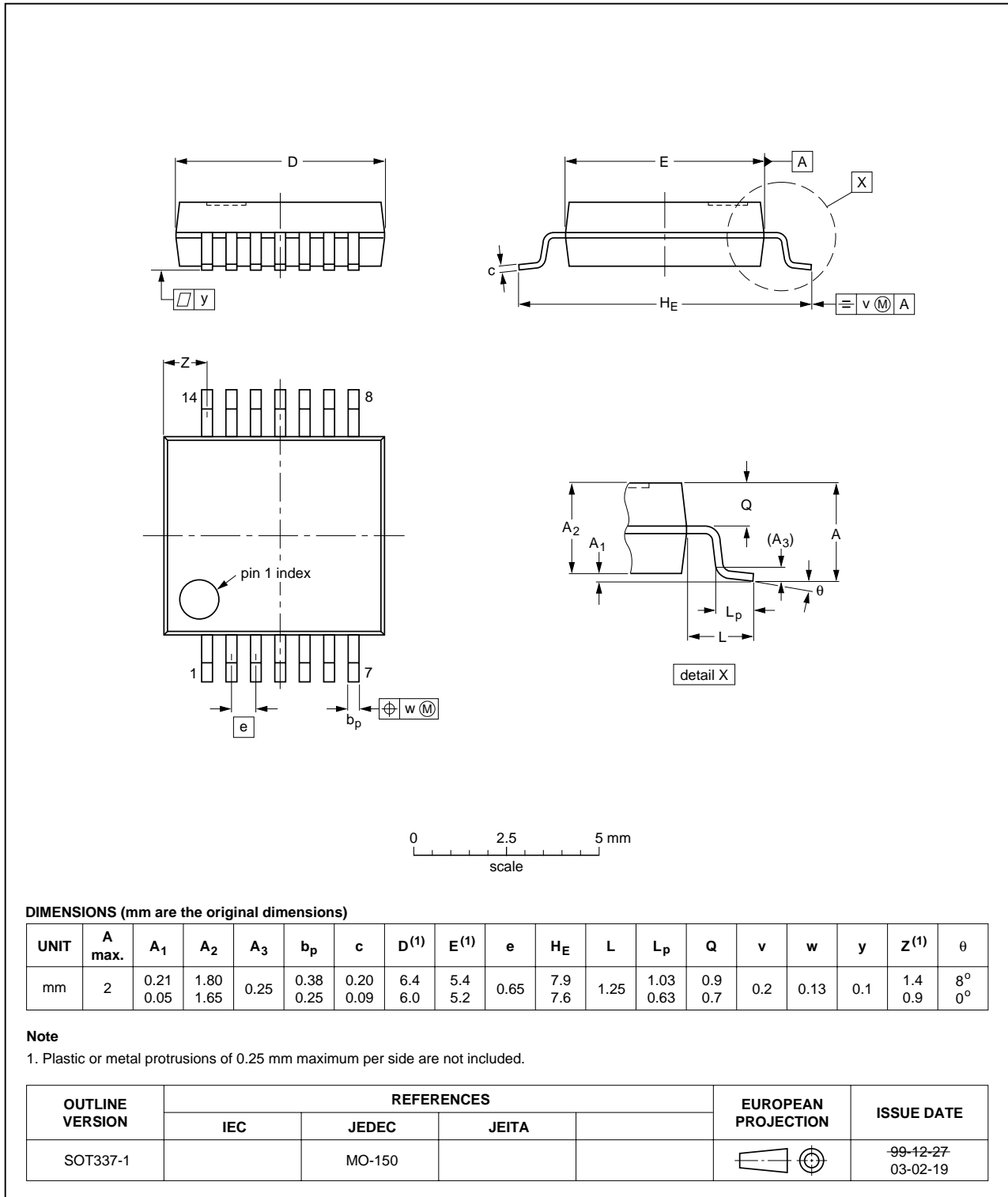


Fig 10. Package outline SOT337-1 (SSOP14)

TSSOP14: plastic thin shrink small outline package; 14 leads; body width 4.4 mm

SOT402-1

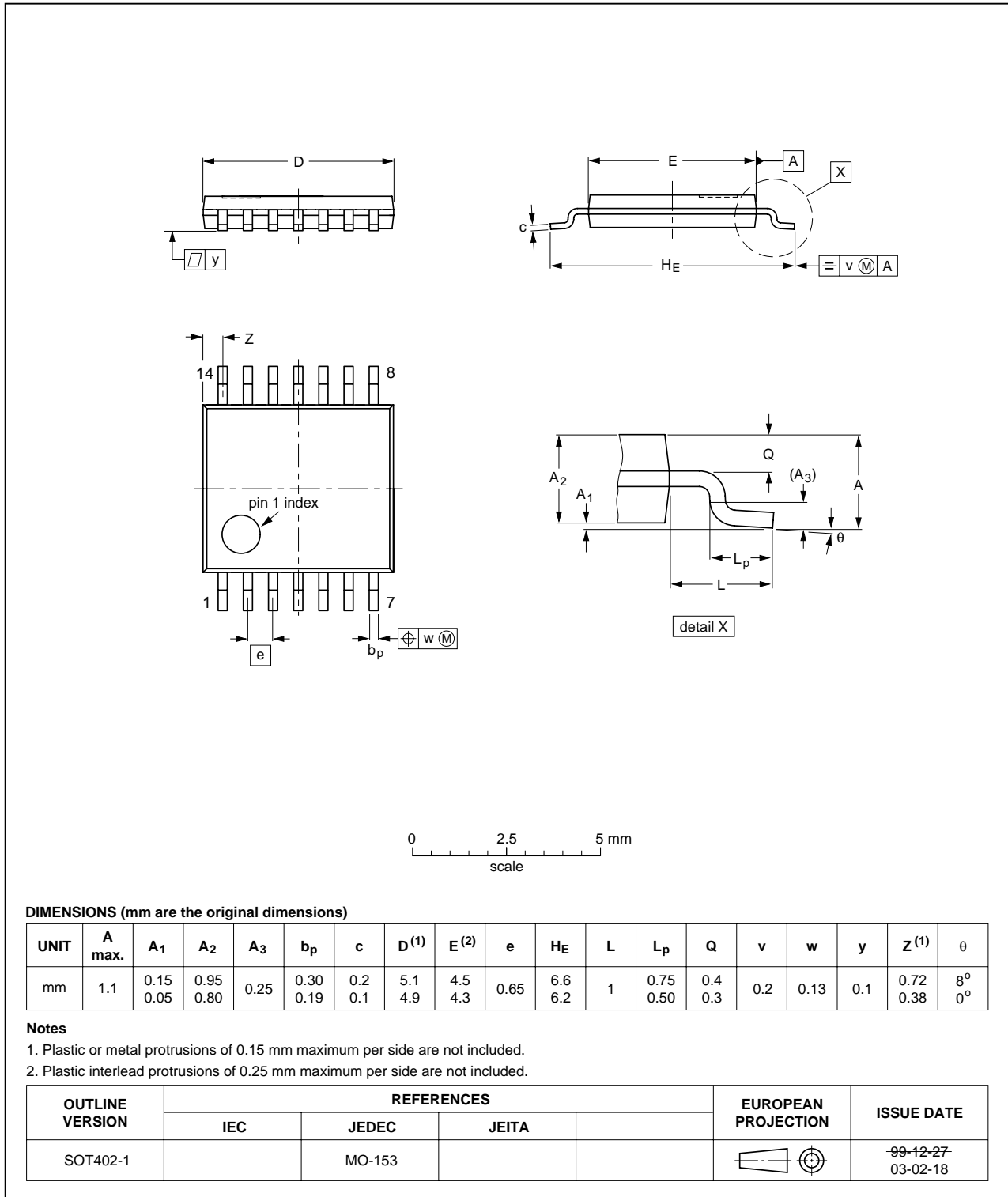


Fig 11. Package outline SOT402-1 (TSSOP14)

DHVQFN14: plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads; 14 terminals; body 2.5 x 3 x 0.85 mm

SOT762-1

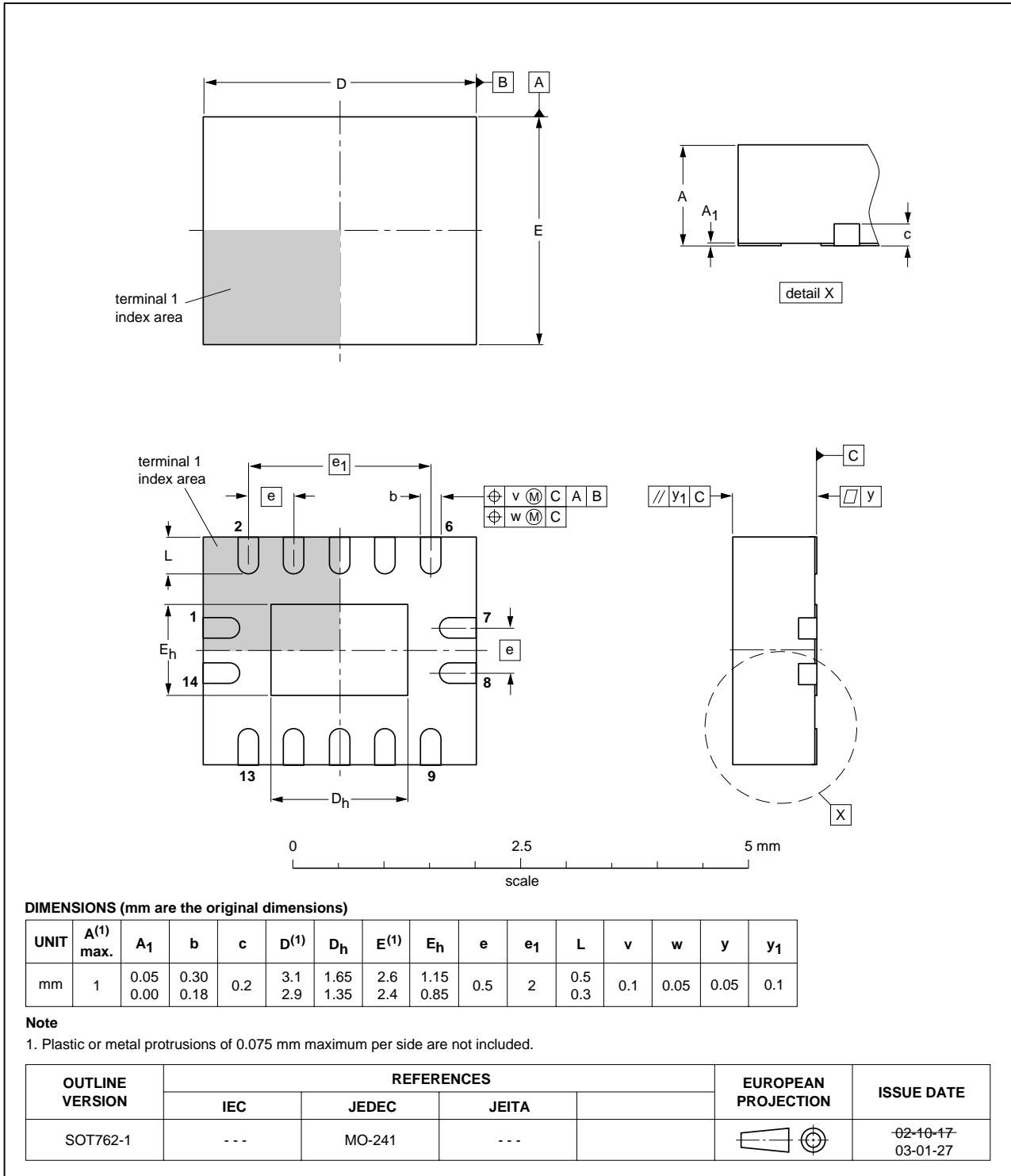


Fig 12. Package outline SOT762-1 (DHVQFN14)

## 13. Abbreviations

Table 10. Abbreviations

| Acronym | Description                             |
|---------|---|
| CMOS    | Complementary Metal Oxide Semiconductor |
| DUT     | Device Under Test                       |
| ESD     | ElectroStatic Discharge                 |
| HBM     | Human Body Model                        |
| MM      | Machine Model                           |
| TTL     | Transistor-Transistor Logic             |

## 14. Revision history

Table 11. Revision history

| Document ID    | Release date   | Data sheet status     | Change notice | Supersedes |
|----------------|--|-----------------------|---------------|------------|
| 74LV00_3       | 20071220   | Product data sheet    | -             | 74LV00_2   |
| Modifications: | <ul style="list-style-type: none"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.</li><li>• Legal texts have been adapted to the new company name where appropriate.</li><li>• <a href="#">Section 3</a>: DHVQFN14 package added.</li><li>• <a href="#">Section 7</a>: derating values added for DHVQFN14 package.</li><li>• <a href="#">Section 12</a>: outline drawing added for DHVQFN14 package.</li></ul> |                       |               |            |
| 74LV00_2       | 19980420   | Product specification | -             | 74LV00_1   |
| 74LV00_1       | 19970203   | Product specification | -             | -          |

## 15. Legal information

### 15.1 Data sheet status

| Document status <sup>[1][2]</sup> | Product status <sup>[3]</sup> | Definition  |
|-----------------------------------|-------------------------------|---|
| Objective [short] data sheet      | Development                   | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet    | Qualification                 | This document contains data from the preliminary specification.                       |
| Product [short] data sheet        | Production                    | This document contains the product specification.                                     |

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

### 15.2 Definitions

**Draft** — The document is a draft version only. The content is still under internal review and subject to formal approval, which may result in modifications or additions. NXP Semiconductors does not give any representations or warranties as to the accuracy or completeness of information included herein and shall have no liability for the consequences of use of such information.

**Short data sheet** — A short data sheet is an extract from a full data sheet with the same product type number(s) and title. A short data sheet is intended for quick reference only and should not be relied upon to contain detailed and full information. For detailed and full information see the relevant full data sheet, which is available on request via the local NXP Semiconductors sales office. In case of any inconsistency or conflict with the short data sheet, the full data sheet shall prevail.

### 15.3 Disclaimers

**General** — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

**Right to make changes** — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

**Suitability for use** — NXP Semiconductors products are not designed, authorized or warranted to be suitable for use in medical, military, aircraft, space or life support equipment, nor in applications where failure or

malfunction of an NXP Semiconductors product can reasonably be expected to result in personal injury, death or severe property or environmental damage. NXP Semiconductors accepts no liability for inclusion and/or use of NXP Semiconductors products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

**Applications** — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

**Limiting values** — Stress above one or more limiting values (as defined in the Absolute Maximum Ratings System of IEC 60134) may cause permanent damage to the device. Limiting values are stress ratings only and operation of the device at these or any other conditions above those given in the Characteristics sections of this document is not implied. Exposure to limiting values for extended periods may affect device reliability.

**Terms and conditions of sale** — NXP Semiconductors products are sold subject to the general terms and conditions of commercial sale, as published at <http://www.nxp.com/profile/terms>, including those pertaining to warranty, intellectual property rights infringement and limitation of liability, unless explicitly otherwise agreed to in writing by NXP Semiconductors. In case of any inconsistency or conflict between information in this document and such terms and conditions, the latter will prevail.

**No offer to sell or license** — Nothing in this document may be interpreted or construed as an offer to sell products that is open for acceptance or the grant, conveyance or implication of any license under any copyrights, patents or other industrial or intellectual property rights.

### 15.4 Trademarks

Notice: All referenced brands, product names, service names and trademarks are the property of their respective owners.

## 16. Contact information

For additional information, please visit: <http://www.nxp.com>

For sales office addresses, send an email to: [salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)

## 17. Contents

|           |   |           |
|-----------|---|-----------|
| <b>1</b>  | <b>General description</b> .....              | <b>1</b>  |
| <b>2</b>  | <b>Features</b> .....                         | <b>1</b>  |
| <b>3</b>  | <b>Ordering information</b> .....             | <b>1</b>  |
| <b>4</b>  | <b>Functional diagram</b> .....               | <b>2</b>  |
| <b>5</b>  | <b>Pinning information</b> .....              | <b>2</b>  |
| 5.1       | Pinning .....                                 | 2         |
| 5.2       | Pin description .....                         | 2         |
| <b>6</b>  | <b>Functional description</b> .....           | <b>3</b>  |
| <b>7</b>  | <b>Limiting values</b> .....                  | <b>3</b>  |
| <b>8</b>  | <b>Recommended operating conditions</b> ..... | <b>4</b>  |
| <b>9</b>  | <b>Static characteristics</b> .....           | <b>4</b>  |
| <b>10</b> | <b>Dynamic characteristics</b> .....          | <b>5</b>  |
| <b>11</b> | <b>Waveforms</b> .....                        | <b>6</b>  |
| <b>12</b> | <b>Package outline</b> .....                  | <b>7</b>  |
| <b>13</b> | <b>Abbreviations</b> .....                    | <b>12</b> |
| <b>14</b> | <b>Revision history</b> .....                 | <b>12</b> |
| <b>15</b> | <b>Legal information</b> .....                | <b>13</b> |
| 15.1      | Data sheet status .....                       | 13        |
| 15.2      | Definitions .....                             | 13        |
| 15.3      | Disclaimers .....                             | 13        |
| 15.4      | Trademarks .....                              | 13        |
| <b>16</b> | <b>Contact information</b> .....              | <b>13</b> |
| <b>17</b> | <b>Contents</b> .....                         | <b>14</b> |

Please be aware that important notices concerning this document and the product(s) described herein, have been included in section 'Legal information'.



© NXP B.V. 2007.

All rights reserved.

For more information, please visit: <http://www.nxp.com>

For sales office addresses, please send an email to: [salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)

Date of release: 20 December 2007

Document identifier: 74LV00\_3