

# 74AHC1G126-Q100; 74AHCT1G126-Q100

Bus buffer/line driver; 3-state

Rev. 1 — 26 March 2013

Product data sheet

## 1. General description

74AHC1G126-Q100 and 74AHCT1G126-Q100 are high-speed Si-gate CMOS devices. They provide one non-inverting buffer/line driver with 3-state output. The output enable input pin (OE) controls the 3-state output. A LOW at pin OE causes the output to assume a high-impedance OFF-state.

The AHC device has CMOS input switching levels and supply voltage range 2 V to 5.5 V.

The AHCT device has TTL input switching levels and supply voltage range 4.5 V to 5.5 V.

This product has been qualified to the Automotive Electronics Council (AEC) standard Q100 (Grade 1) and is suitable for use in automotive applications.

## 2. Features and benefits

- Automotive product qualification in accordance with AEC-Q100 (Grade 1)
  - ◆ Specified from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  and from  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Symmetrical output impedance
- High noise immunity
- Low power dissipation
- Balanced propagation delays
- Multiple package options
- ESD protection:
  - ◆ MIL-STD-883, method 3015 exceeds 2000 V
  - ◆ HBM JESD22-A114F exceeds 2000 V
  - ◆ MM JESD22-A115-A exceeds 200 V ( $C = 200\text{ pF}$ ,  $R = 0\ \Omega$ )

## 3. Ordering information

Table 1. Ordering information

| Type number                             | Package                                         |        |                                                                           |          |
|-----------------------------------------|-------------------------------------------------|--------|---------------------------------------------------------------------------|----------|
|                                         | Temperature range                               | Name   | Description                                                               | Version  |
| 74AHC1G126GW-Q100<br>74AHCT1G126GW-Q100 | $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ | TSSOP5 | plastic thin shrink small outline package;<br>5 leads; body width 1.25 mm | SOT353-1 |
| 74AHC1G126GV-Q100<br>74AHCT1G126GV-Q100 | $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ | SC-74A | plastic surface-mounted package; 5 leads                                  | SOT753   |



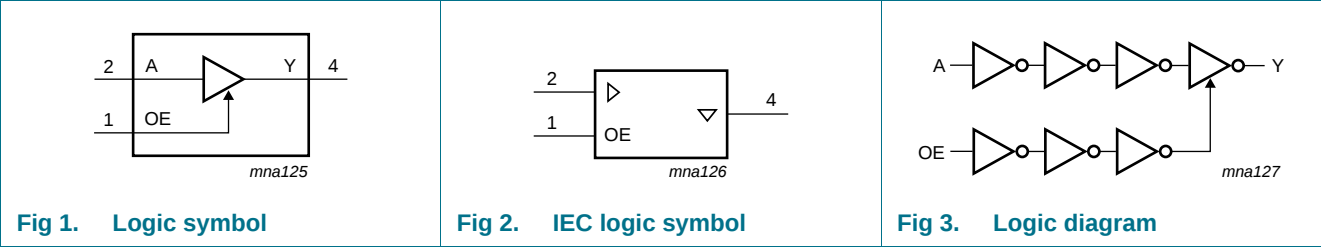
4. Marking

Table 2. Marking codes

| Type number        | Marking <sup>[1]</sup> |
|--------------------|------------------------|
| 74AHC1G126GW-Q100  | AN                     |
| 74AHCT1G126GW-Q100 | CN                     |
| 74AHC1G126GV-Q100  | A26                    |
| 74AHCT1G126GV-Q100 | C26                    |

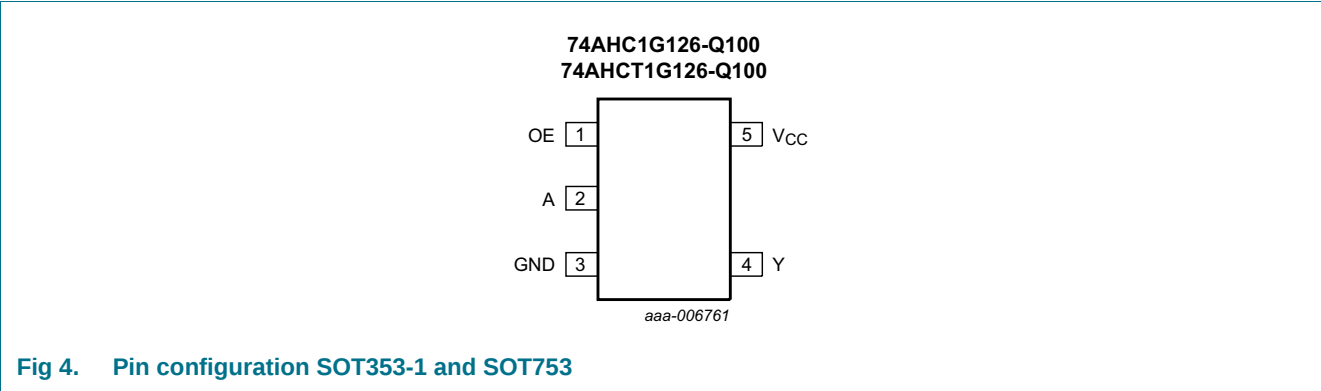
[1] The pin 1 indicator is located on the lower left corner of the device, below the marking code.

5. Functional diagram



6. Pinning information

6.1 Pinning



## 6.2 Pin description

**Table 3.** Pin description

| Symbol          | Pin | Description         |
|-----------------|-----|---------------------|
| OE              | 1   | output enable input |
| A               | 2   | data input A        |
| GND             | 3   | ground (0 V)        |
| Y               | 4   | data output Y       |
| n.c.            | -   | not connected       |
| V <sub>CC</sub> | 5   | supply voltage      |

## 7. Functional description

**Table 4.** Function table

H = HIGH voltage level; L = LOW voltage level; X = don't care; Z = high-impedance OFF-state

| Input |   | Output |
|-------|---|--------|
| OE    | A | Y      |
| H     | L | L      |
| H     | H | H      |
| L     | X | Z      |

## 8. Limiting values

**Table 5.** 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    |
| V <sub>I</sub>   | input voltage           |                                                                     | -0.5               | +7.0 | V    |
| I <sub>IK</sub>  | input clamping current  | V <sub>I</sub> < -0.5 V                                             | <sup>[1]</sup> -20 | -    | mA   |
| I <sub>OK</sub>  | output clamping current | V <sub>O</sub> < -0.5 V or V <sub>O</sub> > V <sub>CC</sub> + 0.5 V | <sup>[1]</sup> -   | ±20  | mA   |
| I <sub>O</sub>   | output current          | -0.5 V < V <sub>O</sub> < V <sub>CC</sub> + 0.5 V                   | -                  | ±25  | mA   |
| I <sub>CC</sub>  | supply current          |                                                                     | -                  | 75   | mA   |
| I <sub>GND</sub> | ground current          |                                                                     | -75                | -    | 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                                | <sup>[2]</sup> -   | 250  | mW   |

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

[2] For TSSOP5 and SC-74A packages: above 87.5 °C the value of P<sub>tot</sub> derates linearly with 4.0 mW/K.

## 9. Recommended operating conditions

**Table 6. Recommended operating conditions**

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

| Symbol              | Parameter                           | Conditions                      | 74AHC1G126-Q100 |     |                 | 74AHCT1G126-Q100 |     |                 | Unit |
|---------------------|-------------------------------------|---------------------------------|-----------------|-----|-----------------|------------------|-----|-----------------|------|
|                     |                                     |                                 | Min             | Typ | Max             | Min              | Typ | Max             |      |
| V <sub>CC</sub>     | supply voltage                      |                                 | 2.0             | 5.0 | 5.5             | 4.5              | 5.0 | 5.5             | V    |
| V <sub>I</sub>      | input voltage                       |                                 | 0               | -   | 5.5             | 0                | -   | 5.5             | V    |
| V <sub>O</sub>      | output voltage                      |                                 | 0               | -   | V <sub>CC</sub> | 0                | -   | V <sub>CC</sub> | V    |
| T <sub>amb</sub>    | ambient temperature                 |                                 | -40             | +25 | +125            | -40              | +25 | +125            | °C   |
| $\Delta t/\Delta V$ | input transition rise and fall rate | V <sub>CC</sub> = 3.3 V ± 0.3 V | -               | -   | 100             | -                | -   | -               | ns/V |
|                     |                                     | V <sub>CC</sub> = 5.0 V ± 0.5 V | -               | -   | 20              | -                | -   | 20              | ns/V |

## 10. Static characteristics

**Table 7. Static characteristics**

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

| Symbol          | Parameter                 | Conditions                                                                                                             | 25 °C |     |       | −40 °C to +85 °C |      | −40 °C to +125 °C |      | Unit |
|-----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------|-------|-----|-------|------------------|------|-------------------|------|------|
|                 |                           |                                                                                                                        | Min   | Typ | Max   | Min              | Max  | Min               | Max  |      |
| 74AHC1G126-Q100 |                           |                                                                                                                        |       |     |       |                  |      |                   |      |      |
| V <sub>IH</sub> | HIGH-level input voltage  | V <sub>CC</sub> = 2.0 V                                                                                                | 1.5   | -   | -     | 1.5              | -    | 1.5               | -    | V    |
|                 |                           | V <sub>CC</sub> = 3.0 V                                                                                                | 2.1   | -   | -     | 2.1              | -    | 2.1               | -    | V    |
|                 |                           | V <sub>CC</sub> = 5.5 V                                                                                                | 3.85  | -   | -     | 3.85             | -    | 3.85              | -    | V    |
| V <sub>IL</sub> | LOW-level input voltage   | V <sub>CC</sub> = 2.0 V                                                                                                | -     | -   | 0.5   | -                | 0.5  | -                 | 0.5  | V    |
|                 |                           | V <sub>CC</sub> = 3.0 V                                                                                                | -     | -   | 0.9   | -                | 0.9  | -                 | 0.9  | V    |
|                 |                           | V <sub>CC</sub> = 5.5 V                                                                                                | -     | -   | 1.65  | -                | 1.65 | -                 | 1.65 | V    |
| V <sub>OH</sub> | HIGH-level output voltage | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                                                    |       |     |       |                  |      |                   |      |      |
|                 |                           | I <sub>O</sub> = −50 μA; V <sub>CC</sub> = 2.0 V                                                                       | 1.9   | 2.0 | -     | 1.9              | -    | 1.9               | -    | V    |
|                 |                           | I <sub>O</sub> = −50 μA; V <sub>CC</sub> = 3.0 V                                                                       | 2.9   | 3.0 | -     | 2.9              | -    | 2.9               | -    | V    |
|                 |                           | I <sub>O</sub> = −50 μA; V <sub>CC</sub> = 4.5 V                                                                       | 4.4   | 4.5 | -     | 4.4              | -    | 4.4               | -    | V    |
|                 |                           | I <sub>O</sub> = −4.0 mA; V <sub>CC</sub> = 3.0 V                                                                      | 2.58  | -   | -     | 2.48             | -    | 2.40              | -    | V    |
| V <sub>OL</sub> | LOW-level output voltage  | I <sub>O</sub> = −8.0 mA; V <sub>CC</sub> = 4.5 V                                                                      | 3.94  | -   | -     | 3.8              | -    | 3.70              | -    | V    |
|                 |                           | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                                                    |       |     |       |                  |      |                   |      |      |
|                 |                           | I <sub>O</sub> = 50 μA; V <sub>CC</sub> = 2.0 V                                                                        | -     | 0   | 0.1   | -                | 0.1  | -                 | 0.1  | V    |
|                 |                           | I <sub>O</sub> = 50 μA; V <sub>CC</sub> = 3.0 V                                                                        | -     | 0   | 0.1   | -                | 0.1  | -                 | 0.1  | V    |
|                 |                           | I <sub>O</sub> = 50 μA; V <sub>CC</sub> = 4.5 V                                                                        | -     | 0   | 0.1   | -                | 0.1  | -                 | 0.1  | V    |
| I <sub>OZ</sub> | OFF-state output current  | I <sub>O</sub> = 4.0 mA; V <sub>CC</sub> = 3.0 V                                                                       | -     | -   | 0.36  | -                | 0.44 | -                 | 0.55 | V    |
|                 |                           | I <sub>O</sub> = 8.0 mA; V <sub>CC</sub> = 4.5 V                                                                       | -     | -   | 0.36  | -                | 0.44 | -                 | 0.55 | V    |
|                 |                           | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>O</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 5.5 V | -     | -   | ±0.25 | -                | ±2.5 | -                 | ±10  | μA   |
| I <sub>I</sub>  | input leakage current     | V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 0 V to 5.5 V                                                          | -     | -   | 0.1   | -                | 1.0  | -                 | 2.0  | 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                                 | -     | -   | 2.0   | -                | 20   | -                 | 40   | μA   |

**Table 7.** Static characteristics ...continued  
 Voltages are referenced to GND (ground = 0 V).

| Symbol                  | Parameter                 | Conditions                                                                                                                                              | 25 °C |     |       | –40 °C to +85 °C |      | –40 °C to +125 °C |      | Unit |
|-------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|-------|------------------|------|-------------------|------|------|
|                         |                           |                                                                                                                                                         | Min   | Typ | Max   | Min              | Max  | Min               | Max  |      |
| C <sub>I</sub>          | input capacitance         |                                                                                                                                                         | -     | 3   | 10    | -                | 10   | -                 | 10   | pF   |
| <b>74AHCT1G126-Q100</b> |                           |                                                                                                                                                         |       |     |       |                  |      |                   |      |      |
| V <sub>IH</sub>         | HIGH-level input voltage  | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                                                                        | 2.0   | -   | -     | 2.0              | -    | 2.0               | -    | V    |
| V <sub>IL</sub>         | LOW-level input voltage   | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                                                                        | -     | -   | 0.8   | -                | 0.8  | -                 | 0.8  | V    |
| V <sub>OH</sub>         | HIGH-level output voltage | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>CC</sub> = 4.5 V                                                                           |       |     |       |                  |      |                   |      |      |
|                         |                           | I <sub>O</sub> = –50 µA                                                                                                                                 | 4.4   | 4.5 | -     | 4.4              | -    | 4.4               | -    | V    |
|                         |                           | I <sub>O</sub> = –8.0 mA                                                                                                                                | 3.94  | -   | -     | 3.8              | -    | 3.70              | -    | V    |
| V <sub>OL</sub>         | LOW-level output voltage  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>CC</sub> = 4.5 V                                                                           |       |     |       |                  |      |                   |      |      |
|                         |                           | I <sub>O</sub> = 50 µA                                                                                                                                  | -     | 0   | 0.1   | -                | 0.1  | -                 | 0.1  | V    |
|                         |                           | I <sub>O</sub> = 8.0 mA                                                                                                                                 | -     | -   | 0.36  | -                | 0.44 | -                 | 0.55 | V    |
| I <sub>OZ</sub>         | OFF-state output current  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>O</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 5.5 V                                  | -     | -   | ±0.25 | -                | ±2.5 | -                 | ±10  | µA   |
| I <sub>I</sub>          | input leakage current     | V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 0 V to 5.5 V                                                                                           | -     | -   | 0.1   | -                | 1.0  | -                 | 2.0  | 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                                                                  | -     | -   | 2.0   | -                | 20   | -                 | 40   | µA   |
| ΔI <sub>CC</sub>        | additional supply current | per input pin; V <sub>I</sub> = V <sub>CC</sub> – 2.1 V; other inputs at V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 4.5 V to 5.5 V | -     | -   | 1.35  | -                | 1.5  | -                 | 1.5  | mA   |
| C <sub>I</sub>          | input capacitance         |                                                                                                                                                         | -     | 3   | 10    | -                | 10   | -                 | 10   | pF   |

## 11. Dynamic characteristics

**Table 8.** Dynamic characteristics  
 GND = 0 V; For test circuit see [Figure 7](#).

| Symbol          | Parameter         | Conditions                           | 25 °C               |     |      | –40 °C to +85 °C |      | –40 °C to +125 °C |      | Unit |
|-----------------|-------------------|--------------------------------------|---------------------|-----|------|------------------|------|-------------------|------|------|
|                 |                   |                                      | Min                 | Typ | Max  | Min              | Max  | Min               | Max  |      |
| 74AHC1G126-Q100 |                   |                                      |                     |     |      |                  |      |                   |      |      |
| t <sub>pd</sub> | propagation delay | A to Y; see <a href="#">Figure 5</a> | <a href="#">[1]</a> |     |      |                  |      |                   |      |      |
|                 |                   | V <sub>CC</sub> = 3.0 V to 3.6 V     | <a href="#">[2]</a> |     |      |                  |      |                   |      |      |
|                 |                   | C <sub>L</sub> = 15 pF               | -                   | 4.4 | 8.0  | 1.0              | 9.5  | 1.0               | 10.0 | ns   |
|                 |                   | C <sub>L</sub> = 50 pF               | -                   | 6.3 | 11.5 | 1.0              | 13.0 | 1.0               | 14.5 | ns   |
|                 |                   | V <sub>CC</sub> = 4.5 V to 5.5 V     | <a href="#">[3]</a> |     |      |                  |      |                   |      |      |
|                 |                   | C <sub>L</sub> = 15 pF               | -                   | 3.4 | 5.5  | 1.0              | 6.5  | 1.0               | 7.0  | ns   |
|                 |                   | C <sub>L</sub> = 50 pF               | -                   | 4.7 | 7.5  | 1.0              | 8.5  | 1.0               | 9.5  | ns   |

**Table 8.** Dynamic characteristics ...continuedGND = 0 V; For test circuit see [Figure 7](#).

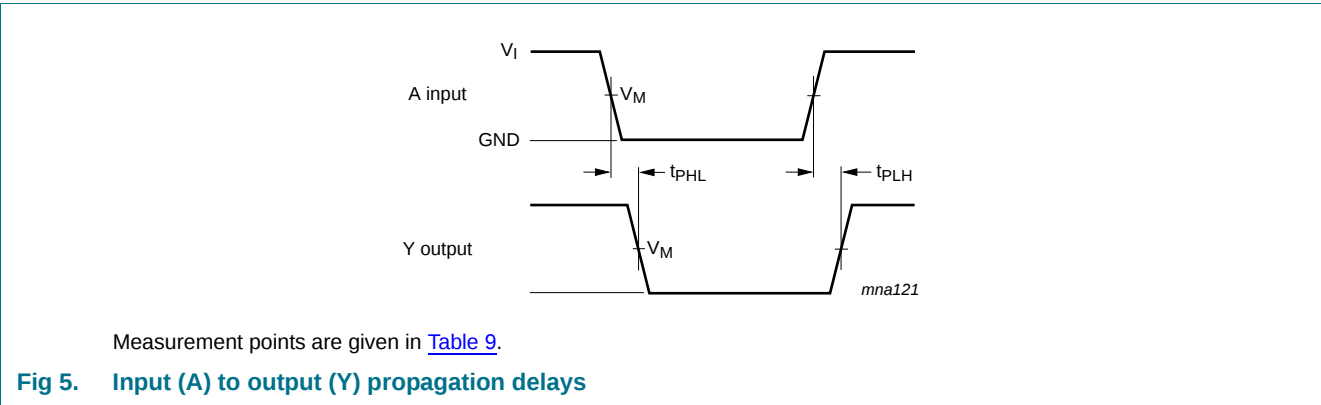
| Symbol                  | Parameter                     | Conditions                                                                                                       | 25 °C |     |      | –40 °C to +85 °C |      | –40 °C to +125 °C |      | Unit |
|-------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------|-------|-----|------|------------------|------|-------------------|------|------|
|                         |                               |                                                                                                                  | Min   | Typ | Max  | Min              | Max  | Min               | Max  |      |
| t <sub>en</sub>         | enable time                   | OE to Y; see <a href="#">Figure 6</a> <a href="#">[1]</a>                                                        |       |     |      |                  |      |                   |      |      |
|                         |                               | V <sub>CC</sub> = 3.0 V to 3.6 V <a href="#">[2]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           | -     | 4.9 | 8.0  | 1.0              | 9.5  | 1.0               | 10.0 | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           | -     | 7.0 | 11.5 | 1.0              | 13.0 | 1.0               | 14.5 | ns   |
|                         |                               | V <sub>CC</sub> = 4.5 V to 5.5 V <a href="#">[3]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           | -     | 3.6 | 5.6  | 1.0              | 6.3  | 1.0               | 7.0  | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           | -     | 5.4 | 8.0  | 1.0              | 9.0  | 1.0               | 9.5  | ns   |
| t <sub>dis</sub>        | disable time                  | OE to Y; see <a href="#">Figure 6</a> <a href="#">[1]</a>                                                        |       |     |      |                  |      |                   |      |      |
|                         |                               | V <sub>CC</sub> = 3.0 V to 3.6 V <a href="#">[2]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           | -     | 6.3 | 9.7  | 1.0              | 11.5 | 1.0               | 12.5 | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           | -     | 9.0 | 13.2 | 1.0              | 15.0 | 1.0               | 16.5 | ns   |
|                         |                               | V <sub>CC</sub> = 4.5 V to 5.5 V <a href="#">[3]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           | -     | 4.3 | 6.8  | 1.0              | 8.0  | 1.0               | 8.5  | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           | -     | 6.1 | 8.8  | 1.0              | 10.0 | 1.0               | 11.0 | ns   |
| C <sub>PD</sub>         | power dissipation capacitance | per buffer;<br>C <sub>L</sub> = 50 pF; f = 1 MHz;<br>V <sub>I</sub> = GND to V <sub>CC</sub> <a href="#">[4]</a> | -     | 9   | -    | -                | -    | -                 | -    | pF   |
| <b>74AHCT1G126-Q100</b> |                               |                                                                                                                  |       |     |      |                  |      |                   |      |      |
| t <sub>pd</sub>         | propagation delay             | A to Y; see <a href="#">Figure 5</a> <a href="#">[1]</a>                                                         |       |     |      |                  |      |                   |      |      |
|                         |                               | V <sub>CC</sub> = 4.5 V to 5.5 V <a href="#">[3]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           | -     | 3.4 | 5.5  | 1.0              | 6.5  | 1.0               | 7.0  | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           | -     | 4.7 | 7.5  | 1.0              | 8.5  | 1.0               | 9.5  | ns   |
| t <sub>en</sub>         | enable time                   | $\overline{\text{OE}}$ to Y; see <a href="#">Figure 6</a> <a href="#">[1]</a>                                    |       |     |      |                  |      |                   |      |      |
|                         |                               | V <sub>CC</sub> = 4.5 V to 5.5 V <a href="#">[3]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           | -     | 3.4 | 5.6  | 1.0              | 6.3  | 1.0               | 6.5  | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           | -     | 4.8 | 8.0  | 1.0              | 9.0  | 1.0               | 9.0  | ns   |
| t <sub>dis</sub>        | disable time                  | $\overline{\text{OE}}$ to Y; see <a href="#">Figure 6</a> <a href="#">[1]</a>                                    |       |     |      |                  |      |                   |      |      |
|                         |                               | V <sub>CC</sub> = 4.5 V to 5.5 V <a href="#">[3]</a>                                                             |       |     |      |                  |      |                   |      |      |
|                         |                               | C <sub>L</sub> = 15 pF                                                                                           |       | 4.0 | 6.8  | 1.0              | 8.0  | 1.0               | 8.5  | ns   |
|                         |                               | C <sub>L</sub> = 50 pF                                                                                           |       | 5.7 | 8.8  | 1.0              | 10.0 | 1.0               | 11.5 | ns   |

Table 8. Dynamic characteristics ...continued  
GND = 0 V; For test circuit see Figure 7.

| Symbol          | Parameter                     | Conditions                                                                                   | 25 °C |     |     | −40 °C to +85 °C |     | −40 °C to +125 °C |     | Unit |
|-----------------|-------------------------------|----------------------------------------------------------------------------------------------|-------|-----|-----|------------------|-----|-------------------|-----|------|
|                 |                               |                                                                                              | Min   | Typ | Max | Min              | Max | Min               | Max |      |
| C <sub>PD</sub> | power dissipation capacitance | per buffer;<br>C <sub>L</sub> = 50 pF; f = 1 MHz;<br>V <sub>I</sub> = GND to V <sub>CC</sub> | [4] - | 11  | -   | -                | -   | -                 | -   | pF   |

- [1] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.  
t<sub>en</sub> is the same as t<sub>pZL</sub> and t<sub>pZH</sub>.  
t<sub>dis</sub> is the same as t<sub>pLZ</sub> and t<sub>pHZ</sub>.
- [2] Typical values are measured at V<sub>CC</sub> = 3.3 V.
- [3] Typical values are measured at V<sub>CC</sub> = 5.0 V.
- [4] C<sub>PD</sub> is used to determine the dynamic power dissipation P<sub>D</sub> (μW).  
 $P_D = C_{PD} \times V_{CC}^2 \times f_i + \sum(C_L \times V_{CC}^2 \times f_o)$  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 Volts.

12. Waveforms



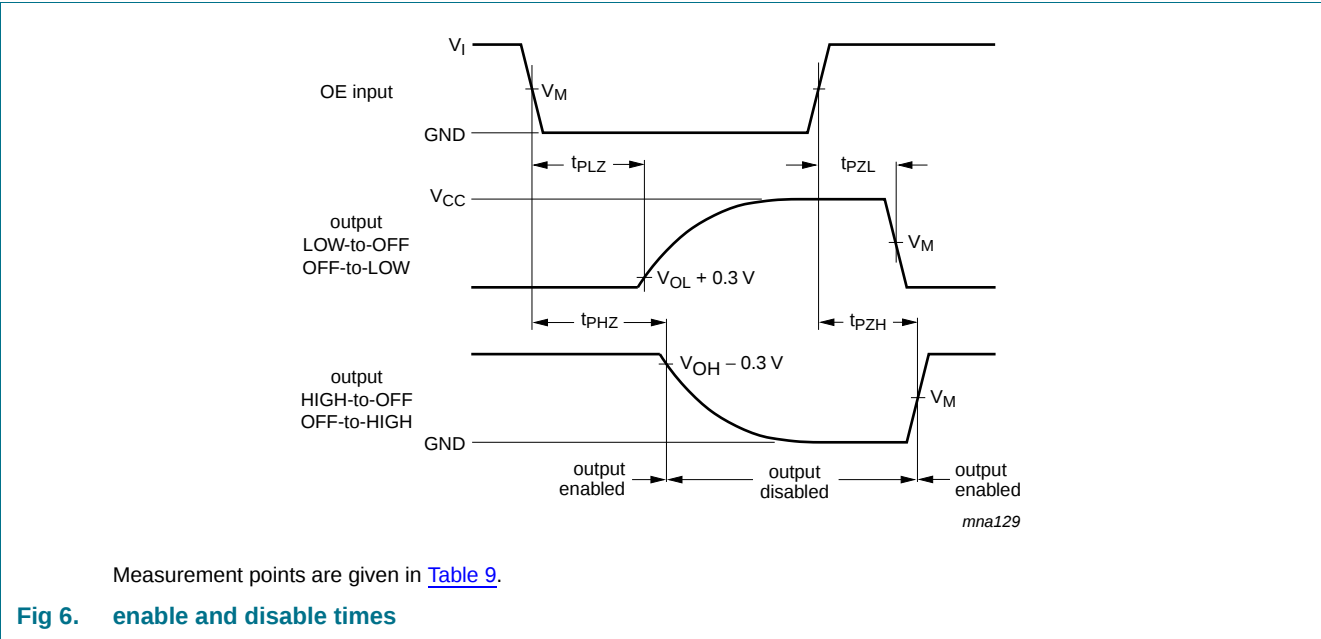


Table 9. Measurement points

| Type             | Input                 |                        | Output                |
|------------------|-----------------------|------------------------|-----------------------|
|                  | V <sub>M</sub>        | V <sub>I</sub>         | V <sub>M</sub>        |
| 74AHC1G126-Q100  | 0.5 × V <sub>CC</sub> | GND to V <sub>CC</sub> | 0.5 × V <sub>CC</sub> |
| 74AHCT1G126-Q100 | 1.5 V                 | GND to 3.0 V           | 0.5 × V <sub>CC</sub> |

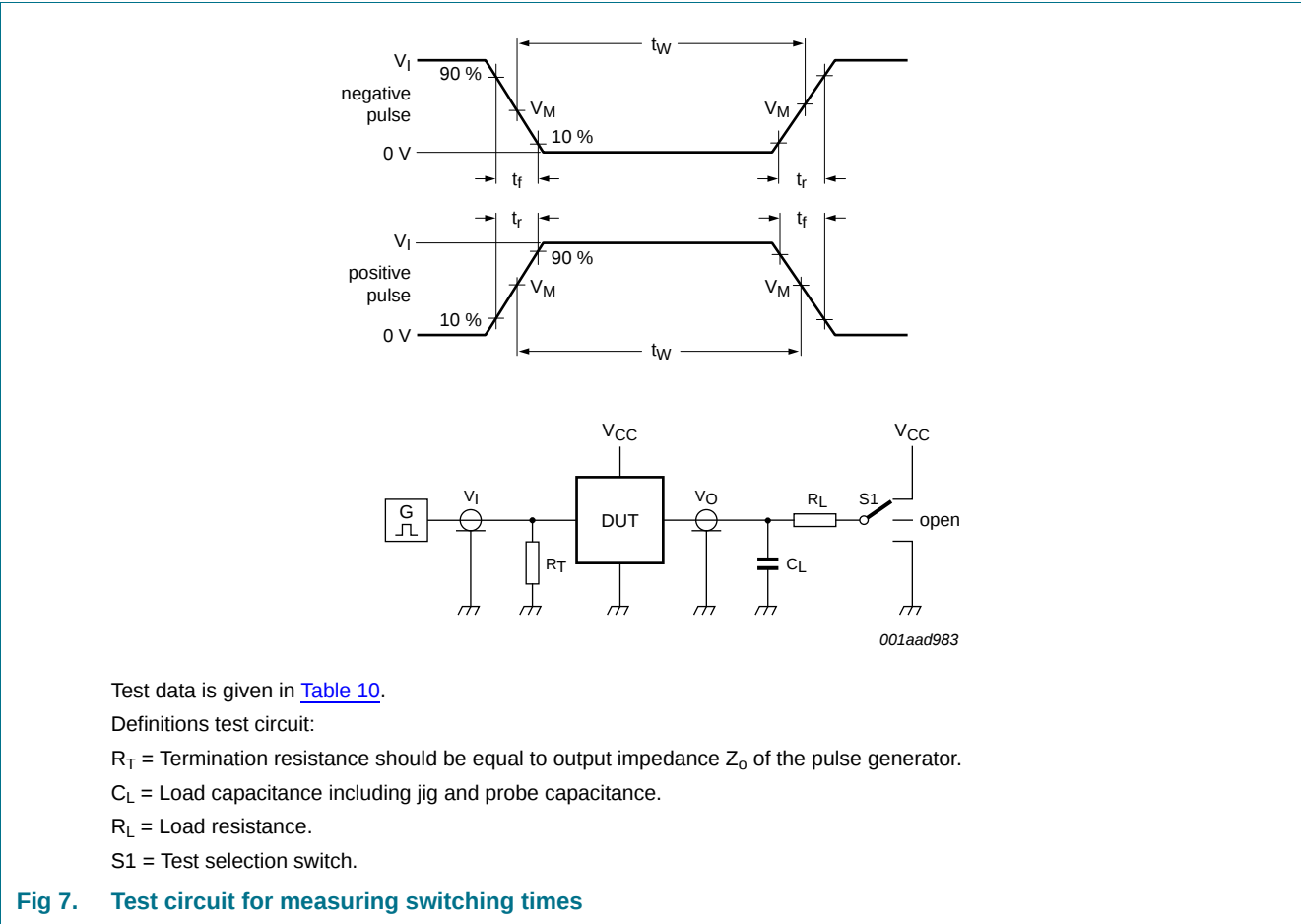


Table 10. Test data

| Type             | Input    |                    | Load         |              | S1 position        |                    |                    |
|------------------|----------|--------------------|--------------|--------------|--------------------|--------------------|--------------------|
|                  | $V_I$    | $t_r, t_f$         | $C_L$        | $R_L$        | $t_{PHL}, t_{PLH}$ | $t_{PZH}, t_{PHZ}$ | $t_{PZL}, t_{PLZ}$ |
| 74AHC1G126-Q100  | $V_{CC}$ | $\leq 3\text{ ns}$ | 15 pF, 50 pF | 1 k $\Omega$ | open               | GND                | $V_{CC}$           |
| 74AHCT1G126-Q100 | 3 V      | $\leq 3\text{ ns}$ | 15 pF, 50 pF | 1 k $\Omega$ | open               | GND                | $V_{CC}$           |

13. Package outline

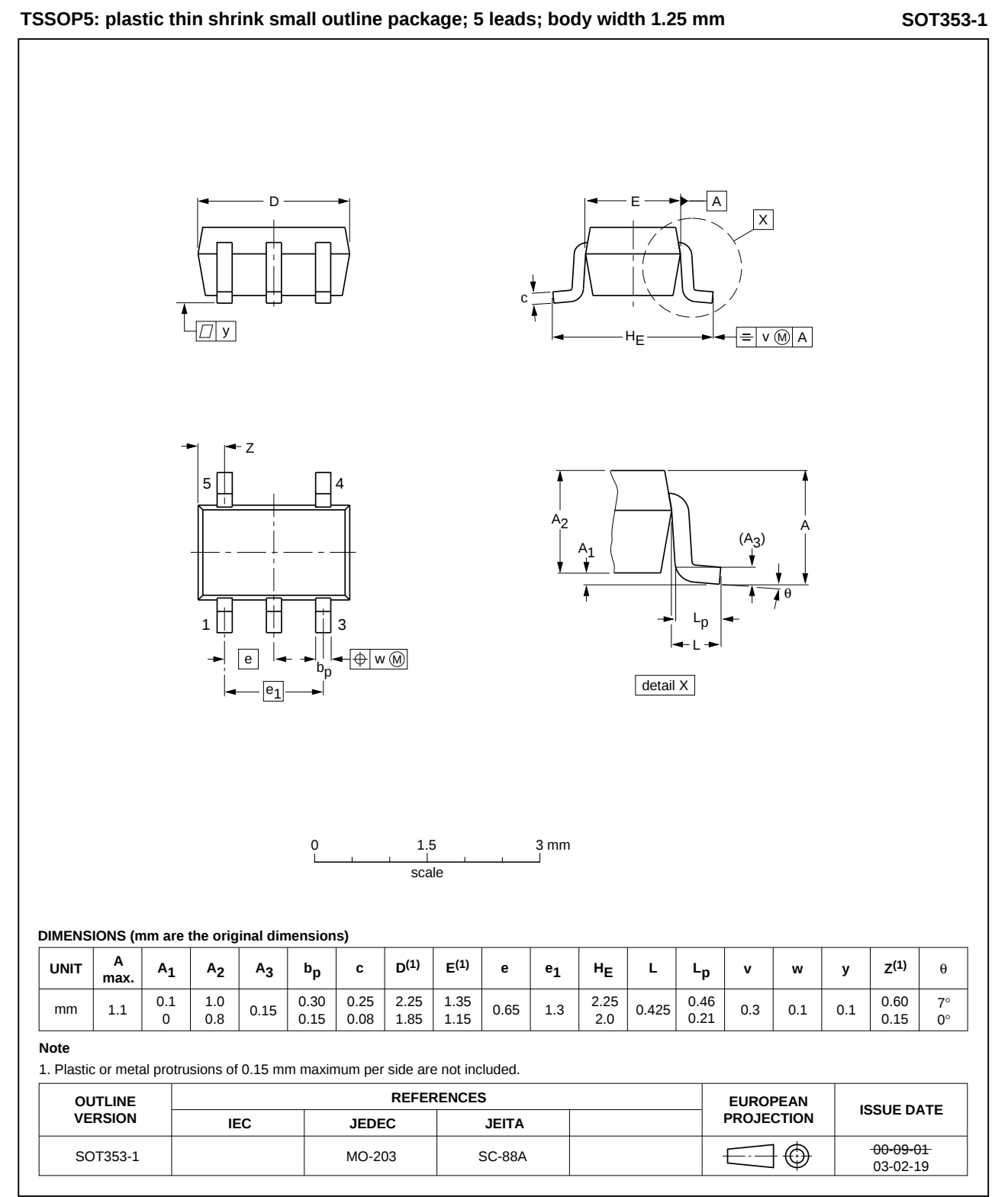


Fig 8. Package outline SOT353-1 (TSSOP5)

Plastic surface-mounted package; 5 leads

SOT753

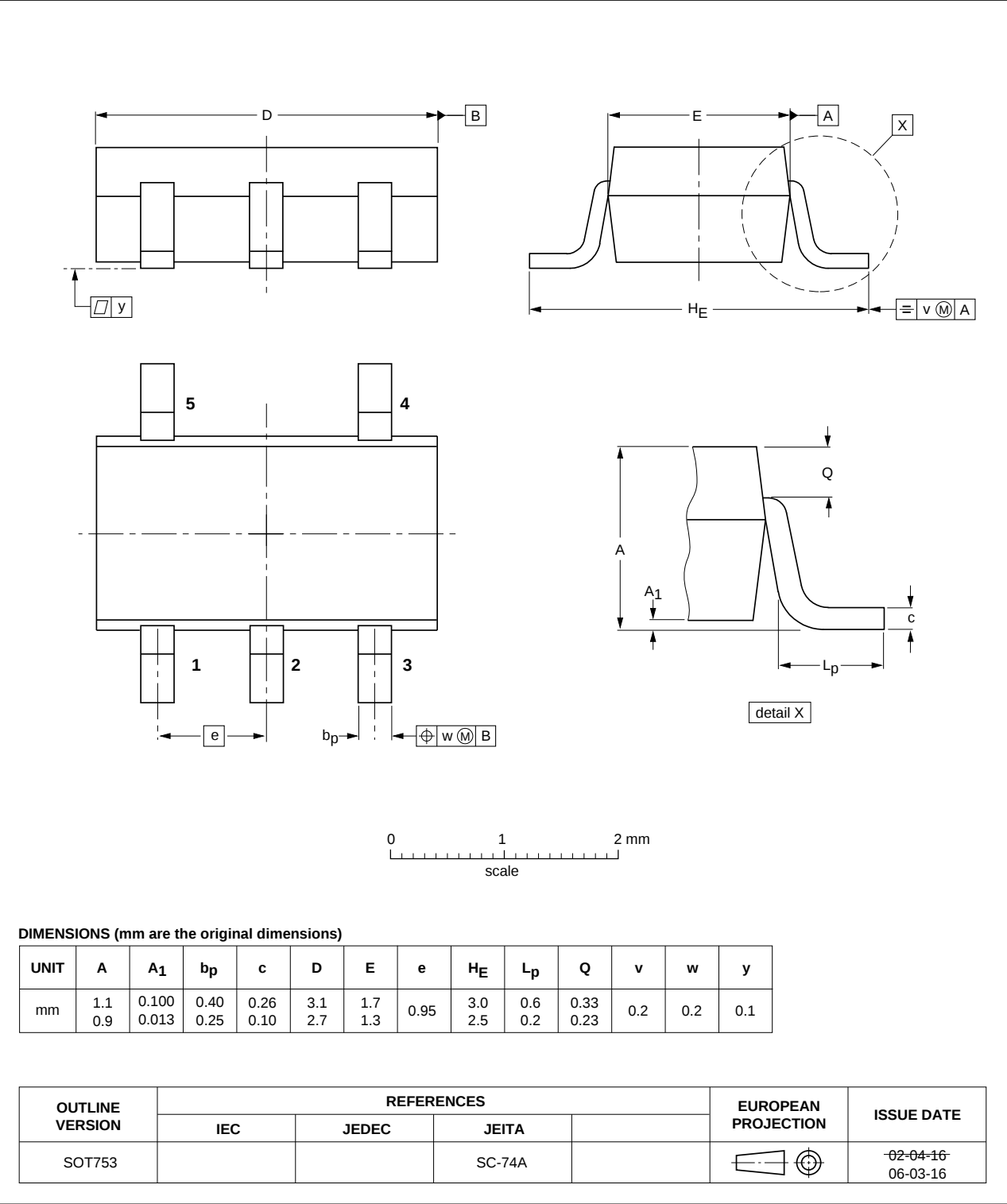


Fig 9. Package outline SOT753 (SC-74A)

## 14. Abbreviations

Table 11. Abbreviations

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

## 15. Revision history

Table 12. Revision history

| Document ID                | Release date | Data sheet status  | Change notice | Supersedes |
|----------------------------|--------------|--------------------|---------------|------------|
| 74AHC1G_AHCT1G126_Q100 v.1 | 20130326     | Product data sheet | -             | -          |

## 16. Legal information

### 16.1 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".

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