



# 74AHC1G126; 74AHCT1G126

Bus buffer/line driver; 3-state

Rev. 13 — 28 August 2024

Product data sheet

## 1. General description

The 74AHC1G126; 74AHCT1G126 is a single buffer/line driver with 3-state output. Inputs are overvoltage tolerant. This feature allows the use of these devices as translators in mixed voltage environments.

## 2. Features and benefits

- Symmetrical output impedance
- Balanced propagation delays
- Wide supply voltage range from 2.0 V to 5.5 V
- Overvoltage tolerant inputs to 5.5 V
- High noise immunity
- CMOS low power dissipation
- Latch-up performance exceeds 100 mA per JESD 78 Class II Level A
- Input levels:
  - For 74AHC1G126: CMOS level
  - For 74AHCT1G126: TTL level
- ESD protection:
  - HBM: ANSI/ESDA/JEDEC JS-001 class 2 exceeds 2000 V
  - CDM: ANSI/ESDA/JEDEC JS-002 class C3 exceeds 1000 V
- Multiple package options
- Specified from -40 °C to +125 °C

## 3. Ordering information

Table 1. Ordering information

| Type number                                                   | Package           |        |                                                                                                                                                |                           |
|---------------------------------------------------------------|-------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                                               | Temperature range | Name   | Description                                                                                                                                    | Version                   |
| <a href="#">74AHC1G126GW</a><br><a href="#">74AHCT1G126GW</a> | -40 °C to +125 °C | TSSOP5 | plastic thin shrink small outline package; 5 leads; body width 1.25 mm                                                                         | <a href="#">SOT353-1</a>  |
| <a href="#">74AHC1G126GV</a><br><a href="#">74AHCT1G126GV</a> | -40 °C to +125 °C | SC-74A | plastic surface-mounted package; 5 leads                                                                                                       | <a href="#">SOT753</a>    |
| <a href="#">74AHC1G126GM</a><br><a href="#">74AHCT1G126GM</a> | -40 °C to +125 °C | XSON6  | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm                                                    | <a href="#">SOT886</a>    |
| <a href="#">74AHC1G126GZ</a><br><a href="#">74AHCT1G126GZ</a> | -40 °C to +125 °C | XSON5  | plastic thermal enhanced extremely thin small outline package with side-wettable flanks (SWF); no leads; 5 terminals; body 1.1 × 0.85 × 0.5 mm | <a href="#">SOT8065-1</a> |

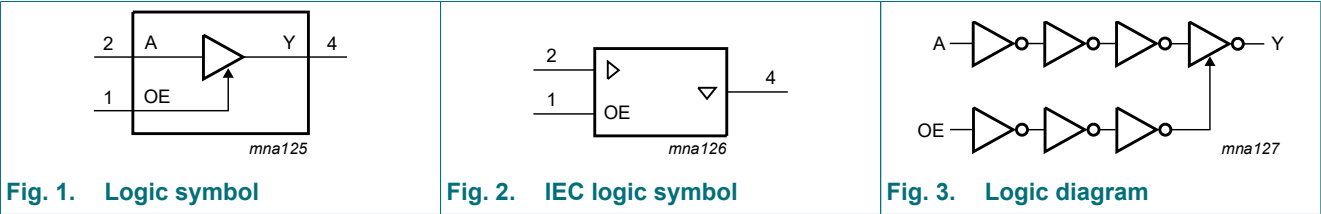
4. Marking

Table 2. Marking codes

| Type number   | Marking [1] |
|---------------|-------------|
| 74AHC1G126GW  | AN          |
| 74AHCT1G126GW | CN          |
| 74AHC1G126GV  | A26         |
| 74AHCT1G126GV | C26         |
| 74AHC1G126GM  | AN          |
| 74AHCT1G126GM | CN          |
| 74AHC1G126GZ  | AN          |
| 74AHCT1G126GZ | CN          |

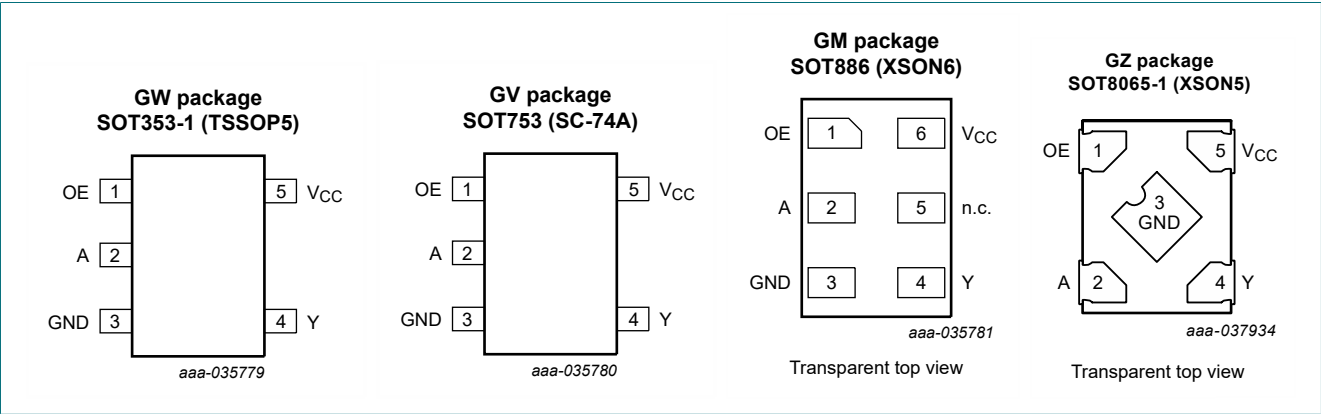
[1] The pin 1 indicator is located on the lower left corner of the device, below the marking code.

5. Functional diagram



6. Pinning information

6.1. Pinning



6.2. Pin description

Table 3. Pin description

| Symbol          | Pin                            |        | Description         |
|-----------------|--------------------------------|--------|---------------------|
|                 | SOT353-1, SOT753 and SOT8065-1 | SOT886 |                     |
| OE              | 1                              | 1      | output enable input |
| A               | 2                              | 2      | data input A        |
| GND             | 3                              | 3      | ground (0 V)        |
| Y               | 4                              | 4      | data output Y       |
| n.c.            | -                              | 5      | not connected       |
| V <sub>CC</sub> | 5                              | 6      | 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 [1]                                             | -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 [1] | -    | ±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 [2]                                | -    | 250  | mW   |

[1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
[2] For SOT353-1 (TSSOP5) package: P<sub>tot</sub> derates linearly with 3.3 mW/K above 74 °C.  
For SOT753 (SC-74A) package: P<sub>tot</sub> derates linearly with 3.8 mW/K above 85 °C.  
For SOT886 (XSON6) package: P<sub>tot</sub> derates linearly with 3.3 mW/K above 74 °C.  
For SOT8065-1 (XSON5) package: P<sub>tot</sub> derates linearly with 3.2 mW/K above 72 °C.

9. Recommended operating conditions

Table 6. Recommended operating conditions

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

| Symbol           | Parameter                           | Conditions                      | 74AHC1G126 |     |                 | 74AHCT1G126 |     |                 | 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   |
| Δt/ΔV            | 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      |                           |                                                                                                                        |       |     |       |                  |      |                   |      |      |
| 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>O</sub> = 4.0 mA; V <sub>CC</sub> = 3.0 V                                                                       | -     | -   | 0.36  | -                | 0.44 | -                 | 0.55 | V    |
| I <sub>OZ</sub> | OFF-state output current  | 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   |

| Symbol           | Parameter                 | Conditions                                                                                                                                              | 25 °C |     |       | -40 °C to +85 °C |      | -40 °C to +125 °C |      | Unit |
|------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|-------|------------------|------|-------------------|------|------|
|                  |                           |                                                                                                                                                         | Min   | Typ | Max   | Min              | Max  | Min               | Max  |      |
| 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   |
| C <sub>I</sub>   | input capacitance         |                                                                                                                                                         | -     | 3   | 10    | -                | 10   | -                 | 10   | pF   |
| 74AHCT1G126      |                           |                                                                                                                                                         |       |     |       |                  |      |                   |      |      |
| 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 Fig. 6.

| Symbol           | Parameter                     | Conditions                                                                                                 | 25 °C |     |      | -40 °C to +85 °C |      | -40 °C to +125 °C |      | Unit |
|------------------|-------------------------------|------------------------------------------------------------------------------------------------------------|-------|-----|------|------------------|------|-------------------|------|------|
|                  |                               |                                                                                                            | Min   | Typ | Max  | Min              | Max  | Min               | Max  |      |
| 74AHC1G126       |                               |                                                                                                            |       |     |      |                  |      |                   |      |      |
| t <sub>pd</sub>  | propagation delay             | A to Y; see <a href="#">Fig. 4</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   |
| t <sub>en</sub>  | enable time                   | OE to Y; see <a href="#">Fig. 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                                                                                     | -     | 4.9 | 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="#">Fig. 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                                                                                     | -     | 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; C <sub>L</sub> = 50 pF; f = 1 MHz; V <sub>I</sub> = GND to V <sub>CC</sub> <a href="#">[4]</a> | -     | 9   | -    | -                | -    | -                 | -    | pF   |

| Symbol           | Parameter                     | Conditions                                                                                 | 25 °C |     |     | -40 °C to +85 °C |      | -40 °C to +125 °C |      | Unit |
|------------------|-------------------------------|--------------------------------------------------------------------------------------------|-------|-----|-----|------------------|------|-------------------|------|------|
|                  |                               |                                                                                            | Min   | Typ | Max | Min              | Max  | Min               | Max  |      |
| 74AHCT1G126      |                               |                                                                                            |       |     |     |                  |      |                   |      |      |
| t <sub>pd</sub>  | propagation delay             | A to Y; see Fig. 4 [1]                                                                     |       |     |     |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V [3]                                                       |       |     |     |                  |      |                   |      |      |
|                  |                               | 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                   | OE to Y; see Fig. 5 [1]                                                                    |       |     |     |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V [3]                                                       |       |     |     |                  |      |                   |      |      |
|                  |                               | 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                  | OE to Y; see Fig. 5 [1]                                                                    |       |     |     |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V [3]                                                       |       |     |     |                  |      |                   |      |      |
|                  |                               | 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   |
| C <sub>PD</sub>  | power dissipation capacitance | per buffer; C <sub>L</sub> = 50 pF; f = 1 MHz; 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 V.

11.1. Waveforms and test circuit

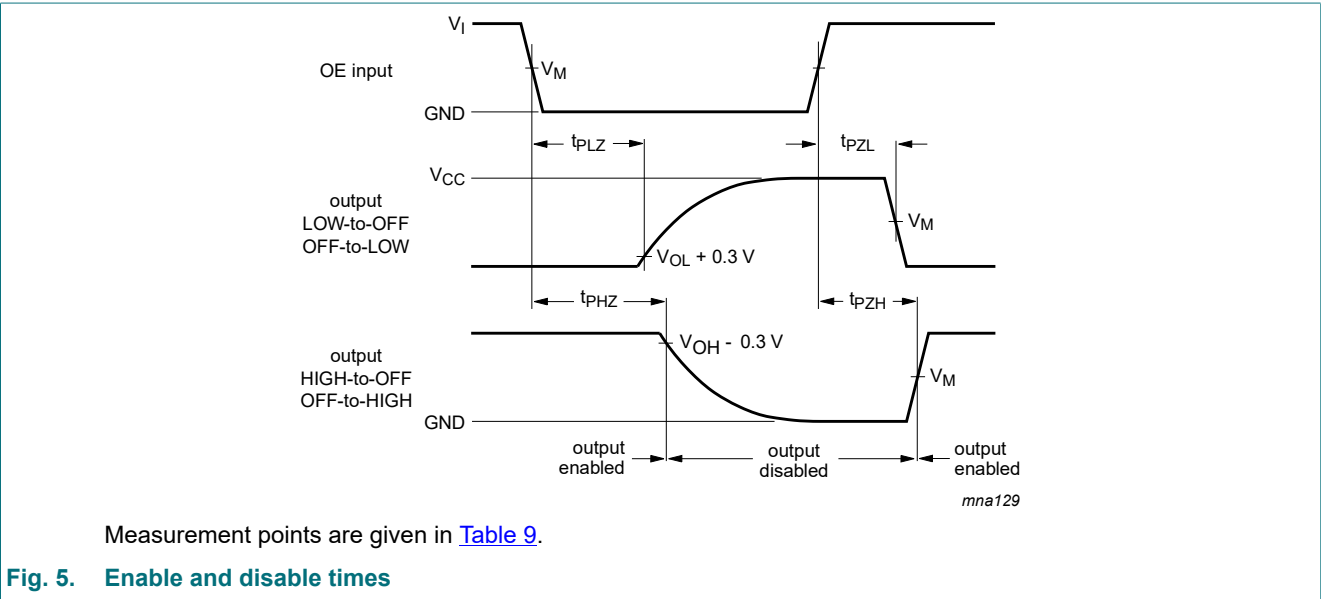
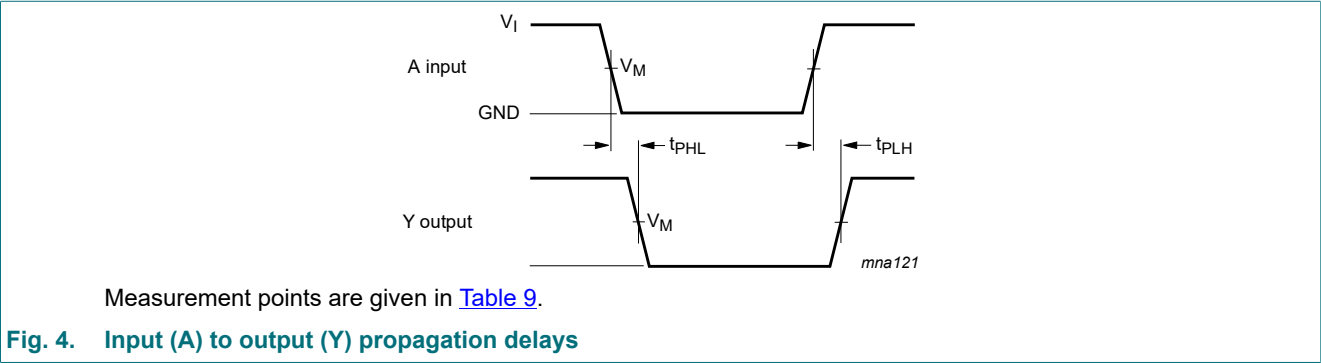


Table 9. Measurement points

| Type        | Input     |              | Output    |
|-------------|-----------|--------------|-----------|
|             | VM        | VI           | VM        |
| 74AHC1G126  | 0.5 × VCC | GND to VCC   | 0.5 × VCC |
| 74AHCT1G126 | 1.5 V     | GND to 3.0 V | 0.5 × VCC |



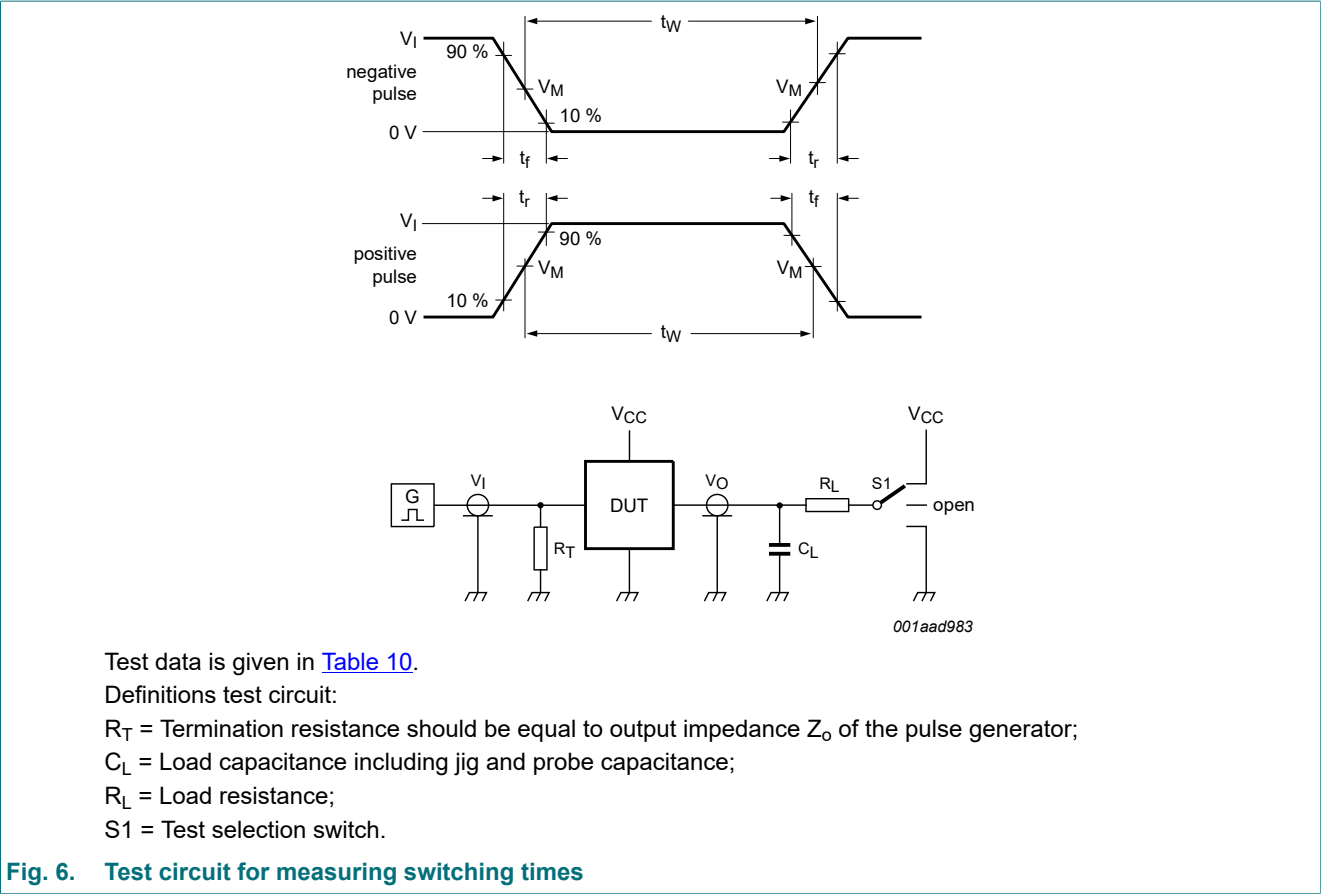


Table 10. Test data

| 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  | $V_{CC}$ | $\leq 3 \text{ ns}$ | 15 pF, 50 pF | 1 k $\Omega$ | open               | GND                | $V_{CC}$           |
| 74AHCT1G126 | 3 V      | $\leq 3 \text{ ns}$ | 15 pF, 50 pF | 1 k $\Omega$ | open               | GND                | $V_{CC}$           |

12. Package outline

TSSOP5: plastic thin shrink small outline package; 5 leads; body width 1.25 mm

SOT353-1

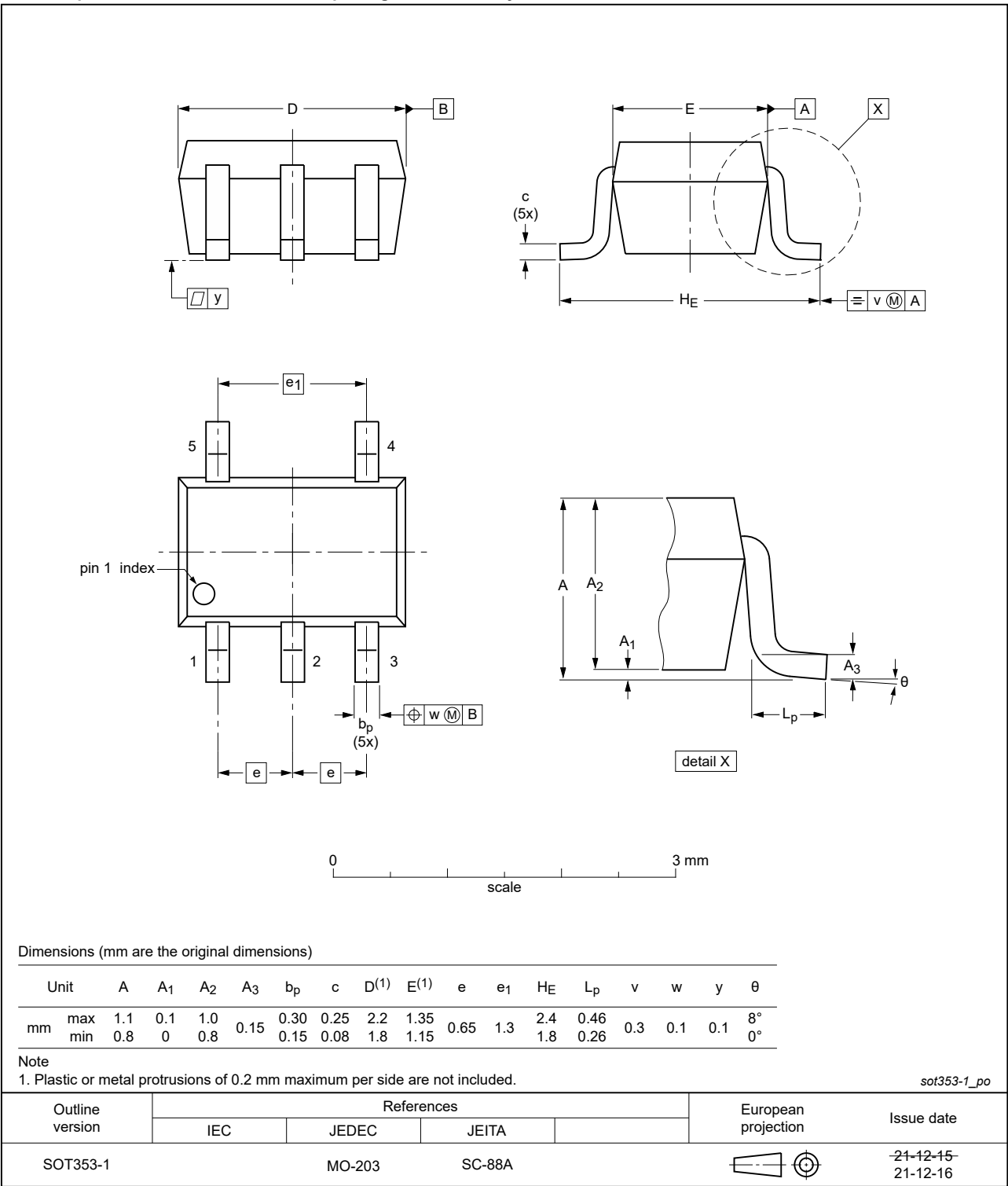


Fig. 7. Package outline SOT353-1 (TSSOP5)

Plastic surface-mounted package; 5 leads

SOT753

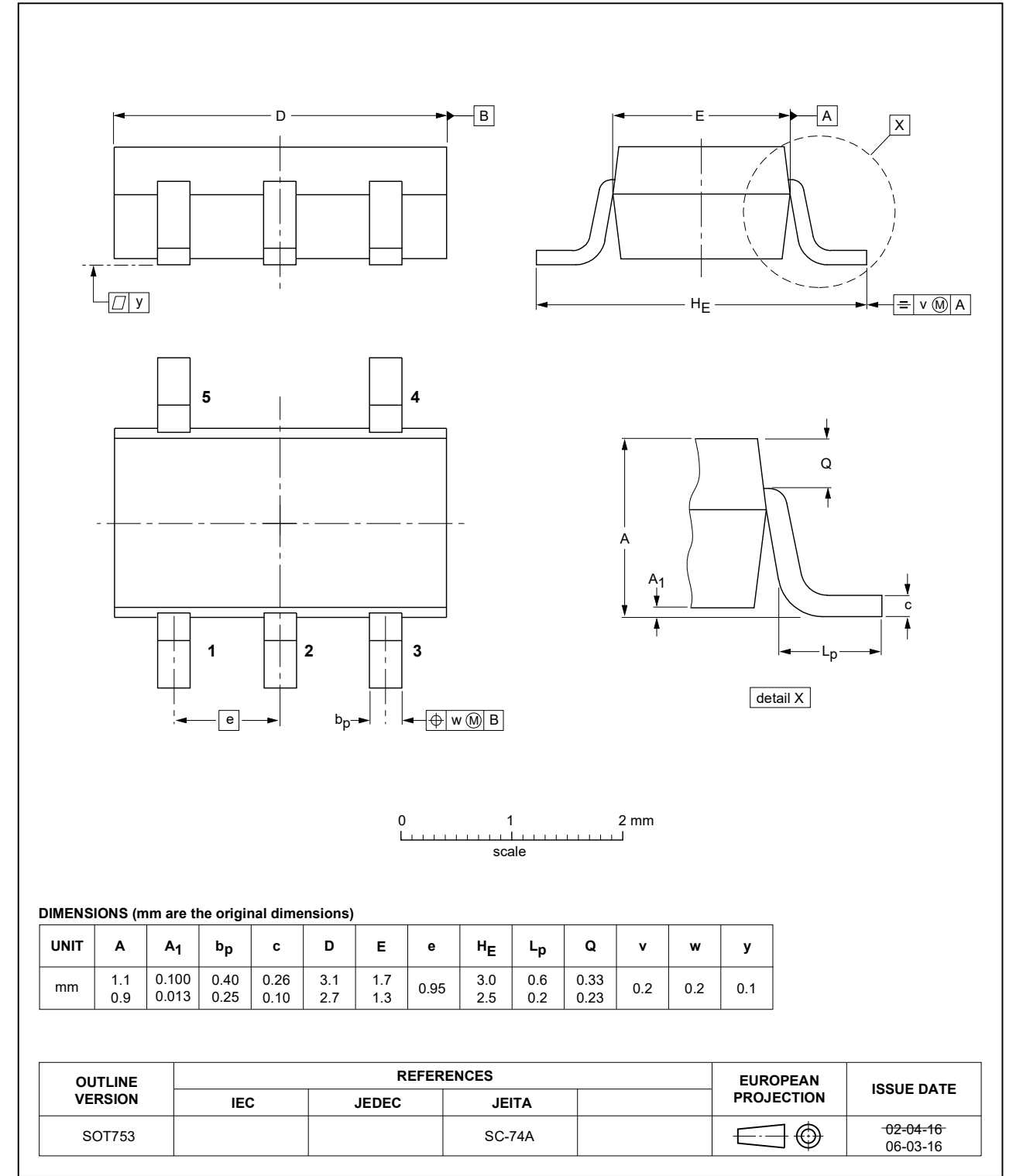


Fig. 8. Package outline SOT753 (SC-74A)

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm

SOT886

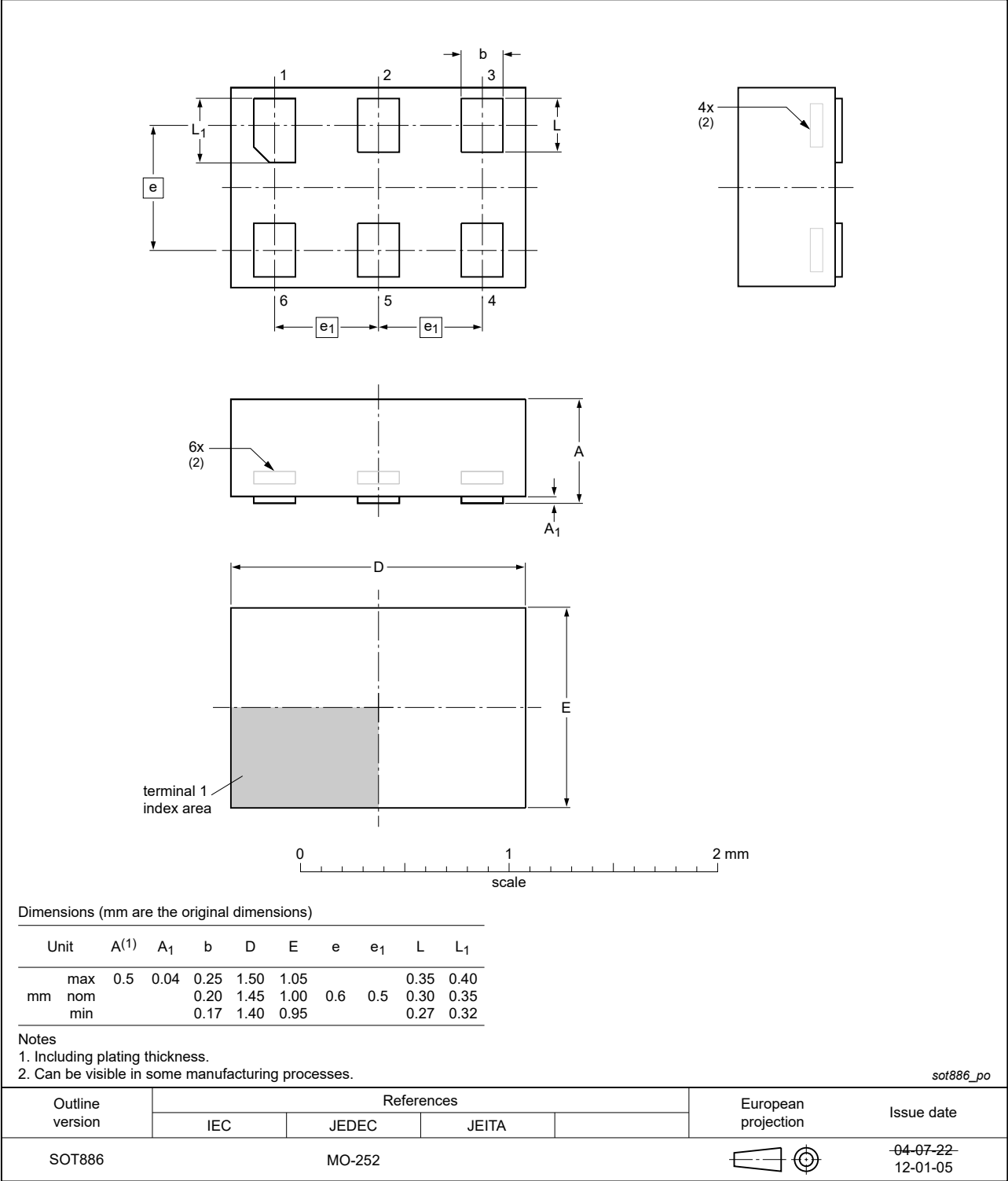


Fig. 9. Package outline SOT886 (XSON6)

**XSON5: Plastic thermal enhanced extremely thin small outline package with side-wettable flanks (SWF); no leads; 5 terminals; body 1.1 × 0.85 × 0.5 mm**

SOT8065-1

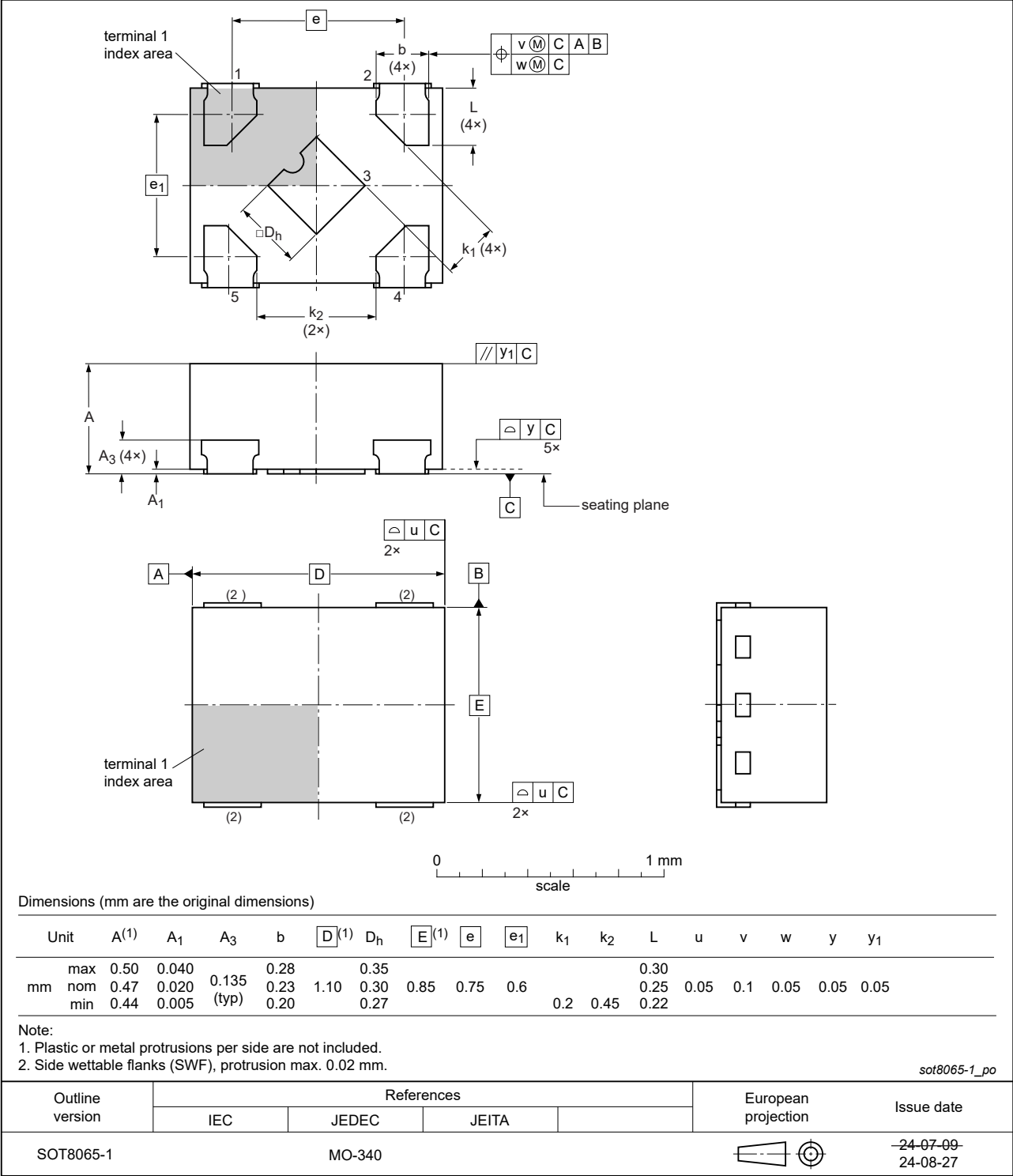


Fig. 10. Package outline SOT8065-1 (XSON5)

13. Abbreviations

Table 11. Abbreviations

| Acronym | Description                               |
|---------|-------------------------------------------|
| ANSI    | American National Standards Institute     |
| CMOS    | Complementary Metal Oxide Semiconductor   |
| CDM     | Charged Device Model                      |
| DUT     | Device Under Test                         |
| ESD     | ElectroStatic Discharge                   |
| ESDA    | ElectroStatic Discharge Association       |
| HBM     | Human Body Model                          |
| JEDEC   | Joint Electron Device Engineering Council |
| TTL     | Transistor-Transistor Logic               |

14. Revision history

Table 12. Revision history

| Document ID           | Release date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data sheet status     | Change notice | Supersedes            |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------|-----------------------|
| 74AHC_AHCT1G126 v.13  | 20240828                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.12  |
| Modifications:        | <ul style="list-style-type: none"><li>Type number 74AHC1G126GZ (SOT8065-1/XSON5) added.</li><li><a href="#">Fig. 10</a>: Added JEDEC reference MO-340 to SOT8065-1 package outline drawing.</li></ul>                                                                                                                                                                                                                                                                                                 |                       |               |                       |
| 74AHC_AHCT1G126 v.12  | 20240715                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.11  |
| Modifications:        | <ul style="list-style-type: none"><li>Type number 74AHCT1G126GZ (SOT8065-1/XSON5) added.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                    |                       |               |                       |
| 74AHC_AHCT1G126 v.11  | 20230912                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.10  |
| Modifications:        | <ul style="list-style-type: none"><li><a href="#">Section 2</a>: ESD specification updated according to the latest JEDEC standard.</li></ul>                                                                                                                                                                                                                                                                                                                                                          |                       |               |                       |
| 74AHC_AHCT1G126 v.10  | 20220111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.9   |
| Modifications:        | <ul style="list-style-type: none"><li><a href="#">Fig. 7</a>: Package outline drawing for SOT353-1 (TSSOP5) has changed.</li></ul>                                                                                                                                                                                                                                                                                                                                                                    |                       |               |                       |
| 74AHC_AHCT1G126 v.9   | 20210518                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.8   |
| Modifications:        | <ul style="list-style-type: none"><li>The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.</li><li>Legal texts have been adapted to the new company name where appropriate.</li><li>Type numbers 74AHC1G126GF and 74AHCT1G126GF (SOT891 / XSON6) removed.</li><li><a href="#">Section 1</a> and <a href="#">Section 2</a> updated.</li><li><a href="#">Section 8</a>: Derating values for P<sub>tot</sub> total power dissipation updated.</li></ul> |                       |               |                       |
| 74AHC_AHCT1G126 v.8   | 20120823                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.7   |
| Modifications:        | <ul style="list-style-type: none"><li>Package outline drawing of SOT886 (<a href="#">Fig. 9</a>) modified.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                  |                       |               |                       |
| 74AHC_AHCT1G126 v.7   | 20090617                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.6   |
| 74AHC_AHCT1G126 v.6   | 20070525                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.5   |
| 74AHC_AHCT1G126 v.5   | 20070514                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product data sheet    | -             | 74AHC_AHCT1G126 v.4   |
| 74AHC_AHCT1G126 v.4   | 20020606                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product specification | -             | 74AHC_AHCT1G126 v.3   |
| 74AHC_AHCT1G126 v.3   | 20020215                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product specification | -             | 74AHC_AHCT1G126 v.2   |
| 74AHC_AHCT1G126 v.2   | 20010406                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product specification | -             | 74AHC1G_AHCT1G126 v.1 |
| 74AHC1G_AHCT1G126 v.1 | 19990920                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Product specification | -             | -                     |

## 15. Legal information

### Data sheet status

| Document status [1][2]         | Product status [3] | 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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Contents

1. General description..... 1

2. Features and benefits..... 1

3. Ordering information..... 1

4. Marking..... 2

5. Functional diagram.....2

6. Pinning information.....2

6.1. Pinning.....2

6.2. Pin description..... 3

7. Functional description..... 3

8. Limiting values..... 3

9. Recommended operating conditions.....4

10. Static characteristics.....4

11. Dynamic characteristics.....6

11.1. Waveforms and test circuit..... 8

12. Package outline..... 10

13. Abbreviations..... 14

14. Revision history..... 14

15. Legal information.....15

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