

# 74AHC126; 74AHCT126

Quad buffer/line driver; 3-state

Rev. 7 — 29 February 2024

Product data sheet

## 1. General description

The 74AHC126; 74AHCT126 is a quad buffer/line driver with 3-state outputs controlled by the output enable inputs (nOE). A LOW on nOE causes the outputs to assume a high-impedance OFF-state. Inputs are overvoltage tolerant. This feature allows the use of these devices as translators in mixed voltage environments.

## 2. Features and benefits

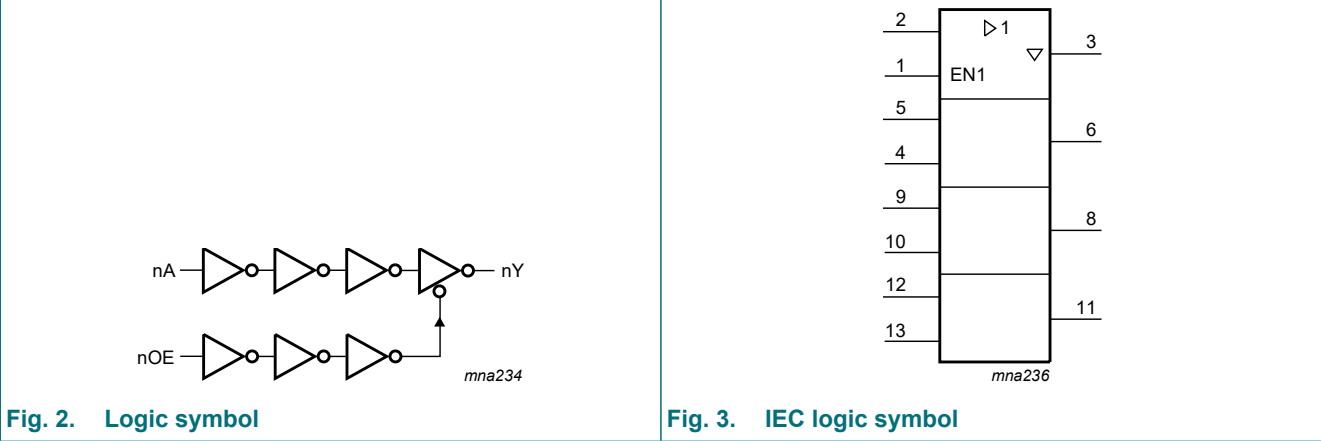
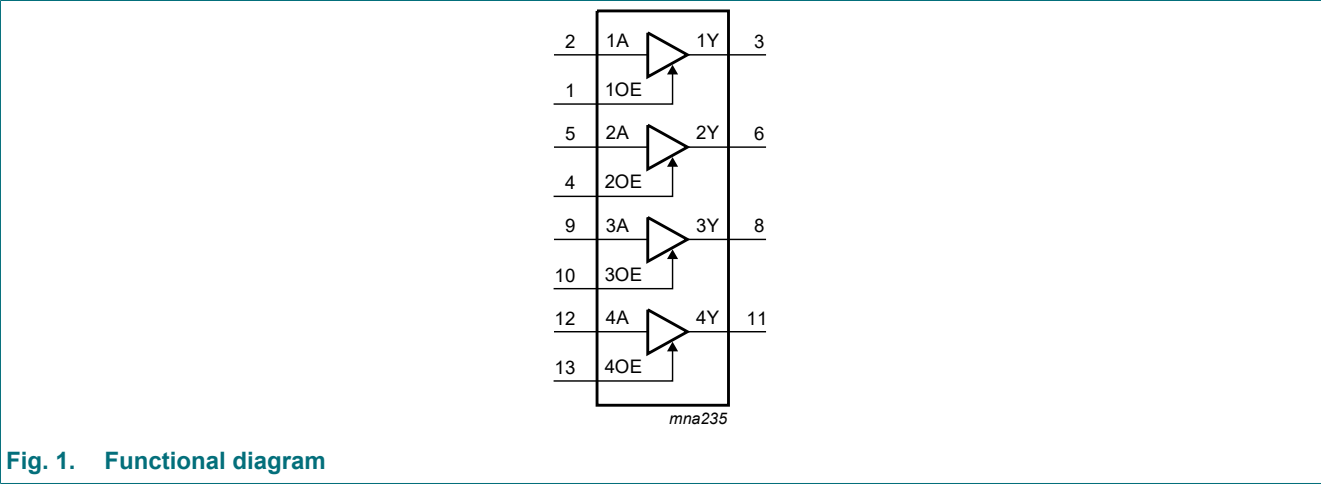
- Balanced propagation delays
- All inputs have Schmitt-trigger action
- Inputs accept voltages higher than  $V_{CC}$
- Input levels:
  - For 74AHC126: CMOS level
  - For 74AHCT126: TTL level
- ESD protection:
  - HBM: ANSI/ESDA/JEDEC JS-001 class 2 exceeds 2000 V
  - CDM: ANSI/ESDA/JEDEC JS-002 class C3 exceeds 1000 V
- Multiple package options
- Specified from -40 °C to +85 °C and from -40 °C to +125 °C

## 3. Ordering information

Table 1. Ordering information

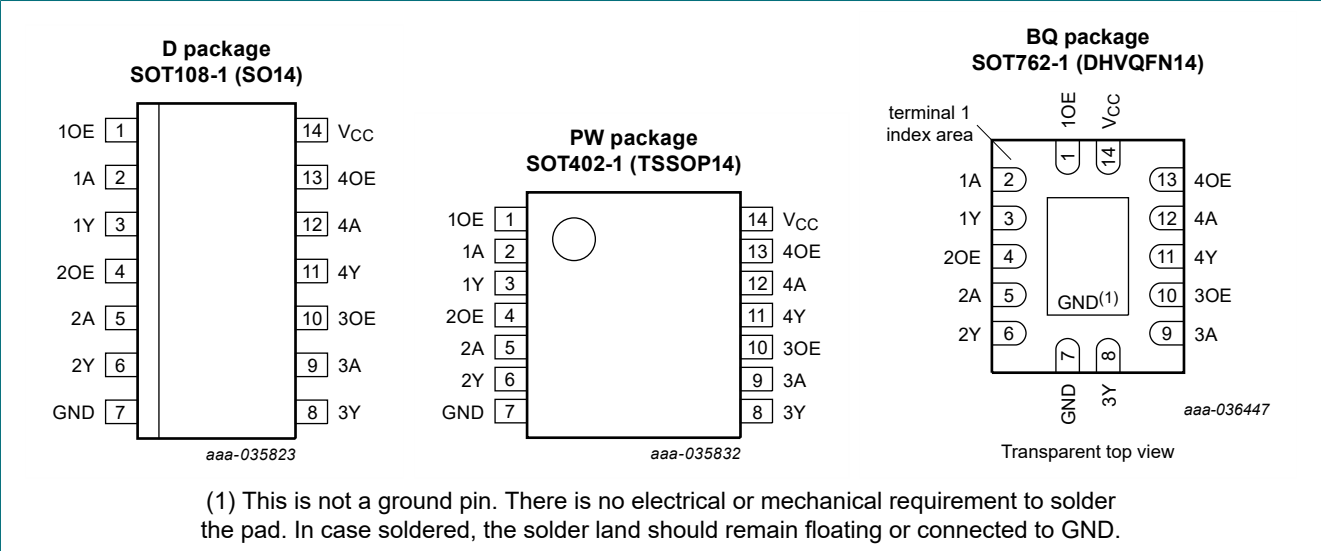
| Type number                                               | Package           |          |                                                                                                                              |                          |
|-----------------------------------------------------------|-------------------|----------|------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                                           | Temperature range | Name     | Description                                                                                                                  | Version                  |
| <a href="#">74AHC126D</a><br><a href="#">74AHCT126D</a>   | -40 °C to +125 °C | SO14     | plastic small outline package; 14 leads; body width 3.9 mm                                                                   | <a href="#">SOT108-1</a> |
| <a href="#">74AHC126PW</a><br><a href="#">74AHCT126PW</a> | -40 °C to +125 °C | TSSOP14  | plastic thin shrink small outline package; 14 leads; body width 4.4 mm                                                       | <a href="#">SOT402-1</a> |
| <a href="#">74AHC126BQ</a><br><a href="#">74AHCT126BQ</a> | -40 °C to +125 °C | DHVQFN14 | plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads; 14 terminals; body 2.5 × 3 × 0.85 mm | <a href="#">SOT762-1</a> |

4. Functional diagram



5. Pinning information

5.1. Pinning



5.2. Pin description

Table 2. Pin description

| Symbol          | Pin | Description                         |
|-----------------|-----|-------------------------------------|
| 1OE             | 1   | output enable input 1 (active HIGH) |
| 1A              | 2   | data input 1                        |
| 1Y              | 3   | data output 1                       |
| 2OE             | 4   | output enable input 2 (active HIGH) |
| 2A              | 5   | data input 2                        |
| 2Y              | 6   | data output 2                       |
| GND             | 7   | ground (0 V)                        |
| 3Y              | 8   | data output 3                       |
| 3A              | 9   | data input 3                        |
| 3OE             | 10  | output enable input 3 (active HIGH) |
| 4Y              | 11  | data output 4                       |
| 4A              | 12  | data input 4                        |
| 4OE             | 13  | output enable input 4 (active HIGH) |
| V <sub>CC</sub> | 14  | supply voltage                      |

6. Functional description

Table 3. Function table

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

| Control | Input | Output |
|---------|-------|--------|
| nOE     | nA    | nY     |
| H       | L     | L      |
| H       | H     | H      |
| L       | X     | Z      |

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    |
| 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  | +20  | mA   |
| I <sub>O</sub>   | output current          | V <sub>O</sub> = -0.5 V to (V <sub>CC</sub> + 0.5 V)                    | -25  | +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]                                | -    | 500  | mW   |

- [1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
[2] For SOT108-1 (SO14) package: P<sub>tot</sub> derates linearly with 10.1 mW/K above 100 °C.  
For SOT402-1 (TSSOP14) package: P<sub>tot</sub> derates linearly with 7.3 mW/K above 81 °C.  
For SOT762-1 (DHVQFN14) package: P<sub>tot</sub> derates linearly with 9.6 mW/K above 98 °C.

8. Recommended operating conditions

Table 5. Recommended operating conditions

Voltages are referenced to GND (ground = 0 V)

| Symbol           | Parameter                           | Conditions                       | 74AHC126 |     |                 | 74AHCT126 |     |                 | 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> = 3.0 V to 3.6 V | -        | -   | 100             | -         | -   | -               | ns/V |
|                  |                                     | V <sub>CC</sub> = 4.5 V to 5.5 V | -        | -   | 20              | -         | -   | 20              | ns/V |

9. Static characteristics

Table 6. Static characteristics

At recommended operating conditions; 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   |      |
| 74AHC126        |                           |                                                                                                                        |       |     |       |                  |      |                   |       |      |
| 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    |
|                 |                           | I <sub>O</sub> = -8.0 mA; V <sub>CC</sub> = 4.5 V                                                                      | 3.94  | -   | -     | 3.80             | -    | 3.70              | -     | V    |
| 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> = 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>O</sub> = 8.0 mA; V <sub>CC</sub> = 4.5 V                                                                       | -     | -   | 0.36  | -                | 0.44 | -                 | 0.55  | V    |
| 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>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 | -                 | ±10.0 | 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   |
| C <sub>I</sub>  | input capacitance         | V <sub>I</sub> = V <sub>CC</sub> or GND                                                                                | -     | 3   | 10    | -                | 10   | -                 | 10    | pF   |
| C <sub>O</sub>  | output capacitance        |                                                                                                                        | -     | 4   | -     | -                | -    | -                 | -     | pF   |

| Symbol           | Parameter                 | Conditions                                                                                                                                                  | 25 °C |     |       | -40 °C to +85 °C |      | -40 °C to +125 °C |       | Unit |
|------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|-------|------------------|------|-------------------|-------|------|
|                  |                           |                                                                                                                                                             | Min   | Typ | Max   | Min              | Max  | Min               | Max   |      |
| 74AHCT126        |                           |                                                                                                                                                             |       |     |       |                  |      |                   |       |      |
| 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  | -   | -     | 3.80             | -    | 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>I</sub>   | input leakage current     | V <sub>I</sub> = 5.5 V or GND;<br>V <sub>CC</sub> = 0 V to 5.5 V                                                                                            | -     | -   | 0.1   | -                | 1.0  | -                 | 2.0   | µA   |
| I <sub>OZ</sub>  | OFF-state output current  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ;<br>V <sub>O</sub> = V <sub>CC</sub> or GND;<br>V <sub>CC</sub> = 5.5 V                                | -     | -   | ±0.25 | -                | ±2.5 | -                 | ±10.0 | µA   |
| I <sub>CC</sub>  | supply current            | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A;<br>V <sub>CC</sub> = 5.5 V                                                                   | -     | -   | 2.0   | -                | 20   | -                 | 40    | µA   |
| ΔI <sub>CC</sub> | additional supply current | per input pin;<br>V <sub>I</sub> = V <sub>CC</sub> - 2.1 V; other pins at V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A;<br>V <sub>CC</sub> = 4.5 V to 5.5 V | -     | -   | 1.35  | -                | 1.5  | -                 | 1.5   | mA   |
| C <sub>I</sub>   | input capacitance         | V <sub>I</sub> = V <sub>CC</sub> or GND                                                                                                                     | -     | 3   | 10    | -                | 10   | -                 | 10    | pF   |
| C <sub>O</sub>   | output capacitance        |                                                                                                                                                             | -     | 4   | -     | -                | -    | -                 | -     | pF   |

10. Dynamic characteristics

Table 7. Dynamic characteristics

Voltages are referenced to GND (ground = 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[1] | Max  | Min              | Max  | Min               | Max  |      |
| 74AHC126        |                   |                                  |       |        |      |                  |      |                   |      |      |
| t <sub>pd</sub> | propagation delay | nA to nY; see Fig. 4 [2]         |       |        |      |                  |      |                   |      |      |
|                 |                   | V <sub>CC</sub> = 3.0 V to 3.6 V |       |        |      |                  |      |                   |      |      |
|                 |                   | C <sub>L</sub> = 15 pF           | -     | 4.7    | 8.0  | 1.0              | 9.5  | 1.0               | 10.0 | ns   |
|                 |                   | C <sub>L</sub> = 50 pF           | -     | 6.7    | 11.5 | 1.0              | 13.0 | 1.0               | 14.5 | ns   |
|                 |                   | V <sub>CC</sub> = 4.5 V to 5.5 V |       |        |      |                  |      |                   |      |      |
|                 |                   | C <sub>L</sub> = 15 pF           | -     | 3.3    | 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   |

| Symbol           | Parameter                     | Conditions                                                             | 25 °C |        |      | -40 °C to +85 °C |      | -40 °C to +125 °C |      | Unit |
|------------------|-------------------------------|------------------------------------------------------------------------|-------|--------|------|------------------|------|-------------------|------|------|
|                  |                               |                                                                        | Min   | Typ[1] | Max  | Min              | Max  | Min               | Max  |      |
| t <sub>en</sub>  | enable time                   | nOE to nY; see Fig. 5 [3]                                              |       |        |      |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 3.0 V to 3.6 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 5.3    | 8.0  | 1.0              | 9.5  | 1.0               | 10.0 | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 7.6    | 11.5 | 1.0              | 13.0 | 1.0               | 14.5 | ns   |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 3.6    | 5.3  | 1.0              | 6.1  | 1.0               | 7.0  | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 5.1    | 7.6  | 1.0              | 8.7  | 1.0               | 9.5  | ns   |
| t <sub>dis</sub> | disable time                  | nOE to nY; see Fig. 5 [4]                                              |       |        |      |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 3.0 V to 3.6 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 6.6    | 9.7  | 1.0              | 11.5 | 1.0               | 12.5 | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 9.4    | 13.2 | 1.0              | 15.0 | 1.0               | 16.5 | ns   |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 4.7    | 6.8  | 1.0              | 8.0  | 1.0               | 8.5  | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 6.7    | 8.8  | 1.0              | 10.0 | 1.0               | 11.0 | ns   |
| C <sub>PD</sub>  | power dissipation capacitance | f <sub>i</sub> = 1 MHz;<br>V <sub>I</sub> = GND to V <sub>CC</sub> [5] | -     | 10     | -    | -                | -    | -                 | -    | pF   |
| 74AHCT126        |                               |                                                                        |       |        |      |                  |      |                   |      |      |
| t <sub>pd</sub>  | propagation delay             | nA to nY; see Fig. 4 [2]                                               |       |        |      |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 3.0    | 5.5  | 1.0              | 6.5  | 1.0               | 7.0  | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 4.3    | 7.5  | 1.0              | 8.5  | 1.0               | 9.5  | ns   |
| t <sub>en</sub>  | enable time                   | nOE to nY; see Fig. 5 [3]                                              |       |        |      |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 3.3    | 5.1  | 1.0              | 6.0  | 1.0               | 6.5  | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 4.7    | 7.1  | 1.0              | 8.0  | 1.0               | 9.0  | ns   |
| t <sub>dis</sub> | disable time                  | nOE to nY; see Fig. 5 [4]                                              |       |        |      |                  |      |                   |      |      |
|                  |                               | V <sub>CC</sub> = 4.5 V to 5.5 V                                       |       |        |      |                  |      |                   |      |      |
|                  |                               | C <sub>L</sub> = 15 pF                                                 | -     | 4.8    | 6.8  | 1.0              | 8.0  | 1.0               | 8.5  | ns   |
|                  |                               | C <sub>L</sub> = 50 pF                                                 | -     | 6.9    | 8.9  | 1.0              | 10.0 | 1.0               | 11.5 | ns   |
| C <sub>PD</sub>  | power dissipation capacitance | f <sub>i</sub> = 1 MHz;<br>V <sub>I</sub> = GND to V <sub>CC</sub> [5] | -     | 12     | -    | -                | -    | -                 | -    | pF   |

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

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

[3] t<sub>en</sub> is the same as t<sub>PZL</sub> and t<sub>PZH</sub>.

[4] t<sub>dis</sub> is the same as t<sub>PLZ</sub> and t<sub>PHZ</sub>.

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

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

$\Sigma(C_L \times V_{CC}^2 \times f_o)$  = sum of the outputs.

10.1. Waveforms and test circuit

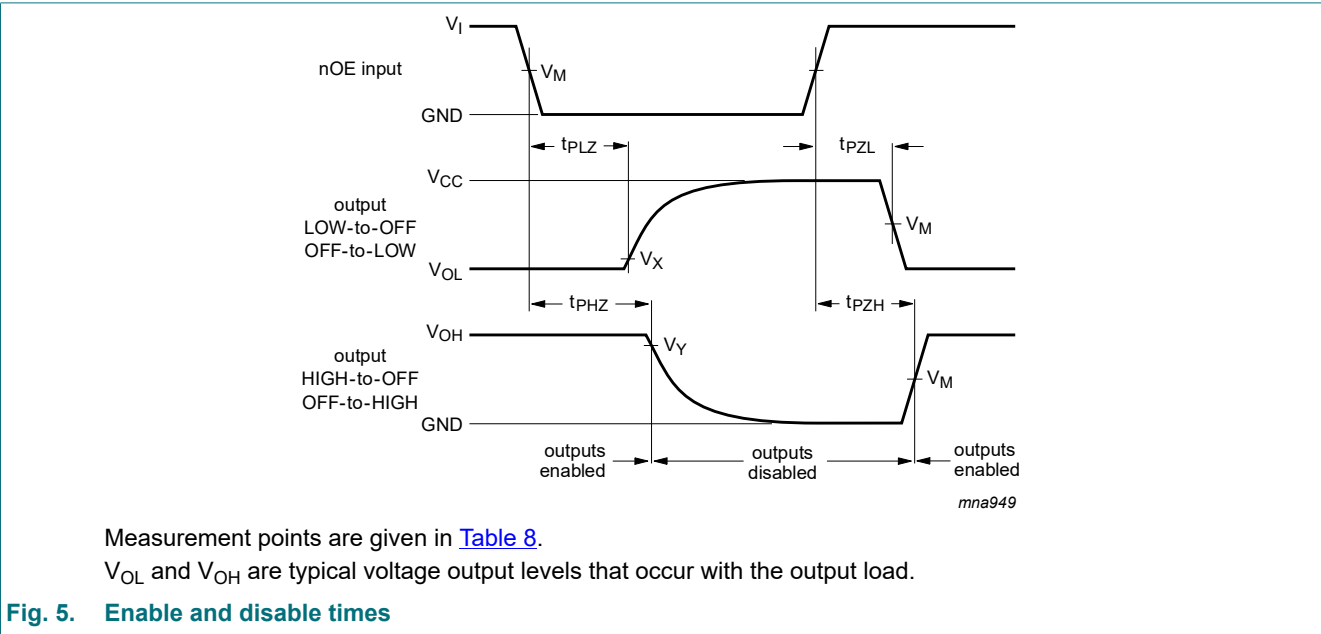
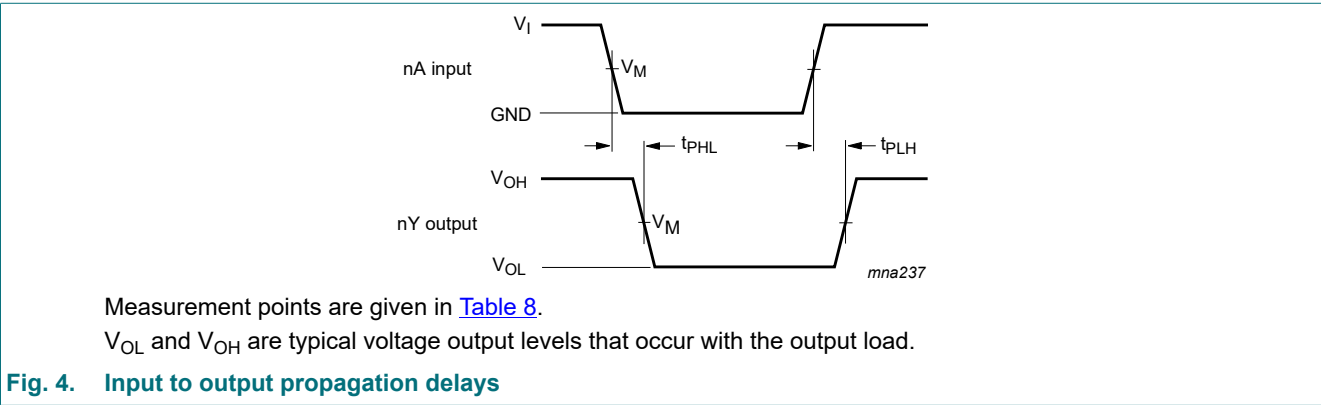


Table 8. Measurement points

| Type      | Input               | Output              |                          |                          |
|-----------|---------------------|---------------------|--------------------------|--------------------------|
|           | $V_M$               | $V_M$               | $V_X$                    | $V_Y$                    |
| 74AHC126  | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ | $V_{OL} + 0.3 \text{ V}$ | $V_{OH} - 0.3 \text{ V}$ |
| 74AHCT126 | 1.5 V               | $0.5 \times V_{CC}$ | $V_{OL} + 0.3 \text{ V}$ | $V_{OH} - 0.3 \text{ V}$ |

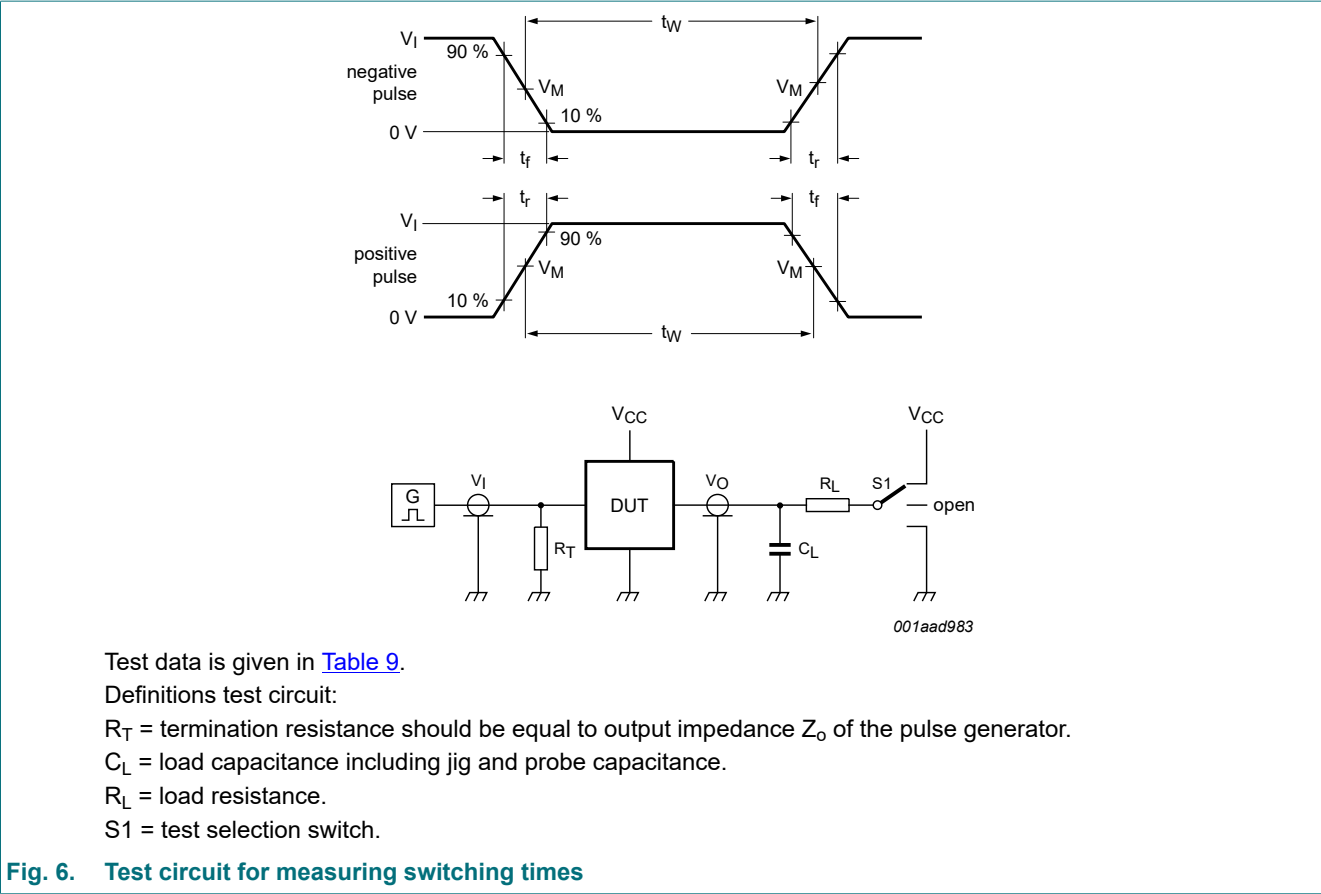


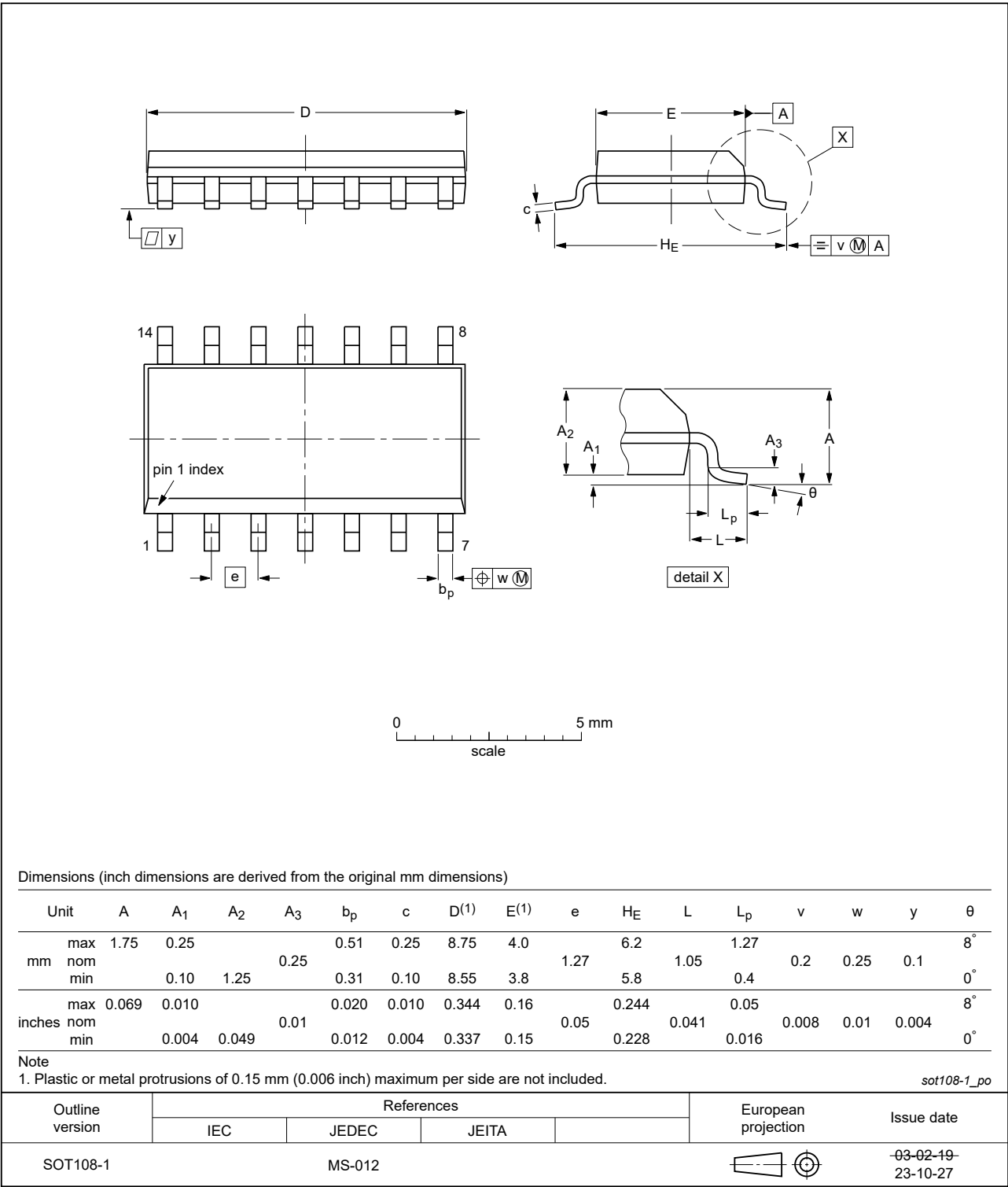
Table 9. Test data

| Type      | Input    |                       | Load         |              | S1 position        |                    |                    |
|-----------|----------|-----------------------|--------------|--------------|--------------------|--------------------|--------------------|
|           | $V_I$    | $t_r, t_f$            | $C_L$        | $R_L$        | $t_{PHL}, t_{PLH}$ | $t_{PZH}, t_{PHZ}$ | $t_{PZL}, t_{PLZ}$ |
| 74AHC126  | $V_{CC}$ | $\leq 3.0 \text{ ns}$ | 15 pF, 50 pF | 1 k $\Omega$ | open               | GND                | $V_{CC}$           |
| 74AHCT126 | 3.0 V    | $\leq 3.0 \text{ ns}$ | 15 pF, 50 pF | 1 k $\Omega$ | open               | GND                | $V_{CC}$           |

11. Package outline

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

SOT108-1



0

5 mm

scale

detail X

Fig. 7. Package outline SOT108-1 (SO14)

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

SOT402-1

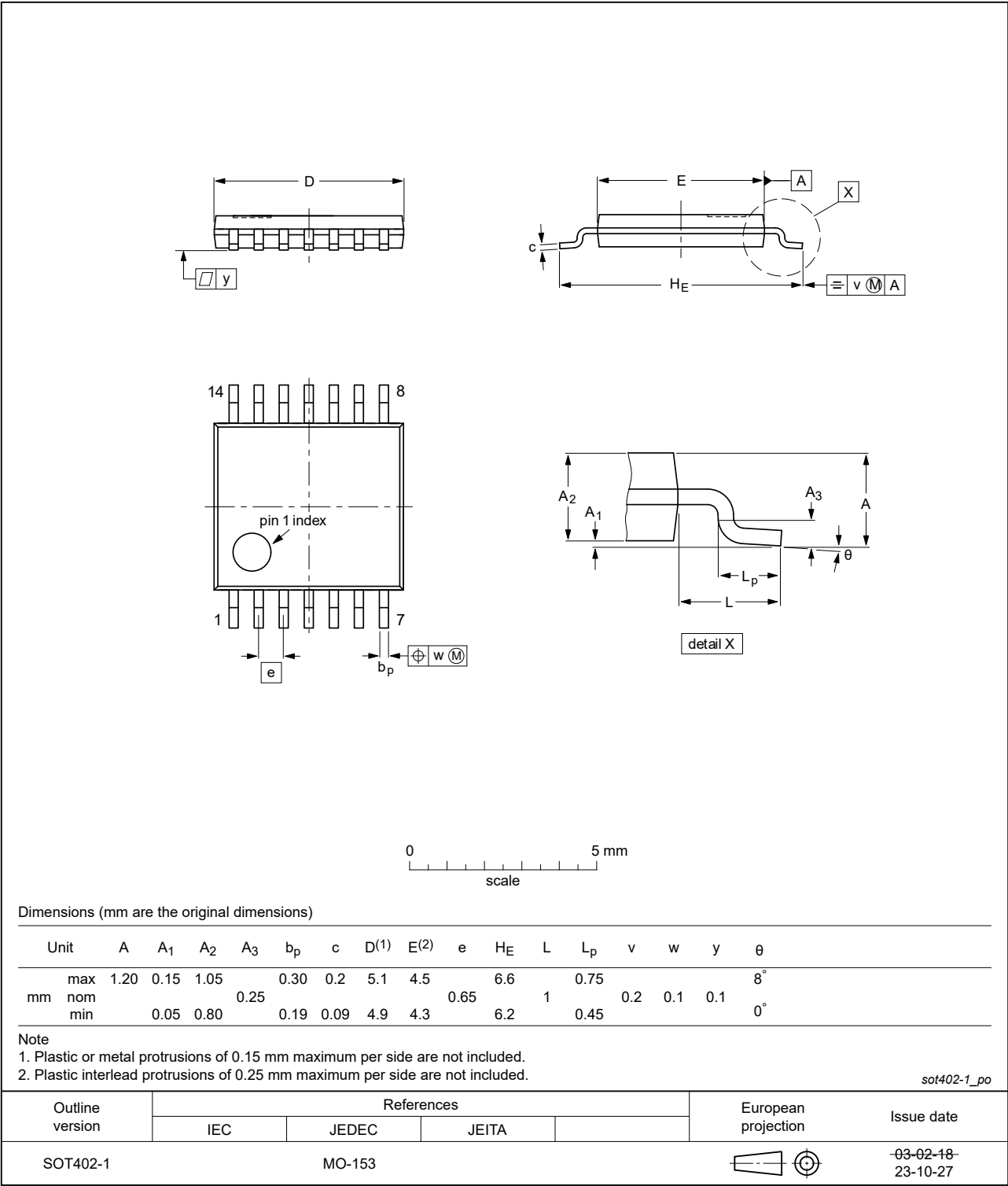


Fig. 8. Package outline SOT402-1 (TSSOP14)

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

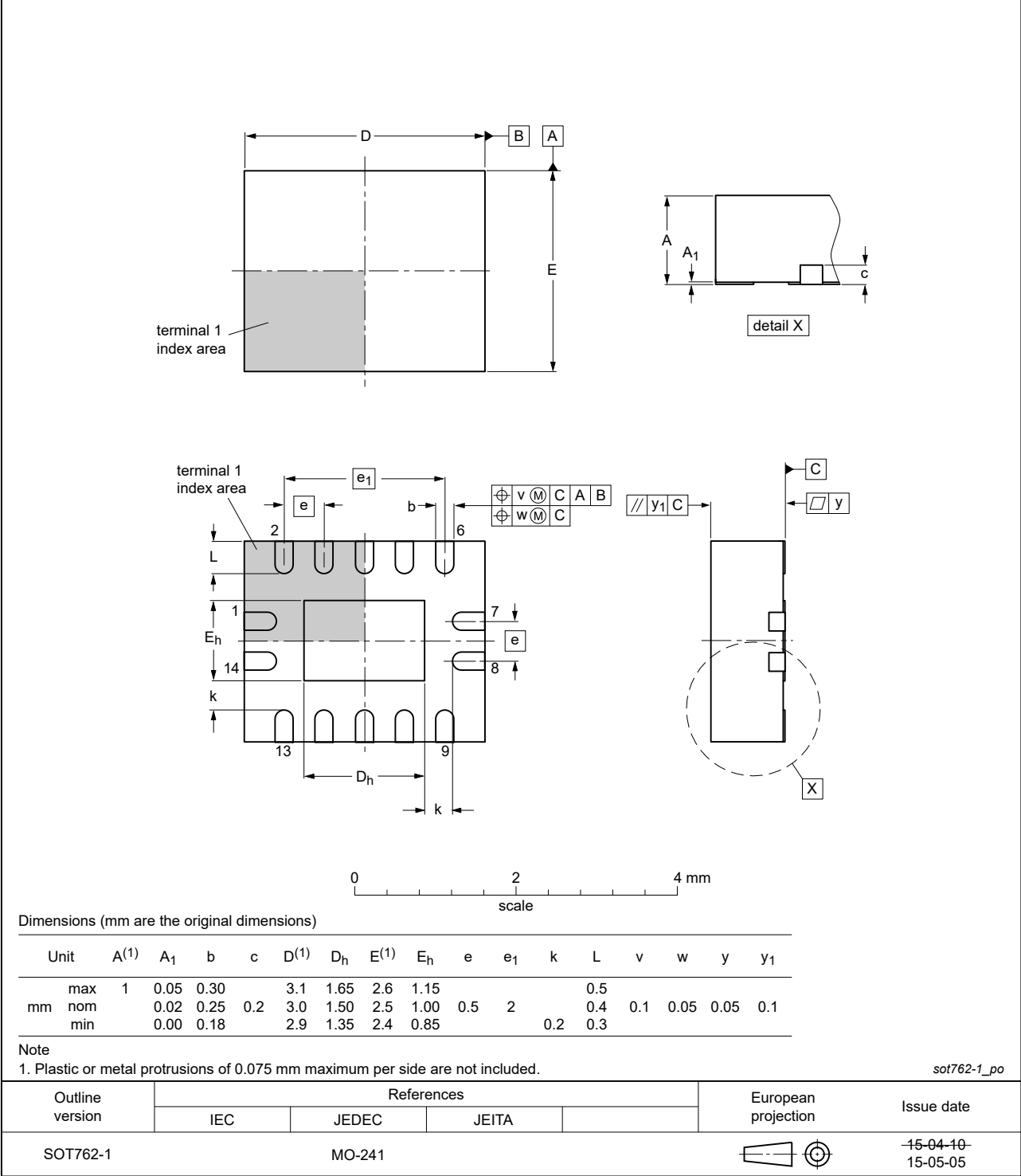


Fig. 9. Package outline SOT762-1 (DHVQFN14)

12. Abbreviations

Table 10. Abbreviations

| Acronym | Description                             |
|---------|-----------------------------------------|
| CDM     | Charged Device Model                    |
| CMOS    | Complementary Metal-Oxide Semiconductor |
| DUT     | Device Under Test                       |
| ESD     | ElectroStatic Discharge                 |
| HBM     | Human Body Model                        |

13. Revision history

Table 11. Revision history

| Document ID       | Release date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data sheet status         | Change notice | Supersedes        |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------|-------------------|
| 74AHC_AHCT126 v.7 | 20240229                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product data sheet        | -             | 74AHC_AHCT126 v.6 |
| Modifications:    | <ul style="list-style-type: none"><li><a href="#">Fig. 7</a>, <a href="#">Fig. 8</a>: Aligned SO and TSSOP package outline drawings to JEDEC MS-012 and MO-153.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                   |                           |               |                   |
| 74AHC_AHCT126 v.6 | 20230830                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product data sheet        | -             | 74AHC_AHCT126 v.5 |
| 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_AHCT126 v.5 | 20200428                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product data sheet        | -             | 74AHC_AHCT126 v.4 |
| 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><a href="#">Section 1</a>: updated.</li><li><a href="#">Table 4</a>: Derating values for P<sub>tot</sub> total power dissipation have been updated.</li><li><a href="#">Table 6</a>: Conditions for I<sub>OZ</sub> corrected.</li><li>Package outline drawing of SOT762-1 (<a href="#">Fig. 9</a>) modified.</li></ul> |                           |               |                   |
| 74AHC_AHCT126 v.4 | 20090812                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product data sheet        | -             | 74AHC_AHCT126 v.3 |
| Modifications:    | <ul style="list-style-type: none"><li>Added type numbers 74AHC126BQ and 74AHCT126BQ (DHVQFN14 package)</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |               |                   |
| 74AHC_AHCT126 v.3 | 20080425                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product data sheet        | -             | 74AHC_AHCT126 v.2 |
| 74AHC_AHCT126 v.2 | 19990929                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product specification     | -             | 74AHC_AHCT126 v.1 |
| 74AHC_AHCT126 v.1 | 19990112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Preliminary specification | -             | -                 |

## 14. 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".
- [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 <https://www.nexperia.com>.

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