



# 74HC157; 74HCT157

## Quad 2-input multiplexer

Rev. 10 — 28 May 2024

Product data sheet

## 1. General description

The 74HC157; 74HCT157 is a quad 2-input multiplexer. The device features select (S) and enable  $\bar{E}$  inputs. A HIGH on S selects data source 1, a LOW data source 0. A HIGH on  $\bar{E}$  forces all the outputs (1Y to 4Y) LOW. Inputs include clamp diodes. This enables the use of current limiting resistors to interface inputs to voltages in excess of  $V_{CC}$ .

## 2. Features and benefits

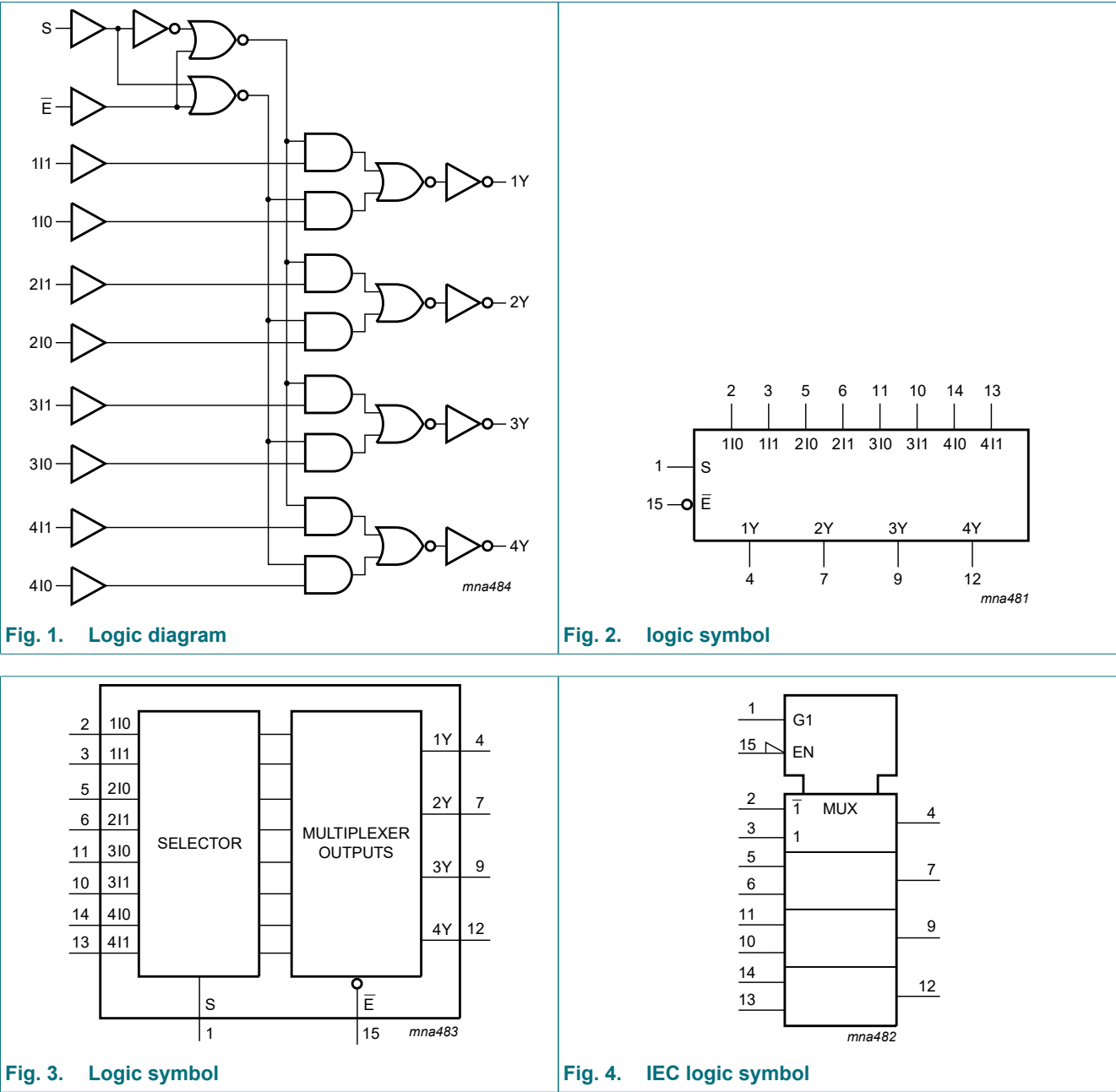
- Wide supply voltage range from 2.0 V to 6.0 V
- CMOS low power dissipation
- High noise immunity
- Latch-up performance exceeds 100 mA per JESD 78 Class II Level B
- Complies with JEDEC standards:
  - JESD8C (2.7 V to 3.6 V)
  - JESD7A (2.0 V to 6.0 V)
- Input levels:
  - For 74HC157: CMOS level
  - For 74HCT157: TTL level
- Non-inverting data path
- 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

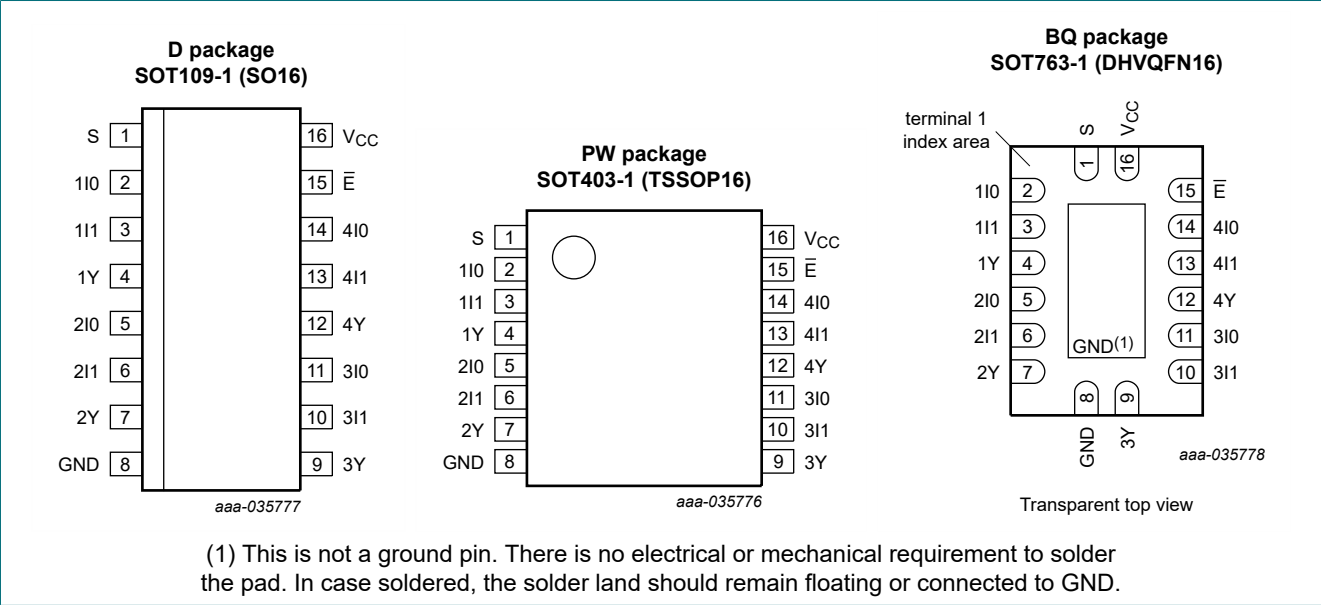
| Type number                                             | Package           |          |                                                                                                                                      |                          |
|---------------------------------------------------------|-------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                                         | Temperature range | Name     | Description                                                                                                                          | Version                  |
| <a href="#">74HC157D</a><br><a href="#">74HCT157D</a>   | -40 °C to +125 °C | SO16     | plastic small outline package; 16 leads;<br>body width 3.9 mm                                                                        | <a href="#">SOT109-1</a> |
| <a href="#">74HC157PW</a><br><a href="#">74HCT157PW</a> | -40 °C to +125 °C | TSSOP16  | plastic thin shrink small outline package; 16 leads;<br>body width 4.4 mm                                                            | <a href="#">SOT403-1</a> |
| <a href="#">74HC157BQ</a><br><a href="#">74HCT157BQ</a> | -40 °C to +125 °C | DHVQFN16 | plastic dual in-line compatible thermal enhanced<br>very thin quad flat package; no leads; 16 terminals;<br>body 2.5 × 3.5 × 0.85 mm | <a href="#">SOT763-1</a> |

4. Functional diagram



5. Pinning information

5.1. Pinning



5.2. Pin description

Table 2. Pin description

| Symbol          | Pin          | Description               |
|-----------------|--------------|---------------------------|
| S               | 1            | common data select input  |
| 1I0 to 4I0      | 2, 5, 11, 14 | data inputs from source 0 |
| 1I1 to 4I1      | 3, 6, 10, 13 | data inputs from source 1 |
| 1Y to 4Y        | 4, 7, 9, 12  | multiplexer outputs       |
| GND             | 8            | ground (0 V)              |
| $\bar{E}$       | 15           | enable input (active LOW) |
| V <sub>CC</sub> | 16           | supply voltage            |

6. Functional description

Table 3. Function table

H = HIGH voltage level; L = LOW voltage level; X = don't care.

| Input     |   |     |     | Output |
|-----------|---|-----|-----|--------|
| $\bar{E}$ | S | nI0 | nI1 | nY     |
| H         | X | X   | X   | L      |
| L         | L | L   | X   | L      |
| L         | L | H   | X   | H      |
| L         | H | X   | L   | L      |
| L         | H | X   | H   | H      |

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   | V    |
| I <sub>IK</sub>  | input clamping current  | V <sub>I</sub> < -0.5 V or V <sub>I</sub> > V <sub>CC</sub> + 0.5 V | -    | ±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 | -    | ±20  | mA   |
| I <sub>O</sub>   | output current          | V <sub>O</sub> = -0.5 V to V <sub>CC</sub> + 0.5 V                  | -    | ±25  | mA   |
| I <sub>CC</sub>  | supply current          |                                                                     | -    | +50  | mA   |
| I <sub>GND</sub> | ground current          |                                                                     | -50  | -    | mA   |
| T <sub>stg</sub> | storage temperature     |                                                                     | -65  | +150 | °C   |
| P <sub>tot</sub> | total power dissipation | T <sub>amb</sub> = -40 °C to +125 °C [1]                            | -    | 500  | mW   |

- [1] For SOT109-1 (SO16) package: P<sub>tot</sub> derates linearly with 12.4 mW/K above 110 °C.  
For SOT403-1 (TSSOP16) package: P<sub>tot</sub> derates linearly with 8.5 mW/K above 91 °C.  
For SOT763-1 (DHVQFN16) package: P<sub>tot</sub> derates linearly with 11.2 mW/K above 106 °C.

8. Recommended operating conditions

Table 5. Recommended operating conditions

Voltages are referenced to GND (ground = 0 V)

| Symbol           | Parameter                           | Conditions              | 74HC157 |      |                 | 74HCT157 |      |                 | Unit |
|------------------|-------------------------------------|-------------------------|---------|------|-----------------|----------|------|-----------------|------|
|                  |                                     |                         | Min     | Typ  | Max             | Min      | Typ  | Max             |      |
| V <sub>CC</sub>  | supply voltage                      |                         | 2.0     | 5.0  | 6.0             | 4.5      | 5.0  | 5.5             | V    |
| V <sub>I</sub>   | input voltage                       |                         | 0       | -    | V <sub>CC</sub> | 0        | -    | V <sub>CC</sub> | 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> = 2.0 V | -       | -    | 625             | -        | -    | -               | ns/V |
|                  |                                     | V <sub>CC</sub> = 4.5 V | -       | 1.67 | 139             | -        | 1.67 | 139             | ns/V |
|                  |                                     | V <sub>CC</sub> = 6.0 V | -       | -    | 83              | -        | -    | -               | ns/V |

9. Static characteristics

Table 6. Static characteristics

At recommended operating conditions; voltages are referenced to GND (ground = 0 V).

| Symbol          | Parameter                    | Conditions                                                                                | T <sub>amb</sub> = 25 °C |      |      | T <sub>amb</sub> = -40 °C<br>to +85 °C |      | T <sub>amb</sub> = -40 °C<br>to +125 °C |      | Unit |
|-----------------|------------------------------|-------------------------------------------------------------------------------------------|--------------------------|------|------|----------------------------------------|------|-----------------------------------------|------|------|
|                 |                              |                                                                                           | Min                      | Typ  | Max  | Min                                    | Max  | Min                                     | Max  |      |
| 74HC157         |                              |                                                                                           |                          |      |      |                                        |      |                                         |      |      |
| V <sub>IH</sub> | HIGH-level<br>input voltage  | V <sub>CC</sub> = 2.0 V                                                                   | 1.5                      | 1.2  | -    | 1.5                                    | -    | 1.5                                     | -    | V    |
|                 |                              | V <sub>CC</sub> = 4.5 V                                                                   | 3.15                     | 2.4  | -    | 3.15                                   | -    | 3.15                                    | -    | V    |
|                 |                              | V <sub>CC</sub> = 6.0 V                                                                   | 4.2                      | 3.2  | -    | 4.2                                    | -    | 4.2                                     | -    | V    |
| V <sub>IL</sub> | LOW-level<br>input voltage   | V <sub>CC</sub> = 2.0 V                                                                   | -                        | 0.8  | 0.5  | -                                      | 0.5  | -                                       | 0.5  | V    |
|                 |                              | V <sub>CC</sub> = 4.5 V                                                                   | -                        | 2.1  | 1.35 | -                                      | 1.35 | -                                       | 1.35 | V    |
|                 |                              | V <sub>CC</sub> = 6.0 V                                                                   | -                        | 2.8  | 1.8  | -                                      | 1.8  | -                                       | 1.8  | V    |
| V <sub>OH</sub> | HIGH-level<br>output voltage | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                       |                          |      |      |                                        |      |                                         |      |      |
|                 |                              | I <sub>O</sub> = -20 µA; V <sub>CC</sub> = 2.0 V                                          | 1.9                      | 2.0  | -    | 1.9                                    | -    | 1.9                                     | -    | V    |
|                 |                              | I <sub>O</sub> = -20 µA; V <sub>CC</sub> = 4.5 V                                          | 4.4                      | 4.5  | -    | 4.4                                    | -    | 4.4                                     | -    | V    |
|                 |                              | I <sub>O</sub> = -20 µA; V <sub>CC</sub> = 6.0 V                                          | 5.9                      | 6.0  | -    | 5.9                                    | -    | 5.9                                     | -    | V    |
|                 |                              | I <sub>O</sub> = -4.0 mA; V <sub>CC</sub> = 4.5 V                                         | 3.98                     | 4.32 | -    | 3.84                                   | -    | 3.7                                     | -    | V    |
|                 |                              | I <sub>O</sub> = -5.2 mA; V <sub>CC</sub> = 6.0 V                                         | 5.48                     | 5.81 | -    | 5.34                                   | -    | 5.2                                     | -    | V    |
| V <sub>OL</sub> | LOW-level<br>output voltage  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                       |                          |      |      |                                        |      |                                         |      |      |
|                 |                              | I <sub>O</sub> = 20 µA; V <sub>CC</sub> = 2.0 V                                           | -                        | 0    | 0.1  | -                                      | 0.1  | -                                       | 0.1  | V    |
|                 |                              | I <sub>O</sub> = 20 µA; V <sub>CC</sub> = 4.5 V                                           | -                        | 0    | 0.1  | -                                      | 0.1  | -                                       | 0.1  | V    |
|                 |                              | I <sub>O</sub> = 20 µA; V <sub>CC</sub> = 6.0 V                                           | -                        | 0    | 0.1  | -                                      | 0.1  | -                                       | 0.1  | V    |
|                 |                              | I <sub>O</sub> = 4.0 mA; V <sub>CC</sub> = 4.5 V                                          | -                        | 0.15 | 0.26 | -                                      | 0.33 | -                                       | 0.4  | V    |
|                 |                              | I <sub>O</sub> = 5.2 mA; V <sub>CC</sub> = 6.0 V                                          | -                        | 0.16 | 0.26 | -                                      | 0.33 | -                                       | 0.4  | V    |
| I <sub>I</sub>  | input leakage<br>current     | V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 6.0 V                          | -                        | -    | ±0.1 | -                                      | ±1.0 | -                                       | ±1.0 | µA   |
| I <sub>CC</sub> | supply current               | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A;<br>V <sub>CC</sub> = 6.0 V | -                        | -    | 8.0  | -                                      | 80   | -                                       | 160  | µA   |
| C <sub>I</sub>  | input<br>capacitance         |                                                                                           | -                        | 3.5  | -    | -                                      | -    | -                                       | -    | pF   |

| Symbol           | Parameter                 | Conditions                                                                                                                               | T <sub>amb</sub> = 25 °C |      |      | T <sub>amb</sub> = -40 °C<br>to +85 °C |      | T <sub>amb</sub> = -40 °C<br>to +125 °C |      | Unit |
|------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------|------|----------------------------------------|------|-----------------------------------------|------|------|
|                  |                           |                                                                                                                                          | Min                      | Typ  | Max  | Min                                    | Max  | Min                                     | Max  |      |
| 74HCT157         |                           |                                                                                                                                          |                          |      |      |                                        |      |                                         |      |      |
| V <sub>IH</sub>  | HIGH-level input voltage  | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                                                         | 2.0                      | 1.6  | -    | 2.0                                    | -    | 2.0                                     | -    | V    |
| V <sub>IL</sub>  | LOW-level input voltage   | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                                                         | -                        | 1.2  | 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> = -20 µA                                                                                                                  | 4.4                      | 4.5  | -    | 4.4                                    | -    | 4.4                                     | -    | V    |
|                  |                           | I <sub>O</sub> = -4 mA                                                                                                                   | 3.98                     | 4.32 | -    | 3.84                                   | -    | 3.7                                     | -    | 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> = 20 µA                                                                                                                   | -                        | 0    | 0.1  | -                                      | 0.1  | -                                       | 0.1  | V    |
|                  |                           | I <sub>O</sub> = 4.0 mA                                                                                                                  | -                        | 0.15 | 0.26 | -                                      | 0.33 | -                                       | 0.4  | V    |
| I <sub>I</sub>   | input leakage current     | V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 5.5 V                                                                         | -                        | -    | ±0.1 | -                                      | ±1.0 | -                                       | ±1.0 | µA   |
| I <sub>CC</sub>  | supply current            | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 5.5 V                                                   | -                        | -    | 8.0  | -                                      | 80   | -                                       | 160  | µA   |
| ΔI <sub>CC</sub> | additional supply current | V <sub>I</sub> = V <sub>CC</sub> - 2.1 V; I <sub>O</sub> = 0 A; other inputs at V <sub>CC</sub> or GND; V <sub>CC</sub> = 4.5 V to 5.5 V |                          |      |      |                                        |      |                                         |      |      |
|                  |                           | per input pin; nI0, nI1 inputs                                                                                                           | -                        | 100  | 360  | -                                      | 450  | -                                       | 490  | µA   |
|                  |                           | per input pin; $\overline{E}$ input                                                                                                      | -                        | 60   | 216  | -                                      | 270  | -                                       | 294  | µA   |
|                  |                           | per input pin; S input                                                                                                                   | -                        | 100  | 360  | -                                      | 450  | -                                       | 490  | µA   |
| C <sub>I</sub>   | input capacitance         |                                                                                                                                          | -                        | 3.5  | -    | -                                      | -    | -                                       | -    | pF   |

10. Dynamic characteristics

Table 7. Dynamic characteristics

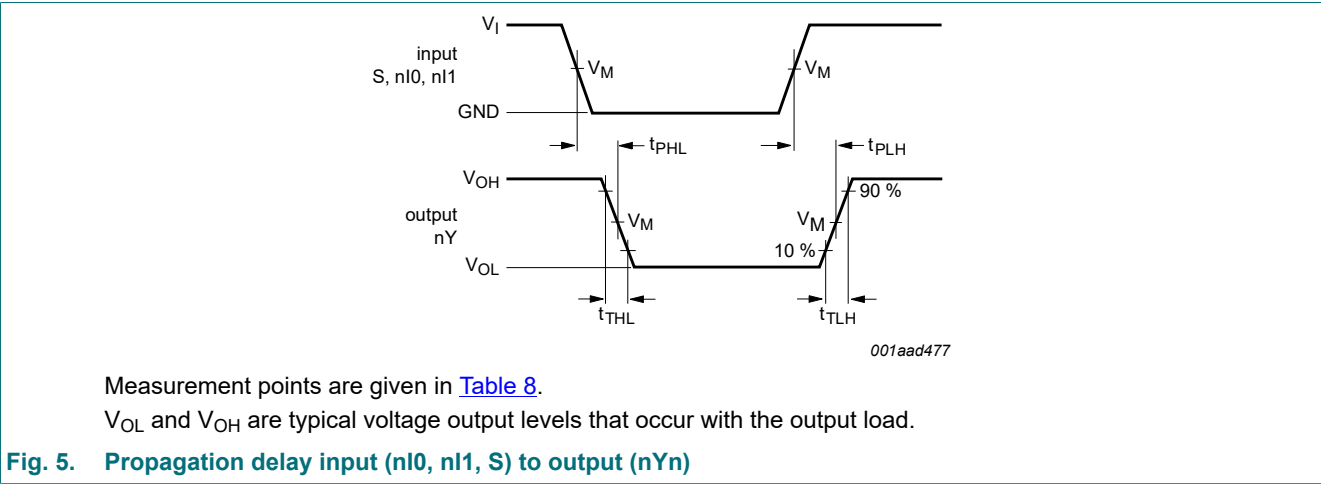
Voltages are referenced to GND (ground = 0 V); C<sub>L</sub> = 50 pF unless otherwise specified; for test circuit see Fig. 7.

| Symbol          | Parameter                           | Conditions                                                                        | T <sub>amb</sub> = 25 °C |     |     | T <sub>amb</sub> = -40 °C<br>to +85 °C |     | T <sub>amb</sub> = -40 °C<br>to +125 °C |     | Unit |
|-----------------|-------------------------------------|-----------------------------------------------------------------------------------|--------------------------|-----|-----|----------------------------------------|-----|-----------------------------------------|-----|------|
|                 |                                     |                                                                                   | Min                      | Typ | Max | Min                                    | Max | Min                                     | Max |      |
| 74HC157         |                                     |                                                                                   |                          |     |     |                                        |     |                                         |     |      |
| t <sub>pd</sub> | propagation<br>delay                | nI0, nI1 to nY; see <a href="#">Fig. 5</a> [1]                                    |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 2.0 V                                                           | -                        | 36  | 125 | -                                      | 155 | -                                       | 190 | ns   |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                           | -                        | 13  | 25  | -                                      | 31  | -                                       | 38  | ns   |
|                 |                                     | V <sub>CC</sub> = 5 V; C <sub>L</sub> = 15 pF                                     | -                        | 11  | -   | -                                      | -   | -                                       | -   | ns   |
|                 |                                     | V <sub>CC</sub> = 6.0 V                                                           | -                        | 10  | 21  | -                                      | 26  | -                                       | 32  | ns   |
|                 |                                     | S to nY; see <a href="#">Fig. 5</a> [1]                                           |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 2.0 V                                                           | -                        | 41  | 125 | -                                      | 155 | -                                       | 190 | ns   |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                           | -                        | 15  | 25  | -                                      | 31  | -                                       | 38  | ns   |
|                 |                                     | V <sub>CC</sub> = 5 V; C <sub>L</sub> = 15 pF                                     | -                        | 12  | -   | -                                      | -   | -                                       | -   | ns   |
|                 |                                     | V <sub>CC</sub> = 6.0 V                                                           | -                        | 12  | 21  | -                                      | 26  | -                                       | 32  | ns   |
|                 |                                     | $\bar{E}$ to nY; see <a href="#">Fig. 6</a> [1]                                   |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 2.0 V                                                           | -                        | 39  | 115 | -                                      | 145 | -                                       | 175 | ns   |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                           | -                        | 14  | 23  | -                                      | 29  | -                                       | 35  | ns   |
|                 |                                     | V <sub>CC</sub> = 5 V; C <sub>L</sub> = 15 pF                                     | -                        | 11  | -   | -                                      | -   | -                                       | -   | ns   |
|                 |                                     | V <sub>CC</sub> = 6.0 V                                                           | -                        | 11  | 20  | -                                      | 25  | -                                       | 30  | ns   |
| t <sub>t</sub>  | transition<br>time                  | nY; see <a href="#">Fig. 5</a> [2]                                                |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 2.0 V                                                           | -                        | 19  | 75  | -                                      | 95  | -                                       | 110 | ns   |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                           | -                        | 7   | 15  | -                                      | 19  | -                                       | 22  | ns   |
|                 |                                     | V <sub>CC</sub> = 6.0 V                                                           | -                        | 6   | 13  | -                                      | 16  | -                                       | 19  | ns   |
| C <sub>PD</sub> | power<br>dissipation<br>capacitance | C <sub>L</sub> = 50 pF; f = 1 MHz;<br>V <sub>I</sub> = GND to V <sub>CC</sub> [3] | -                        | 70  | -   | -                                      | -   | -                                       | -   | pF   |

| Symbol          | Parameter                           | Conditions                                                                                | T <sub>amb</sub> = 25 °C |     |     | T <sub>amb</sub> = -40 °C<br>to +85 °C |     | T <sub>amb</sub> = -40 °C<br>to +125 °C |     | Unit |
|-----------------|-------------------------------------|-------------------------------------------------------------------------------------------|--------------------------|-----|-----|----------------------------------------|-----|-----------------------------------------|-----|------|
|                 |                                     |                                                                                           | Min                      | Typ | Max | Min                                    | Max | Min                                     | Max |      |
| 74HCT157        |                                     |                                                                                           |                          |     |     |                                        |     |                                         |     |      |
| t <sub>pd</sub> | propagation<br>delay                | nI0, nI1 to nY; see <a href="#">Fig. 5</a> [1]                                            |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                                   | -                        | 16  | 27  | -                                      | 34  | -                                       | 41  | ns   |
|                 |                                     | V <sub>CC</sub> = 5 V; C <sub>L</sub> = 15 pF                                             | -                        | 13  | -   | -                                      | -   | -                                       | -   | ns   |
|                 |                                     | S to nY; see <a href="#">Fig. 5</a> [1]                                                   |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                                   | -                        | 22  | 37  | -                                      | 46  | -                                       | 56  | ns   |
|                 |                                     | V <sub>CC</sub> = 5 V; C <sub>L</sub> = 15 pF                                             | -                        | 19  | -   | -                                      | -   | -                                       | -   | ns   |
|                 |                                     | E to nY; see <a href="#">Fig. 6</a> [1]                                                   |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                                   | -                        | 15  | 26  | -                                      | 33  | -                                       | 39  | ns   |
|                 |                                     | V <sub>CC</sub> = 5 V; C <sub>L</sub> = 15 pF                                             | -                        | 12  | -   | -                                      | -   | -                                       | -   | ns   |
| t <sub>t</sub>  | transition<br>time                  | nY; see <a href="#">Fig. 5</a> [2]                                                        |                          |     |     |                                        |     |                                         |     |      |
|                 |                                     | V <sub>CC</sub> = 4.5 V                                                                   | -                        | 7   | 15  | -                                      | 19  | -                                       | 22  | ns   |
| C <sub>PD</sub> | power<br>dissipation<br>capacitance | C <sub>L</sub> = 50 pF; f = 1 MHz;<br>V <sub>I</sub> = GND to V <sub>CC</sub> - 1.5 V [3] | -                        | 70  | -   | -                                      | -   | -                                       | -   | pF   |

- [1] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.
- [2] t<sub>t</sub> is the same as t<sub>THL</sub> and t<sub>TLH</sub>.
- [3] 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 outputs.

10.1. Waveforms and test circuit



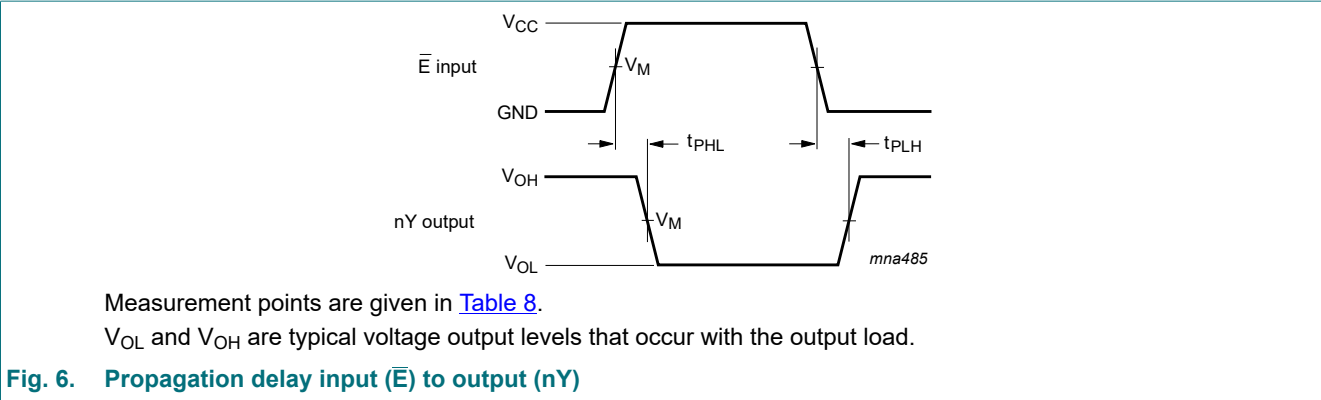


Table 8. Measurement points

| Type     | Input       | Output      |
|----------|-------------|-------------|
|          | $V_M$       | $V_M$       |
| 74HC157  | $0.5V_{CC}$ | $0.5V_{CC}$ |
| 74HCT157 | 1.3 V       | 1.3 V       |

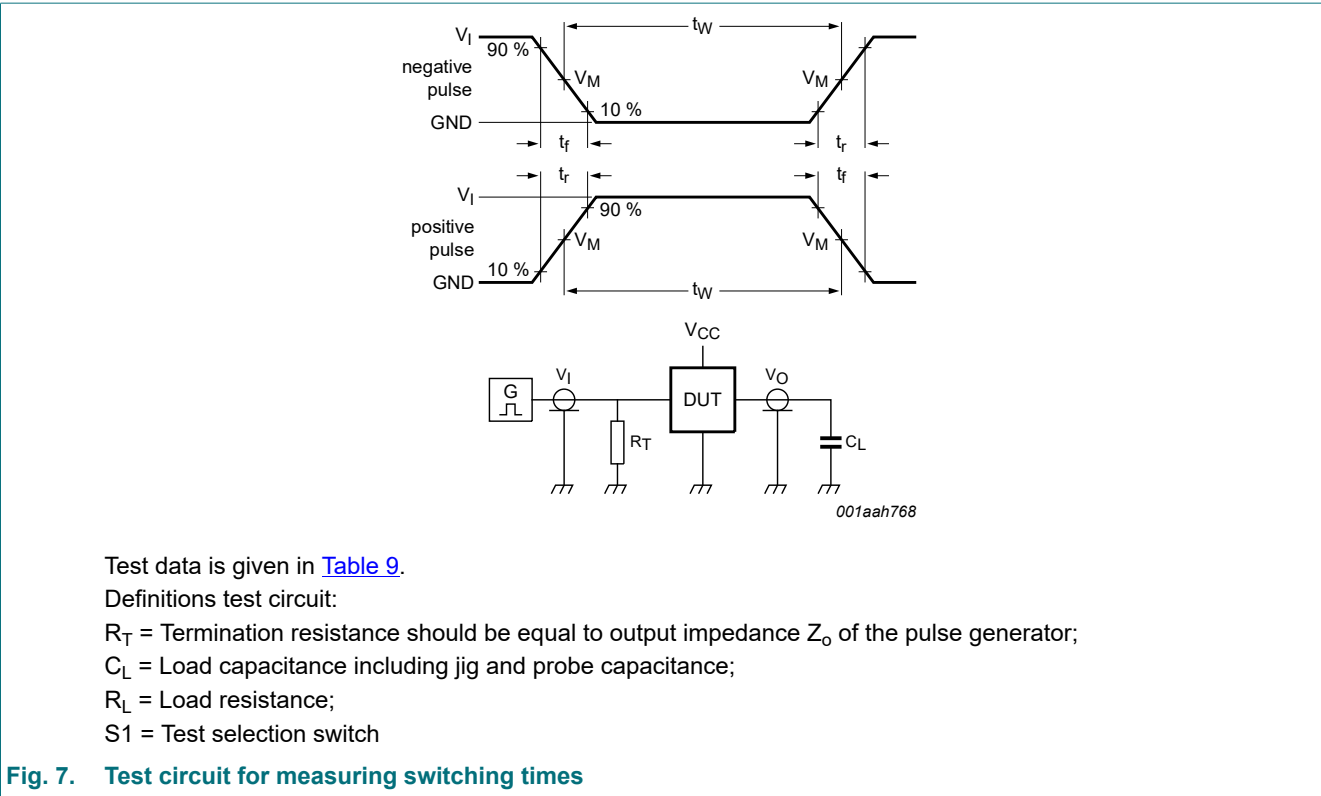


Table 9. Test data

| Type     | Input    |            | Load         | Test               |
|----------|----------|------------|--------------|--------------------|
|          | $V_I$    | $t_r, t_f$ | $C_L$        |                    |
| 74HC157  | $V_{CC}$ | 6.0 ns     | 15 pF, 50 pF | $t_{PLH}, t_{PHL}$ |
| 74HCT157 | 3.0 V    | 6.0 ns     | 15 pF, 50 pF | $t_{PLH}, t_{PHL}$ |

11. Package outline

SO16: plastic small outline package; 16 leads; body width 3.9 mm

SOT109-1

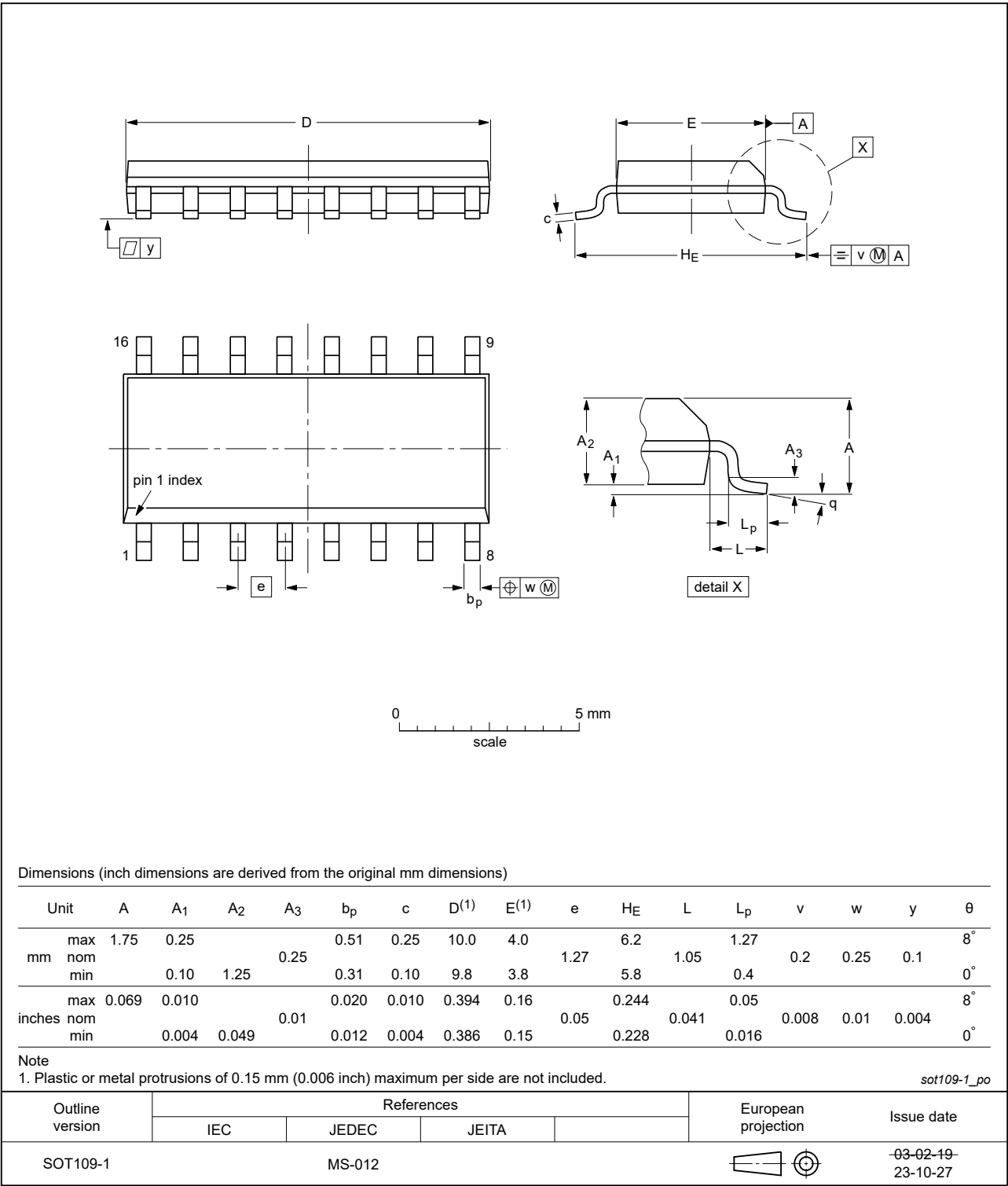


Fig. 8. Package outline SOT109-1 (SO16)

TSSOP16: plastic thin shrink small outline package; 16 leads; body width 4.4 mm

SOT403-1



Fig. 9. Package outline SOT403-1 (TSSOP16)

DHVQFN16: plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads; 16 terminals; body 2.5 x 3.5 x 0.85 mm

SOT763-1

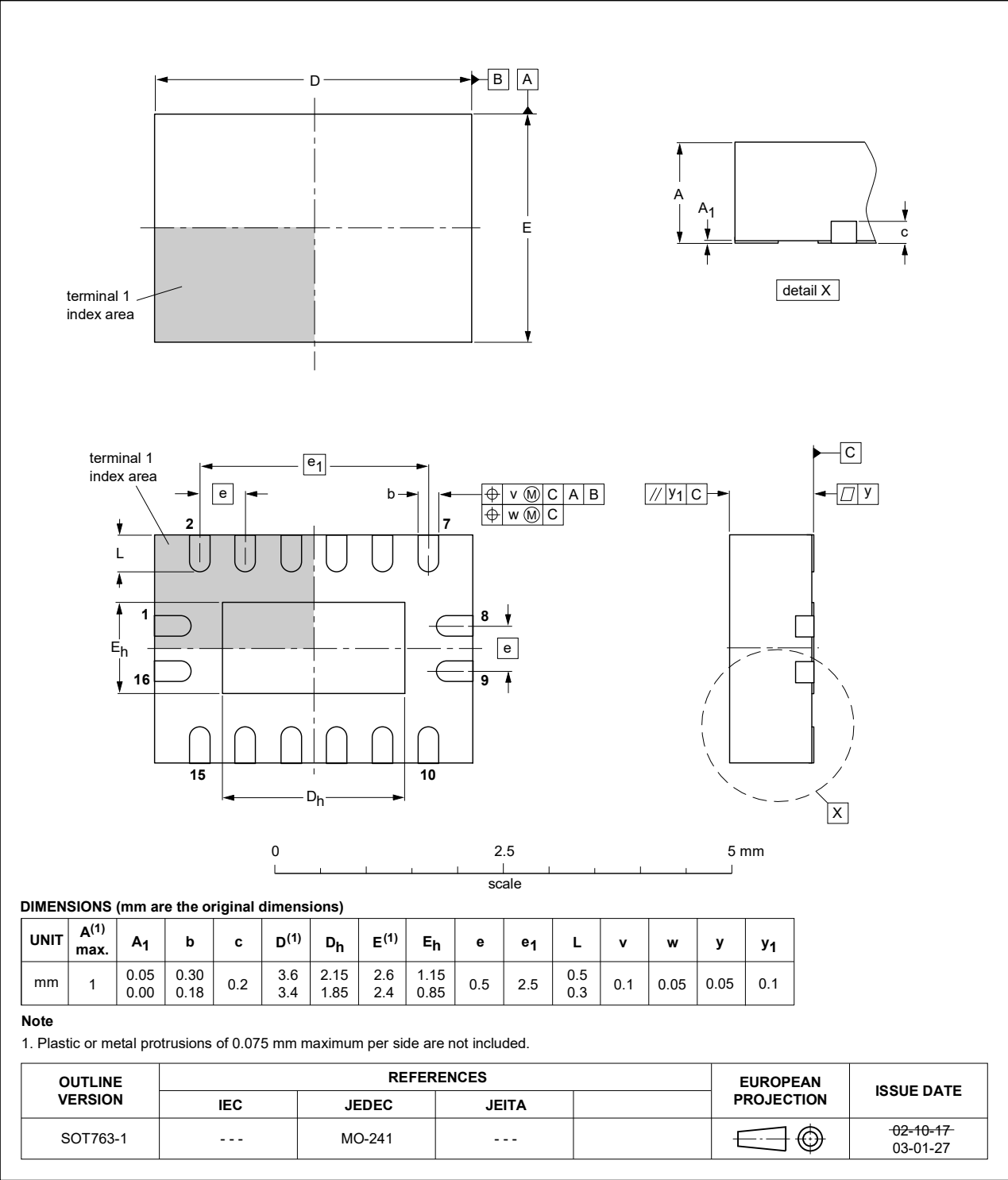


Fig. 10. Package outline SOT763-1 (DHVQFN16)

12. Abbreviations

Table 10. Abbreviations

| Acronym | Description                               |
|---------|-------------------------------------------|
| ANSI    | American National Standards Institute     |
| CDM     | Charged Device Model                      |
| CMOS    | Complementary Metal Oxide Semiconductor   |
| 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               |

13. Revision history

Table 11. Revision history

| Document ID         | Release date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data sheet status     | Change notice | Supersedes          |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------|---------------------|
| 74HC_HCT157 v.10    | 20240528                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 v.9     |
| Modifications:      | <ul style="list-style-type: none"><li><a href="#">Fig. 8</a>, <a href="#">Fig. 9</a>: Aligned SO and TSSOP package outline drawings to JEDEC MS-012 and MO-153.</li><li><a href="#">Section 2</a>: ESD specification updated according to the latest JEDEC standard.</li></ul>                                                                                                                                                                                                                          |                       |               |                     |
| 74HC_HCT157 v.9     | 20200724                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 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 number 74HC157DB and 74HCT157DB (SOT338-1/SSOP16) removed.</li><li><a href="#">Section 1</a> and <a href="#">Section 2</a> updated.</li><li><a href="#">Table 4</a>: Derating values for P<sub>tot</sub> total power dissipation have been updated.</li></ul> |                       |               |                     |
| 74HC_HCT157 v.8     | 20151228                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 v.7     |
| Modifications:      | <ul style="list-style-type: none"><li>Type numbers 74HC157N and 74HCT157N (SOT38-4) removed.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                  |                       |               |                     |
| 74HC_HCT157 v.7     | 20150121                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 v.6     |
| Modifications:      | <ul style="list-style-type: none"><li><a href="#">Table 7</a>: Power dissipation capacitance condition for 74HCT157 is corrected.</li></ul>                                                                                                                                                                                                                                                                                                                                                             |                       |               |                     |
| 74HC_HCT157 v.6     | 20120827                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 v.5     |
| Modifications:      | <ul style="list-style-type: none"><li>Package outline drawing DIP16 added.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |               |                     |
| 74HC_HCT157 v.5     | 20120425                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 v.4     |
| Modifications:      | <ul style="list-style-type: none"><li><a href="#">Fig. 5</a> updated with transition times.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                   |                       |               |                     |
| 74HC_HCT157 v.4     | 20111219                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157 v.3     |
| 74HC_HCT157 v.3     | 20101231                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74HC_HCT157_CNV v.2 |
| 74HC_HCT157_CNV v.2 | 19970827                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product specification | -             | -                   |

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| 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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