

# 74AHC139; 74AHCT139

## Dual 2-to-4 line decoder/demultiplexer

Rev. 02 — 9 May 2008

Product data sheet

## 1. General description

The 74AHC139; 74AHCT139 is a high-speed Si-gate CMOS device and is pin compatible with Low-power Schottky TTL (LSTTL). It is specified in compliance with JEDEC standard No. 7-A.

The 74AHC139; 74AHCT139 is a high-speed, dual 2-to-4 line decoder/demultiplexer. This device has two independent decoders, each accepting two binary weighted inputs ( $nA0$  and  $nA1$ ) and providing four mutually exclusive active LOW outputs ( $n\bar{Y}0$  to  $n\bar{Y}3$ ). Each decoder has an active LOW enable input ( $n\bar{E}$ ). When  $n\bar{E}$  is HIGH, every output is forced HIGH. The enable input can be used as the data input for a 1-to-4 demultiplexer application.

The 74AHC139; 74AHCT139 is identical to the HEF4556 of the HE4000B family.

## 2. Features

- Balanced propagation delays
- All inputs have Schmitt-trigger actions
- Inputs accept voltages higher than  $V_{CC}$
- Input levels:
  - ◆ For 74AHC139: CMOS level
  - ◆ For 74AHCT139: TTL level
- ESD protection:
  - ◆ HBM EIA/JESD22-A114E exceeds 2000 V
  - ◆ MM EIA/JESD22-A115-A exceeds 200 V
  - ◆ CDM EIA/JESD22-C101C exceeds 1000 V
- Multiple package options
- Specified from  $-40\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$  and from  $-40\text{ }^{\circ}\text{C}$  to  $+125\text{ }^{\circ}\text{C}$

## 3. Ordering information

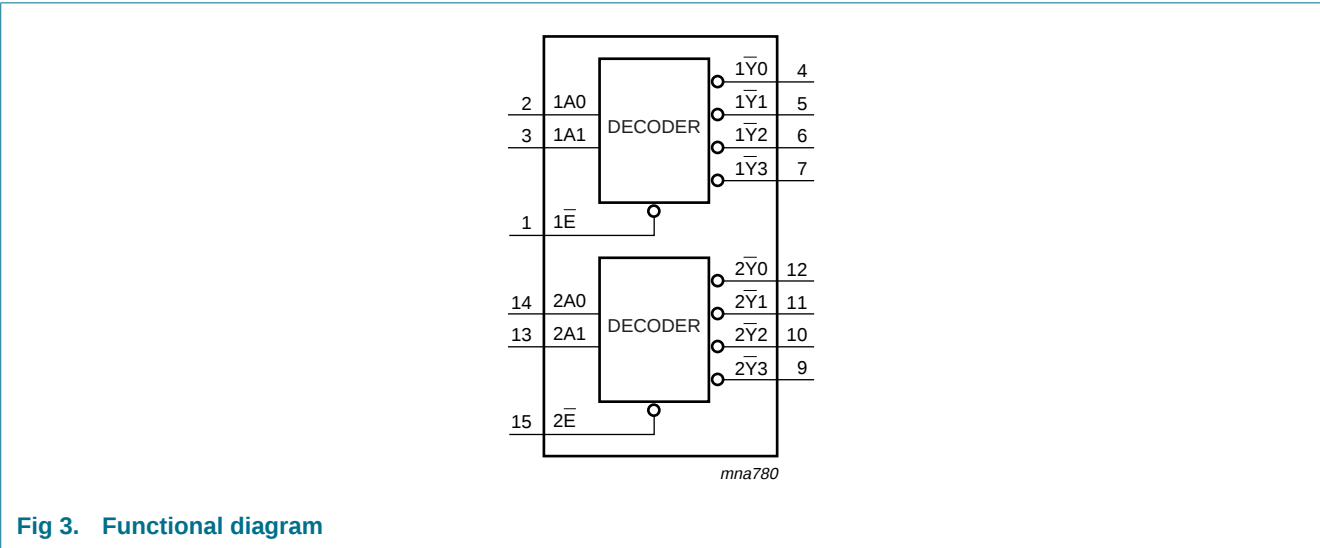
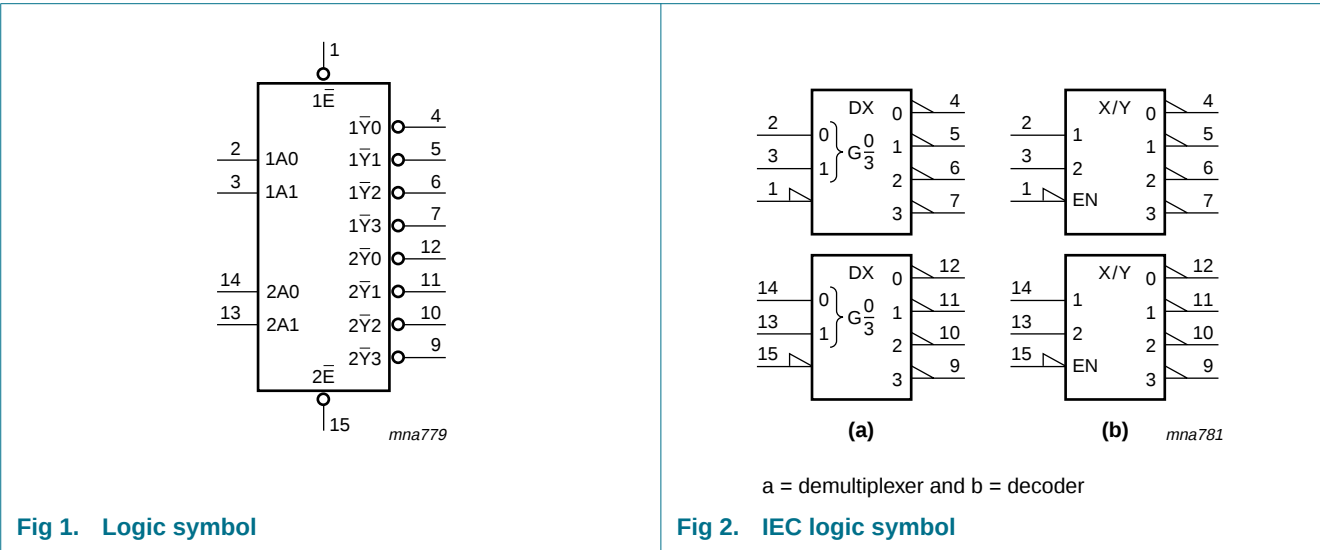
Table 1. Ordering information

| Type number     | Package                                                         |         |                                                                           |          |
|-----------------|-----------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------|
|                 | Temperature range                                               | Name    | Description                                                               | Version  |
| <b>74AHC139</b> |                                                                 |         |                                                                           |          |
| 74AHC139D       | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | SO16    | plastic small outline package; 16 leads;<br>body width 3.9 mm             | SOT109-1 |
| 74AHC139PW      | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | TSSOP16 | plastic thin shrink small outline package; 16 leads;<br>body width 4.4 mm | SOT403-1 |

Table 1. Ordering information ...continued

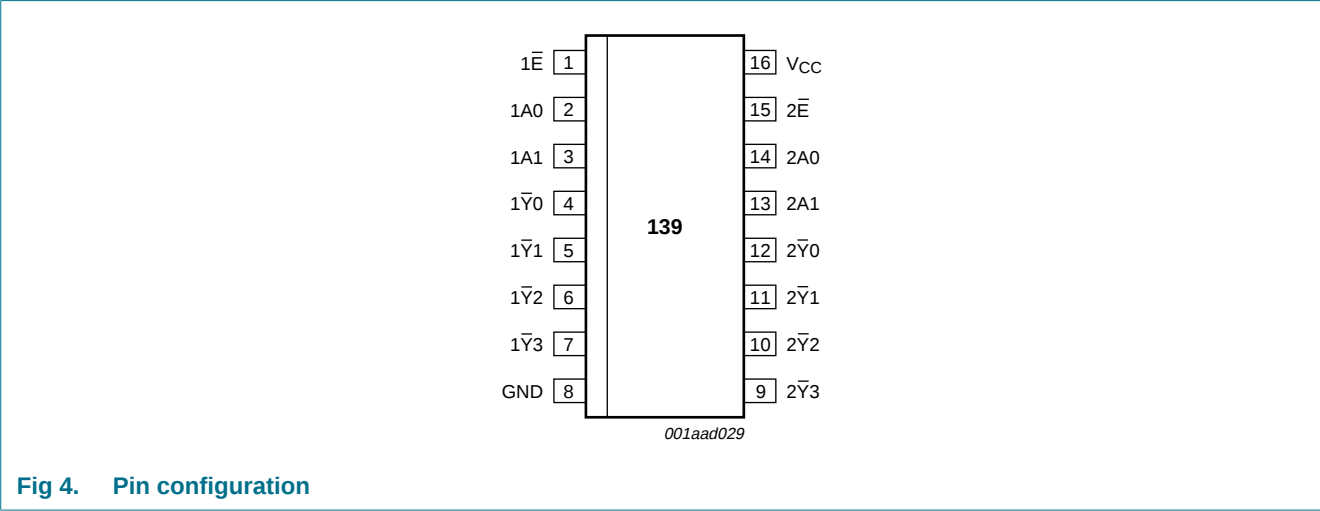
| Type number      | Package           |         |                                                                           |          |
|------------------|-------------------|---------|---------------------------------------------------------------------------|----------|
|                  | Temperature range | Name    | Description                                                               | Version  |
| <b>74AHCT139</b> |                   |         |                                                                           |          |
| 74AHCT139D       | −40 °C to +125 °C | SO16    | plastic small outline package; 16 leads;<br>body width 3.9 mm             | SOT109-1 |
| 74AHCT139PW      | −40 °C to +125 °C | TSSOP16 | plastic thin shrink small outline package; 16 leads;<br>body width 4.4 mm | SOT403-1 |

4. Functional diagram



5. Pinning information

5.1 Pinning



5.2 Pin description

Table 2. Pin description

| Symbol          | Pin | Description               |
|-----------------|-----|---------------------------|
| 1E̅             | 1   | enable input (active LOW) |
| 1A0             | 2   | address input             |
| 1A1             | 3   | address input             |
| 1Y̅0            | 4   | output                    |
| 1Y̅1            | 5   | output                    |
| 1Y̅2            | 6   | output                    |
| 1Y̅3            | 7   | output                    |
| GND             | 8   | ground (0 V)              |
| 2Y̅3            | 9   | output                    |
| 2Y̅2            | 10  | output                    |
| 2Y̅1            | 11  | output                    |
| 2Y̅0            | 12  | output                    |
| 2A1             | 13  | address input             |
| 2A0             | 14  | address input             |
| 2E̅             | 15  | enable input (active LOW) |
| V <sub>CC</sub> | 16  | supply voltage            |

## 6. Functional description

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

| Control         | Input |     | Output           |                  |                  |                  |
|-----------------|-------|-----|------------------|------------------|------------------|------------------|
| $\overline{nE}$ | nA0   | nA1 | $\overline{nY0}$ | $\overline{nY1}$ | $\overline{nY2}$ | $\overline{nY3}$ |
| H               | X     | X   | H                | H                | H                | H                |
| L               | L     | L   | L                | H                | H                | H                |
|                 | H     | L   | H                | L                | H                | H                |
|                 | L     | H   | H                | H                | L                | H                |
|                 | H     | H   | H                | H                | H                | L                |

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

## 7. Limiting values

Table 4. Limiting values

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

| Symbol    | Parameter               | Conditions                               | Min                | Max  | Unit |
|-----------|-------------------------|------------------------------------------|--------------------|------|------|
| $V_{CC}$  | supply voltage          |                                          | -0.5               | +7.0 | V    |
| $V_I$     | input voltage           |                                          | -0.5               | +7.0 | V    |
| $I_{IK}$  | input clamping current  | $V_I < -0.5$ V                           | <sup>[1]</sup> -20 | -    | mA   |
| $I_{OK}$  | output clamping current | $V_O < -0.5$ V or $V_O > V_{CC} + 0.5$ V | <sup>[1]</sup> -20 | +20  | mA   |
| $I_O$     | output current          | $V_O = -0.5$ V to $(V_{CC} + 0.5)$ V     | -25                | +25  | mA   |
| $I_{CC}$  | supply current          |                                          | -                  | +75  | mA   |
| $I_{GND}$ | ground current          |                                          | -75                | -    | mA   |
| $T_{stg}$ | storage temperature     |                                          | -65                | +150 | °C   |
| $P_{tot}$ | total power dissipation | $T_{amb} = -40$ °C to +125 °C            | <sup>[2]</sup> -   | 500  | mW   |

- [1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
[2] For SO16 packages: above 70 °C the value of  $P_{tot}$  derates linearly at 8 mW/K.  
For TSSOP16 packages: above 60 °C the value of  $P_{tot}$  derates linearly at 5.5 mW/K.

## 8. Recommended operating conditions

Table 5. Operating conditions

| Symbol           | Parameter                           | Conditions                       | Min | Typ | Max             | Unit |
|------------------|-------------------------------------|----------------------------------|-----|-----|-----------------|------|
| 74AHC139         |                                     |                                  |     |     |                 |      |
| V <sub>CC</sub>  | supply voltage                      |                                  | 2.0 | 5.0 | 5.5             | V    |
| V <sub>I</sub>   | input voltage                       |                                  | 0   | -   | 5.5             | V    |
| V <sub>O</sub>   | output voltage                      |                                  | 0   | -   | V <sub>CC</sub> | V    |
| T <sub>amb</sub> | ambient temperature                 |                                  | −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              | ns/V |
| 74AHCT139        |                                     |                                  |     |     |                 |      |
| V <sub>CC</sub>  | supply voltage                      |                                  | 4.5 | 5.0 | 5.5             | V    |
| V <sub>I</sub>   | input voltage                       |                                  | 0   | -   | 5.5             | V    |
| V <sub>O</sub>   | output voltage                      |                                  | 0   | -   | V <sub>CC</sub> | V    |
| T <sub>amb</sub> | ambient temperature                 |                                  | −40 | +25 | +125            | °C   |
| Δt/ΔV            | input transition rise and fall rate | V <sub>CC</sub> = 4.5 V to 5.5 V | -   | -   | 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  |      |
| 74AHC139        |                           |                                                     |       |     |      |                  |      |                   |      |      |
| 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  | -   | -    | 3.80             | -    | 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>O</sub> = 8.0 mA; V <sub>CC</sub> = 4.5 V    | -     | -   | 0.36 | -                | 0.44 | -                 | 0.55 | V    |

**Table 6.** Static characteristics ...continued

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  |               |
| $I_I$            | input leakage current     | $V_I = 5.5 \text{ V}$ or GND;<br>$V_{CC} = 0 \text{ V}$ to 5.5 V                                                                                | -     | -   | 0.1  | -                | 1.0  | -                 | 2.0  | $\mu\text{A}$ |
| $I_{CC}$         | supply current            | $V_I = V_{CC}$ or GND; $I_O = 0 \text{ A}$ ;<br>$V_{CC} = 5.5 \text{ V}$                                                                        | -     | -   | 4.0  | -                | 40   | -                 | 80   | $\mu\text{A}$ |
| $C_I$            | input capacitance         | $V_I = V_{CC}$ or GND                                                                                                                           | -     | 3   | 10   | -                | 10   | -                 | 10   | pF            |
| $C_O$            | output capacitance        |                                                                                                                                                 | -     | 4   | -    | -                | -    | -                 | -    | pF            |
| <b>74AHCT139</b> |                           |                                                                                                                                                 |       |     |      |                  |      |                   |      |               |
| $V_{IH}$         | HIGH-level input voltage  | $V_{CC} = 4.5 \text{ V}$ to 5.5 V                                                                                                               | 2.0   | -   | -    | 2.0              | -    | 2.0               | -    | V             |
| $V_{IL}$         | LOW-level input voltage   | $V_{CC} = 4.5 \text{ V}$ to 5.5 V                                                                                                               | -     | -   | 0.8  | -                | 0.8  | -                 | 0.8  | V             |
| $V_{OH}$         | HIGH-level output voltage | $V_I = V_{IH}$ or $V_{IL}$ ; $V_{CC} = 4.5 \text{ V}$<br>$I_O = -50 \mu\text{A}$                                                                | 4.4   | 4.5 | -    | 4.4              | -    | 4.4               | -    | V             |
|                  |                           | $I_O = -8.0 \text{ mA}$                                                                                                                         | 3.94  | -   | -    | 3.80             | -    | 3.70              | -    | V             |
|                  |                           |                                                                                                                                                 |       |     |      |                  |      |                   |      |               |
| $V_{OL}$         | LOW-level output voltage  | $V_I = V_{IH}$ or $V_{IL}$ ; $V_{CC} = 4.5 \text{ V}$<br>$I_O = 50 \mu\text{A}$                                                                 | -     | 0   | 0.1  | -                | 0.1  | -                 | 0.1  | V             |
|                  |                           | $I_O = 8.0 \text{ mA}$                                                                                                                          | -     | -   | 0.36 | -                | 0.44 | -                 | 0.55 | V             |
|                  |                           |                                                                                                                                                 |       |     |      |                  |      |                   |      |               |
| $I_I$            | input leakage current     | $V_I = 5.5 \text{ V}$ or GND;<br>$V_{CC} = 0 \text{ V}$ to 5.5 V                                                                                | -     | -   | 0.1  | -                | 1.0  | -                 | 2.0  | $\mu\text{A}$ |
| $I_{CC}$         | supply current            | $V_I = V_{CC}$ or GND; $I_O = 0 \text{ A}$ ;<br>$V_{CC} = 5.5 \text{ V}$                                                                        | -     | -   | 4.0  | -                | 40   | -                 | 80   | $\mu\text{A}$ |
| $\Delta I_{CC}$  | additional supply current | per input pin;<br>$V_I = V_{CC} - 2.1 \text{ V}$ ; other pins<br>at $V_{CC}$ or GND; $I_O = 0 \text{ A}$ ;<br>$V_{CC} = 4.5 \text{ V}$ to 5.5 V | -     | -   | 1.35 | -                | 1.5  | -                 | 1.5  | mA            |
| $C_I$            | input capacitance         | $V_I = V_{CC}$ or GND                                                                                                                           | -     | 3   | 10   | -                | 10   | -                 | 10   | pF            |
| $C_O$            | output capacitance        |                                                                                                                                                 | -     | 4   | -    | -                | -    | -                 | -    | pF            |

## 10. Dynamic characteristics

**Table 7. Dynamic characteristics**

Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 7](#).

| Symbol | Parameter | Conditions | 25 °C |                    |     | –40 °C to +85 °C |     | –40 °C to +125 °C |     | Unit |
|--------|-----------|------------|-------|--------------------|-----|------------------|-----|-------------------|-----|------|
|        |           |            | Min   | Typ <sup>[1]</sup> | Max | Min              | Max | Min               | Max |      |

|                 |                               |                                                                           |   |     |      |     |      |     |      |    |
|-----------------|-------------------------------|---------------------------------------------------------------------------|---|-----|------|-----|------|-----|------|----|
| <b>74AHC139</b> |                               |                                                                           |   |     |      |     |      |     |      |    |
| $t_{pd}$        | propagation delay             | nAn to n $\bar{Y}$ n; see <a href="#">Figure 5</a> <sup>[2]</sup>         |   |     |      |     |      |     |      |    |
|                 |                               | $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$                                |   |     |      |     |      |     |      |    |
|                 |                               | $C_L = 15 \text{ pF}$                                                     | - | 5.5 | 11.0 | 1.0 | 13.0 | 1.0 | 14.0 | ns |
|                 |                               | $C_L = 50 \text{ pF}$                                                     | - | 7.9 | 14.5 | 1.0 | 16.5 | 1.0 | 18.5 | ns |
|                 |                               | $V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$                                |   |     |      |     |      |     |      |    |
|                 |                               | $C_L = 15 \text{ pF}$                                                     | - | 3.9 | 7.2  | 1.0 | 8.5  | 1.0 | 9.0  | ns |
|                 |                               | $C_L = 50 \text{ pF}$                                                     | - | 5.6 | 9.2  | 1.0 | 10.5 | 1.0 | 11.5 | ns |
|                 |                               | n $\bar{E}$ to n $\bar{Y}$ n; see <a href="#">Figure 6</a> <sup>[2]</sup> |   |     |      |     |      |     |      |    |
|                 |                               | $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$                                |   |     |      |     |      |     |      |    |
|                 |                               | $C_L = 15 \text{ pF}$                                                     | - | 4.8 | 9.2  | 1.0 | 11.0 | 1.0 | 11.5 | ns |
|                 |                               | $C_L = 50 \text{ pF}$                                                     | - | 6.9 | 12.7 | 1.0 | 14.5 | 1.0 | 16.0 | ns |
|                 |                               | $V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$                                |   |     |      |     |      |     |      |    |
|                 |                               | $C_L = 15 \text{ pF}$                                                     | - | 3.4 | 6.3  | 1.0 | 7.5  | 1.0 | 8.0  | ns |
|                 |                               | $C_L = 50 \text{ pF}$                                                     | - | 4.9 | 8.3  | 1.0 | 9.5  | 1.0 | 10.5 | ns |
| $C_{PD}$        | power dissipation capacitance | $f_i = 1 \text{ MHz}; V_i = \text{GND to } V_{CC}$ <sup>[3]</sup>         | - | 26  | -    | -   | -    | -   | -    | pF |

|                                                                         |                               |                                                                           |   |     |     |     |      |     |      |    |
|-------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------|---|-----|-----|-----|------|-----|------|----|
| <b>74AHCT139; <math>V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}</math></b> |                               |                                                                           |   |     |     |     |      |     |      |    |
| $t_{pd}$                                                                | propagation delay             | nAn to n $\bar{Y}$ n; see <a href="#">Figure 5</a> <sup>[2]</sup>         |   |     |     |     |      |     |      |    |
|                                                                         |                               | $C_L = 15 \text{ pF}$                                                     | - | 4.7 | 7.2 | 1.0 | 8.5  | 1.0 | 9.0  | ns |
|                                                                         |                               | $C_L = 50 \text{ pF}$                                                     | - | 6.5 | 9.2 | 1.0 | 10.5 | 1.0 | 11.5 | ns |
|                                                                         |                               | n $\bar{E}$ to n $\bar{Y}$ n; see <a href="#">Figure 6</a> <sup>[2]</sup> |   |     |     |     |      |     |      |    |
|                                                                         |                               | $C_L = 15 \text{ pF}$                                                     | - | 3.6 | 6.3 | 1.0 | 7.5  | 1.0 | 8.0  | ns |
|                                                                         |                               | $C_L = 50 \text{ pF}$                                                     | - | 5.2 | 8.3 | 1.0 | 9.5  | 1.0 | 10.5 | ns |
| $C_{PD}$                                                                | power dissipation capacitance | $f_i = 1 \text{ MHz}; V_i = \text{GND to } V_{CC}$ <sup>[3]</sup>         | - | 23  | -   | -   | -    | -   | -    | pF |

[1] Typical values are measured at nominal supply voltage ( $V_{CC} = 3.3 \text{ V}$  and  $V_{CC} = 5.0 \text{ V}$ ).

[2]  $t_{pd}$  is the same as  $t_{PLH}$  and  $t_{PHL}$ .

[3]  $C_{PD}$  is used to determine the dynamic power dissipation ( $P_D$  in  $\mu\text{W}$ ).

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

$f_i$  = input frequency in MHz;

$f_o$  = output frequency in MHz;

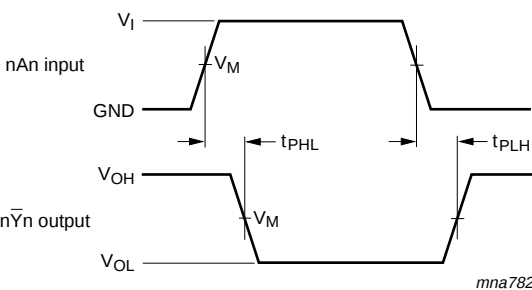
$C_L$  = output load capacitance in pF;

$V_{CC}$  = supply voltage in V;

$N$  = number of inputs switching;

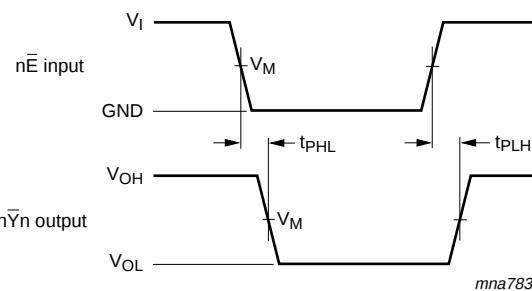
$\Sigma(C_L \times V_{CC}^2 \times f_o)$  = sum of the outputs.

11. Waveforms



Measurement points are given in [Table 8](#).  
 $V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

**Fig 5. Address input to output propagation delays**

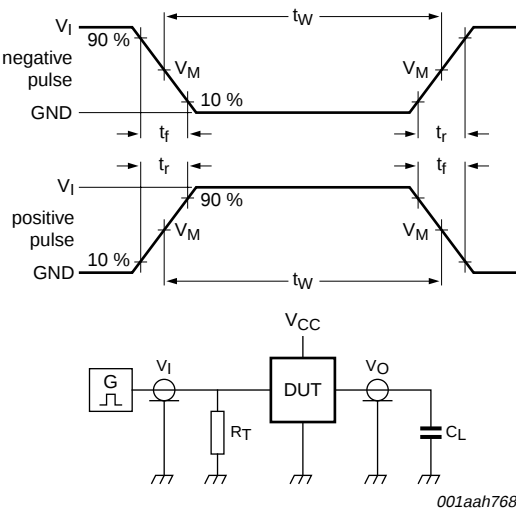


Measurement points are given in [Table 8](#).  
 $V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

**Fig 6. Enable input to output propagation delays**

**Table 8. Measurement points**

| Type      | Input               | Output              |
|-----------|---------------------|---------------------|
|           | $V_M$               | $V_M$               |
| 74AHC139  | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |
| 74AHCT139 | 1.5 V               | $0.5 \times V_{CC}$ |



Test data is given in [Table 9](#).  
Definitions test circuit:  
 $R_T$  = termination resistance should be equal to output impedance  $Z_o$  of the pulse generator.  
 $C_L$  = load capacitance including jig and probe capacitance.

Fig 7. Load circuitry for measuring switching times

Table 9. Test data

| Type      | Input    |                       | Load         | Test               |
|-----------|----------|-----------------------|--------------|--------------------|
|           | $V_I$    | $t_r, t_f$            | $C_L$        |                    |
| 74AHC139  | $V_{CC}$ | $\leq 3.0 \text{ ns}$ | 15 pF, 50 pF | $t_{PLH}, t_{PHL}$ |
| 74AHCT139 | 3.0 V    | $\leq 3.0 \text{ ns}$ | 15 pF, 50 pF | $t_{PLH}, t_{PHL}$ |

12. Package outline

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

SOT109-1

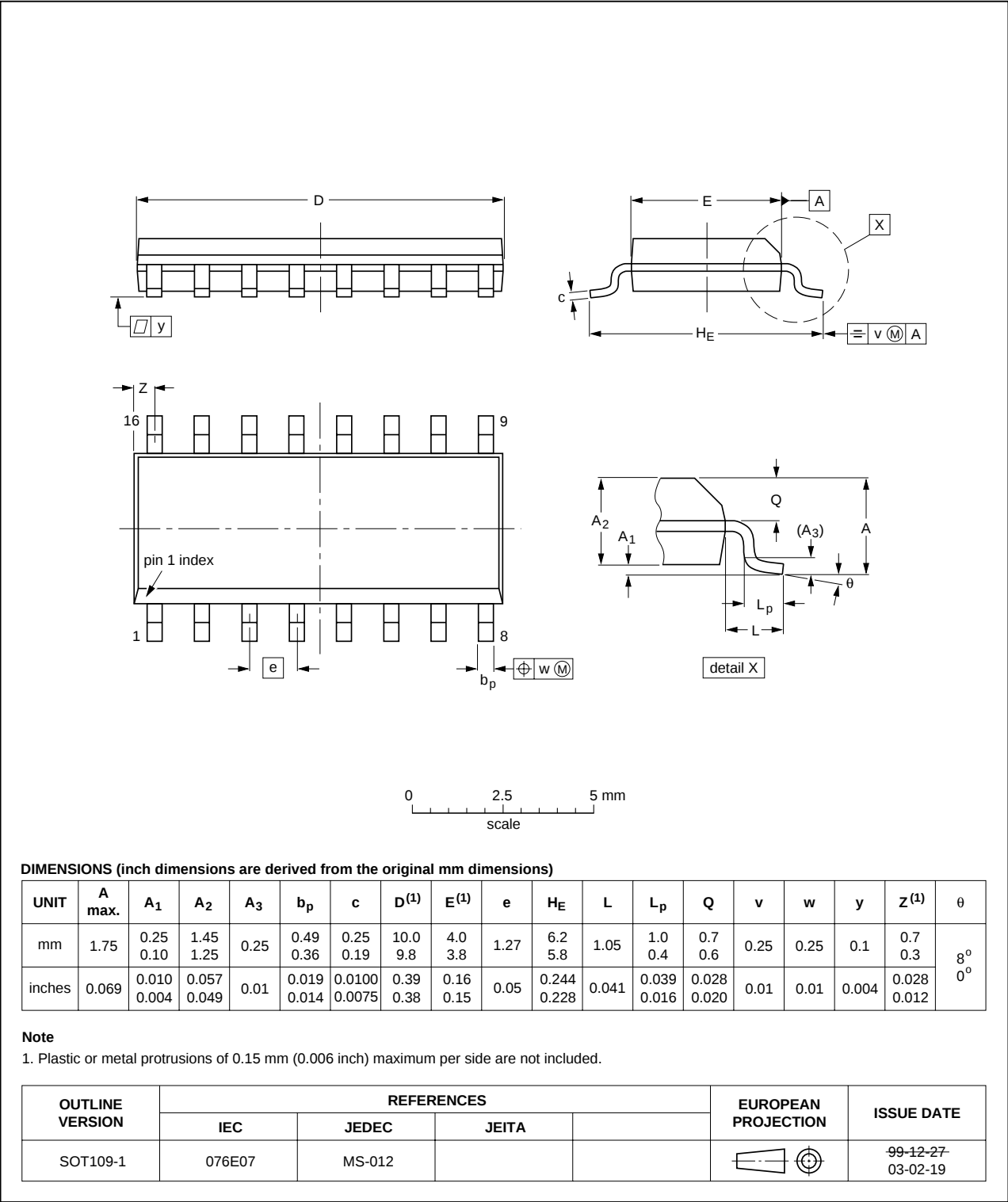


Fig 8. Package outline SOT109-1 (SO16)

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

SOT403-1

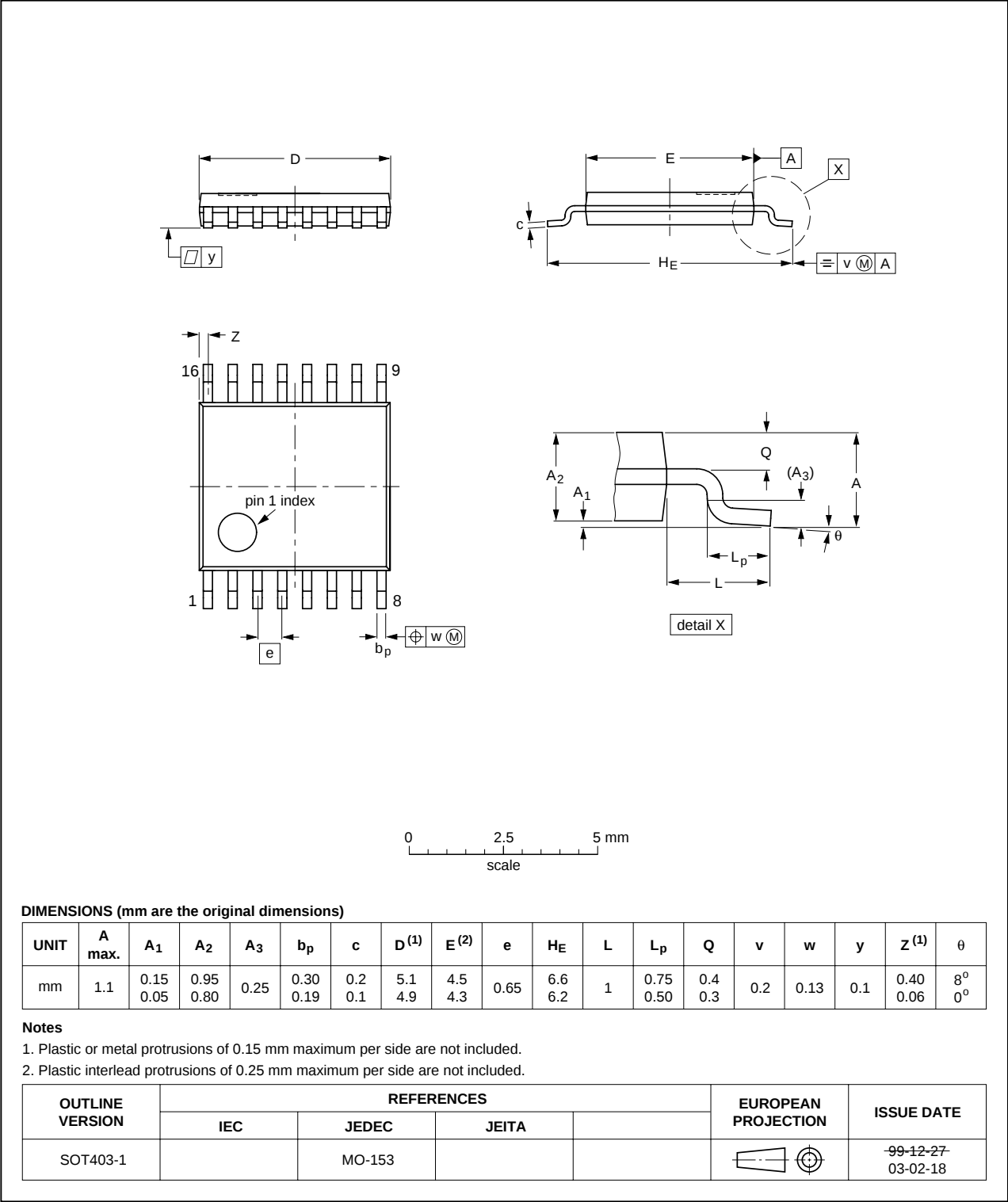


Fig 9. Package outline SOT403-1 (TSSOP16)

## 13. 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                               |
| LSTTL   | Low-power Schottky Transistor-Transistor Logic |
| MM      | Machine Model                                  |

## 14. Revision history

Table 11. Revision history

| Document ID     | Release date                                                                                                                                                                                                                                                                                                                                            | Data sheet status     | Change notice | Supersedes      |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------|-----------------|
| 74AHC_AHCT139_2 | 20080509                                                                                                                                                                                                                                                                                                                                                | Product data sheet    | -             | 74AHC_AHCT139_1 |
| Modifications:  | <ul style="list-style-type: none"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.</li><li>• Legal texts have been adapted to the new company name where appropriate.</li><li>• <a href="#">Table 6</a>: the conditions for input leakage current have been changed.</li></ul> |                       |               |                 |
| 74AHC_AHCT139_1 | 19990901                                                                                                                                                                                                                                                                                                                                                | Product specification | -             | -               |

## 15. Legal information

### 15.1 Data sheet status

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

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

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

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

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