# 74HC125; 74HCT125

## Quad buffer/line driver; 3-state

Rev. 6 — 1 December 2015 Product data sheet

## 1. General description

The 74HC125; 74HCT125 is a quad buffer/line driver with 3-state outputs controlled by the output enable inputs ($n\overline{OE}$). A HIGH on $n\overline{OE}$ causes the outputs to assume a high impedance OFF-state. 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

- Complies with JEDEC standard no. 7A
- Input levels:
  - The 74HC125: CMOS levels
  - The 74HCT125: TTL levels
- ESD protection:
  - HBM JESD22-A114F exceeds 2000 V
  - MM JESD22-A115-A exceeds 200 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 |
| 74HC125D | −40 °C to +125 °C | SO14 | plastic small outline package; 14 leads; body width 3.9 mm | SOT108-1 |
| 74HCT125D | | | | |
| 74HC125DB | −40 °C to +125 °C | SSOP14 | plastic shrink small outline package; 14 leads; body width 5.3 mm | SOT337-1 |
| 74HCT125DB | | | | |
| 74HC125PW | −40 °C to +125 °C | TSSOP14 | plastic thin shrink small outline package; 14 leads; body width 4.4 mm | SOT402-1 |
| 74HCT125PW | | | | |

## 4. Functional diagram

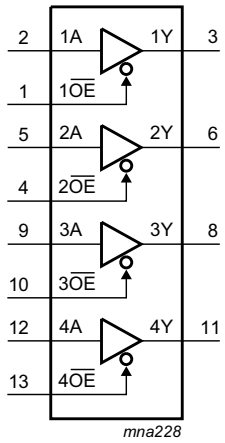


Fig 1. Logic symbol

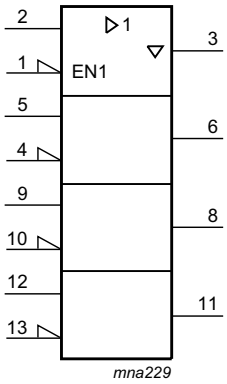


Fig 2. IEC logic symbol

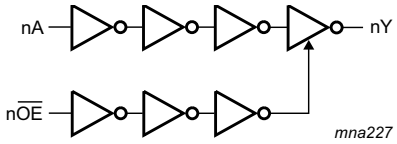


Fig 3. Logic diagram (one buffer)

## 5. Pinning information

### 5.1 Pinning

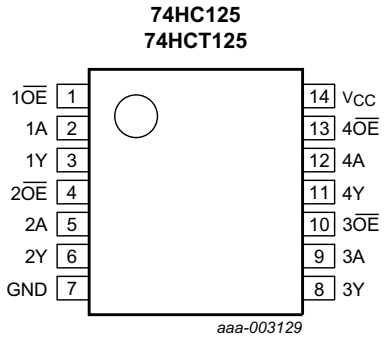


Fig 4. Pin configuration SO14 and (T)SSOP14


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### 5.2 Pin description

**Table 2. Pin description**

| Symbol | Pin | Description |
|---|---|---|
| $1\overline{OE}$, $2\overline{OE}$, $3\overline{OE}$, $4\overline{OE}$ | 1, 4, 10, 13 | output enable input (active LOW) |
| 1A, 2A, 3A, 4A | 2, 5, 9, 12 | data input |
| 1Y, 2Y, 3Y, 4Y | 3, 6, 8, 11 | data output |
| GND | 7 | ground (0 V) |
| $V_{CC}$ | 14 | supply voltage |

## 6. Functional description

**Table 3. Function table[1]**

| Control | Input | Output |
|---|---|---|
| **$n\overline{OE}$** | **nA** | **nY** |
| L | L | L |
| | H | H |
| H | X | Z |

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

## 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 | V |
| $I_{IK}$ | input clamping current | $V_I < -0.5$ V or $V_I > V_{CC} + 0.5$ V [1] | - | ±20 | mA |
| $I_{OK}$ | output clamping current | $V_O < -0.5$ V or $V_O > V_{CC} + 0.5$ V [1] | - | ±20 | mA |
| $I_O$ | output current | $V_O = -0.5$ V to $(V_{CC} + 0.5$ V) | - | ±35 | mA |
| $I_{CC}$ | supply current | | - | +70 | mA |
| $I_{GND}$ | ground current | | - | −70 | mA |
| $T_{stg}$ | storage temperature | | −65 | +150 | °C |
| $P_{tot}$ | total power dissipation | SO14 and (T)SSOP14 packages [2] | - | 500 | mW |

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

[2] For SO14 package: $P_{tot}$ derates linearly with 8 mW/K above 70 °C.
For (T)SSOP14 packages: $P_{tot}$ derates linearly with 5.5 mW/K above 60 °C.


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## 8. Recommended operating conditions

**Table 5. Recommended operating conditions**

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

| Symbol | Parameter | Conditions | 74HC125 | | | 74HCT125 | | | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Typ | Max | |
| $V_{CC}$ | supply voltage | | 2.0 | 5.0 | 6.0 | 4.5 | 5.0 | 5.5 | V |
| $V_I$ | input voltage | | 0 | - | $V_{CC}$ | 0 | - | $V_{CC}$ | V |
| $V_O$ | output voltage | | 0 | - | $V_{CC}$ | 0 | - | $V_{CC}$ | V |
| $T_{amb}$ | ambient temperature | | –40 | +25 | +125 | –40 | +25 | +125 | °C |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CC}$ = 2.0 V | - | - | 625 | - | - | - | ns/V |
| | | $V_{CC}$ = 4.5 V | - | 1.67 | 139 | - | 1.67 | 139 | ns/V |
| | | $V_{CC}$ = 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 | 25 °C | | | –40 °C to +85 °C | | –40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| **74HC125** | | | | | | | | | | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC}$ = 2.0 V | 1.5 | 1.2 | - | 1.5 | - | 1.5 | - | V |
| | | $V_{CC}$ = 4.5 V | 3.15 | 2.4 | - | 3.15 | - | 3.15 | - | V |
| | | $V_{CC}$ = 6.0 V | 4.2 | 3.2 | - | 4.2 | - | 4.2 | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC}$ = 2.0 V | - | 0.8 | 0.5 | - | 0.5 | - | 0.5 | V |
| | | $V_{CC}$ = 4.5 V | - | 2.1 | 1.35 | - | 1.35 | - | 1.35 | V |
| | | $V_{CC}$ = 6.0 V | - | 2.8 | 1.8 | - | 1.8 | - | 1.8 | V |
| $V_{OH}$ | HIGH-level output voltage | $V_I$ = $V_{IH}$ or $V_{IL}$ | | | | | | | | |
| | | $I_O$ = –20 μA; $V_{CC}$ = 2.0 V | 1.9 | 2.0 | - | 1.9 | - | 1.9 | - | V |
| | | $I_O$ = –20 μA; $V_{CC}$ = 4.5 V | 4.4 | 4.5 | - | 4.4 | - | 4.4 | - | V |
| | | $I_O$ = –20 μA; $V_{CC}$ = 6.0 V | 5.9 | 6.0 | - | 5.9 | - | 5.9 | - | V |
| | | $I_O$ = –6.0 mA; $V_{CC}$ = 4.5 V | 3.98 | 4.32 | - | 3.84 | - | 3.7 | - | V |
| | | $I_O$ = –7.8 mA; $V_{CC}$ = 6.0 V | 5.48 | 5.81 | - | 5.34 | - | 5.2 | - | V |
| $V_{OL}$ | LOW-level output voltage | $V_I$ = $V_{IH}$ or $V_{IL}$ | | | | | | | | |
| | | $I_O$ = 20 μA; $V_{CC}$ = 2.0 V | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O$ = 20 μA; $V_{CC}$ = 4.5 V | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O$ = 20 μA; $V_{CC}$ = 6.0 V | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O$ = 6.0 mA; $V_{CC}$ = 4.5 V | - | 0.15 | 0.26 | - | 0.33 | - | 0.4 | V |
| | | $I_O$ = 7.8 mA; $V_{CC}$ = 6.0 V | - | 0.16 | 0.26 | - | 0.33 | - | 0.4 | V |
| $I_I$ | input leakage current | $V_I$ = $V_{CC}$ or GND; $V_{CC}$ = 6.0 V | - | - | ±0.1 | - | ±1.0 | - | ±1.0 | μA |
| $I_{OZ}$ | OFF-state output current | $V_I$ = $V_{IH}$ or $V_{IL}$; $V_O$ = $V_{CC}$ or GND; $V_{CC}$ = 6.0 V | - | - | ±0.5 | - | ±5.0 | - | ±10.0 | μA |


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**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 | |
| $I_{CC}$ | supply current | $V_I = V_{CC}$ or GND; $I_O = 0$ A; $V_{CC} = 6.0$ V | - | - | 8.0 | - | 80 | - | 160 | µA |
| $C_I$ | input capacitance | | - | 3.5 | - | - | - | - | - | pF |
| **74HCT125** | | | | | | | | | | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC} = 4.5$ V to 5.5 V | 2.0 | 1.6 | - | 2.0 | - | 2.0 | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC} = 4.5$ V to 5.5 V | - | 1.2 | 0.8 | - | 0.8 | - | 0.8 | V |
| $V_{OH}$ | HIGH-level output voltage | $V_I = V_{IH}$ or $V_{IL}$; $V_{CC} = 4.5$ V | | | | | | | | |
| | | $I_O = -20$ µA | 4.4 | 4.5 | - | 4.4 | - | 4.4 | - | V |
| | | $I_O = -6$ mA | 3.98 | 4.32 | - | 3.84 | - | 3.7 | - | V |
| $V_{OL}$ | LOW-level output voltage | $V_I = V_{IH}$ or $V_{IL}$; $V_{CC} = 4.5$ V | | | | | | | | |
| | | $I_O = 20$ µA | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O = 6.0$ mA | - | 0.16 | 0.26 | - | 0.33 | - | 0.4 | V |
| $I_I$ | input leakage current | $V_I = V_{CC}$ or GND; $V_{CC} = 5.5$ V | - | - | ±0.1 | - | ±1.0 | - | ±1.0 | µA |
| $I_{OZ}$ | OFF-state output current | $V_I = V_{IH}$ or $V_{IL}$; $V_{CC} = 5.5$ V; $V_O = V_{CC}$ or GND | - | - | ±0.5 | - | ±5.0 | - | ±10 | µA |
| $I_{CC}$ | supply current | $V_I = V_{CC}$ or GND; $I_O = 0$ A; $V_{CC} = 5.5$ V | - | - | 8.0 | - | 80 | - | 160 | µA |
| $\Delta I_{CC}$ | additional supply current | per input pin; $V_I = V_{CC} - 2.1$ V; $I_O = 0$ A; other inputs at $V_{CC}$ or GND; $V_{CC} = 4.5$ V to 5.5 V | - | 100 | 360 | - | 450 | - | 490 | µA |
| $C_I$ | input capacitance | | - | 3.5 | - | - | - | - | - | pF |


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## 10. Dynamic characteristics

**Table 7. Dynamic characteristics**

*Voltages are referenced to GND (ground = 0 V); $C_L$ = 50 pF unless otherwise specified; for test circuit see Figure 7.*

| Symbol | Parameter | Conditions | 25 °C | | | –40 °C to +85 °C | | –40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| **74HC125** | | | | | | | | | | |
| $t_{pd}$ | propagation delay | nA to nY; see Figure 5 [1] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 30 | 100 | - | 125 | - | 150 | ns |
| | | $V_{CC}$ = 4.5 V | - | 11 | 20 | - | 25 | - | 30 | ns |
| | | $V_{CC}$ = 5 V; $C_L$ = 15 pF | - | 9 | - | - | - | - | - | ns |
| | | $V_{CC}$ = 6.0 V | - | 9 | 17 | - | 21 | - | 26 | ns |
| $t_{en}$ | enable time | $n\overline{OE}$ to nY; see Figure 6 [2] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 41 | 125 | - | 155 | - | 190 | ns |
| | | $V_{CC}$ = 4.5 V | - | 15 | 25 | - | 31 | - | 38 | ns |
| | | $V_{CC}$ = 6.0 V | - | 12 | 21 | - | 26 | - | 32 | ns |
| $t_{dis}$ | disable time | $n\overline{OE}$ to nY; see Figure 6 [3] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 41 | 125 | - | 155 | - | 190 | ns |
| | | $V_{CC}$ = 4.5 V | - | 15 | 25 | - | 31 | - | 38 | ns |
| | | $V_{CC}$ = 6.0 V | - | 12 | 21 | - | 26 | - | 32 | ns |
| $t_t$ | transition time | nY; see Figure 5 [4] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 14 | 60 | - | 75 | - | 90 | ns |
| | | $V_{CC}$ = 4.5 V | - | 5 | 12 | - | 15 | - | 18 | ns |
| | | $V_{CC}$ = 6.0 V | - | 4 | 10 | - | 13 | - | 15 | ns |
| $C_{PD}$ | power dissipation capacitance | $C_L$ = 50 pF; f = 1 MHz; $V_I$ = GND to $V_{CC}$ [5] | - | 22 | - | - | - | - | - | pF |


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**Table 7. Dynamic characteristics** *...continued*

*Voltages are referenced to GND (ground = 0 V); $C_L$ = 50 pF unless otherwise specified; for test circuit see Figure 7.*

| Symbol | Parameter | Conditions | 25 °C | | | –40 °C to +85 °C | | –40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| **74HCT125** | | | | | | | | | | |
| $t_{pd}$ | propagation delay | nA to nY; see Figure 5 [1] | | | | | | | | |
| | | $V_{CC}$ = 4.5 V | - | 15 | 25 | - | 31 | - | 38 | ns |
| | | $V_{CC}$ = 5 V; $C_L$ = 15 pF | - | 12 | - | - | - | - | - | ns |
| $t_{en}$ | enable time | $n\overline{OE}$ to nY; see Figure 6 [2] | | | | | | | | |
| | | $V_{CC}$ = 4.5 V | - | 15 | 28 | - | 35 | - | 42 | ns |
| $t_{dis}$ | disable time | $n\overline{OE}$ to nY; see Figure 6 [3] | | | | | | | | |
| | | $V_{CC}$ = 4.5 V | - | 15 | 25 | - | 31 | - | 38 | ns |
| $t_t$ | transition time | nY; see Figure 5 [4] | - | 5 | 12 | - | 15 | - | 18 | ns |
| $C_{PD}$ | power dissipation capacitance | $C_L$ = 50 pF; f = 1 MHz; $V_I$ = GND to $V_{CC}$ − 1.5 V [5] | - | 24 | - | - | - | - | - | pF |

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

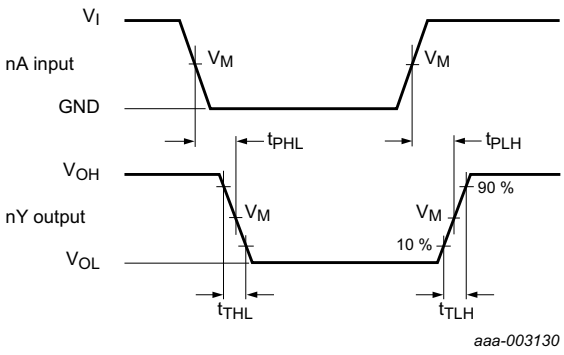
[2] $t_{en}$ is the same as $t_{PZH}$ and $t_{PZL}$.

[3] $t_{dis}$ is the same as $t_{PLZ}$ and $t_{PHZ}$.

[4] $t_t$ is the same as $t_{THL}$ and $t_{TLH}$.

[5] $C_{PD}$ is used to determine the dynamic power dissipation ($P_D$ 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:
$f_i$ = 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 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. Propagation delay input (nA) to output (nY)**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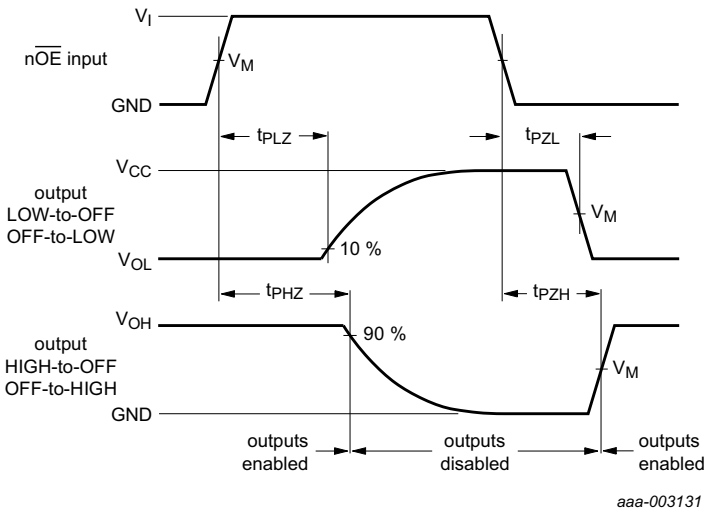


Measurement points are given in Table 8.

$V_{OL}$ and $V_{OH}$ are typical voltage output levels that occur with the output load.

**Fig 6. Enable and disable times**

**Table 8. Measurement points**

| Type | Input | Output |
|---|---|---|
| | $V_M$ | $V_M$ |
| 74HC125 | $0.5V_{CC}$ | $0.5V_{CC}$ |
| 74HCT125 | 1.3 V | 1.3 V |


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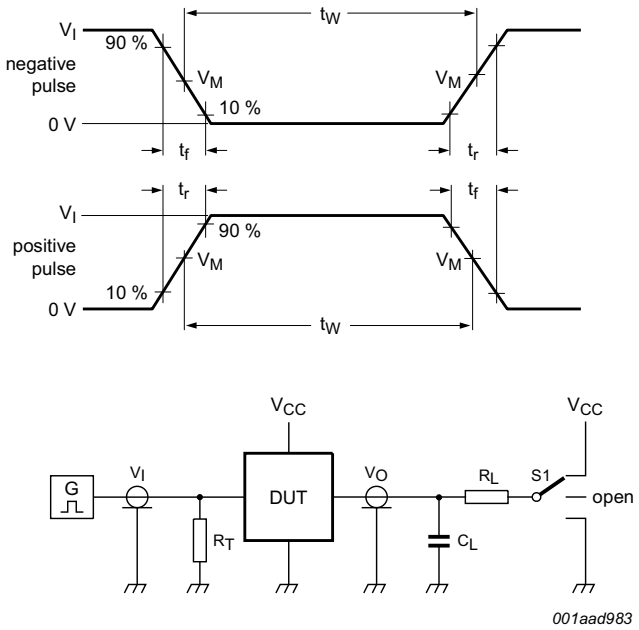


Test data is given in Table 9.

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.

$R_L$ = Load resistance.

S1 = Test selection switch.

**Fig 7. Test circuit for measuring switching times**

**Table 9. Test data**

| Type | Input | | Load | | S1 position | | |
|---|---|---|---|---|---|---|---|
| | $V_I$ | $t_r$, $t_f$ | $C_L$ | $R_L$ | $t_{PHL}$, $t_{PLH}$ | $t_{PZH}$, $t_{PHZ}$ | $t_{PZL}$, $t_{PLZ}$ |
| 74HC125 | $V_{CC}$ | 6 ns | 15 pF, 50 pF | 1 kΩ | open | GND | $V_{CC}$ |
| 74HCT125 | 3 V | 6 ns | 15 pF, 50 pF | 1 kΩ | open | GND | $V_{CC}$ |


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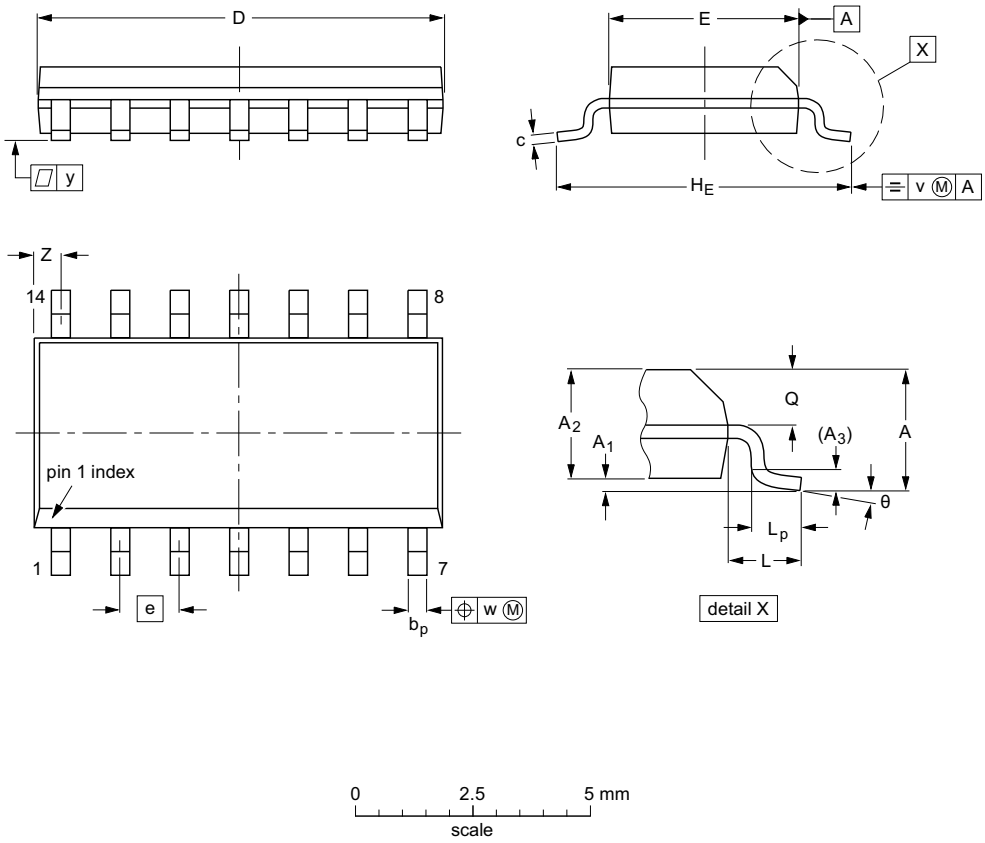
## 12. Package outline

**SO14: plastic small outline package; 14 leads; body width 3.9 mm** **SOT108-1**




**DIMENSIONS (inch dimensions are derived from the original mm dimensions)**

| UNIT | A max. | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | $D^{(1)}$ | $E^{(1)}$ | e | $H_E$ | L | $L_p$ | Q | v | w | y | $Z^{(1)}$ | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.75 | 0.25<br>0.10 | 1.45<br>1.25 | 0.25 | 0.49<br>0.36 | 0.25<br>0.19 | 8.75<br>8.55 | 4.0<br>3.8 | 1.27 | 6.2<br>5.8 | 1.05 | 1.0<br>0.4 | 0.7<br>0.6 | 0.25 | 0.25 | 0.1 | 0.7<br>0.3 | $8^o$<br>$0^o$ |
| inches | 0.069 | 0.010<br>0.004 | 0.057<br>0.049 | 0.01 | 0.019<br>0.014 | 0.0100<br>0.0075 | 0.35<br>0.34 | 0.16<br>0.15 | 0.05 | 0.244<br>0.228 | 0.041 | 0.039<br>0.016 | 0.028<br>0.024 | 0.01 | 0.01 | 0.004 | 0.028<br>0.012 | |

**Note**

1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT108-1 | 076E06 | MS-012 | | | | ~~99-12-27~~<br>03-02-19 |

**Fig 8. Package outline SOT108-1 (SO14)**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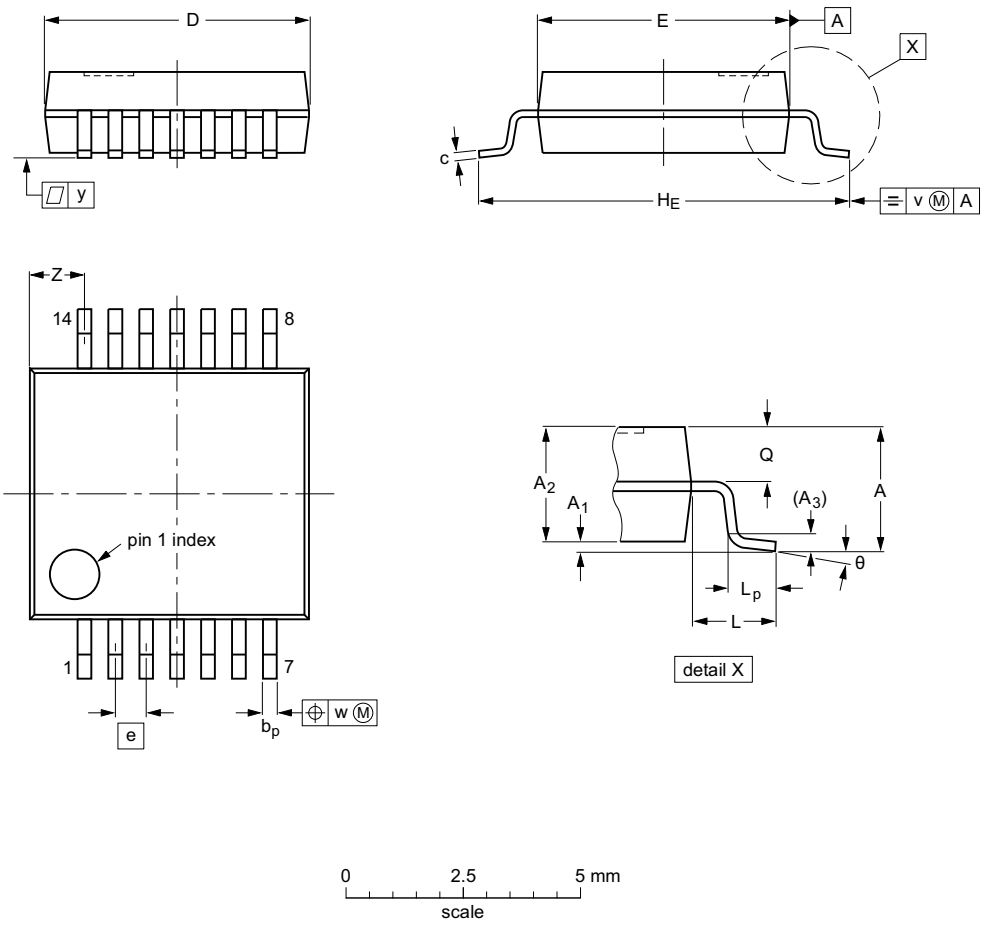
**SSOP14: plastic shrink small outline package; 14 leads; body width 5.3 mm** **SOT337-1**




**DIMENSIONS (mm are the original dimensions)**

| UNIT | A max. | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | D (1) | E (1) | e | $H_E$ | L | $L_p$ | Q | v | w | y | Z (1) | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 2 | 0.21<br>0.05 | 1.80<br>1.65 | 0.25 | 0.38<br>0.25 | 0.20<br>0.09 | 6.4<br>6.0 | 5.4<br>5.2 | 0.65 | 7.9<br>7.6 | 1.25 | 1.03<br>0.63 | 0.9<br>0.7 | 0.2 | 0.13 | 0.1 | 1.4<br>0.9 | $8^o$<br>$0^o$ |

**Note**

1. Plastic or metal protrusions of 0.25 mm maximum per side are not included.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT337-1 | | MO-150 | | | | ~~99-12-27~~<br>03-02-19 |

**Fig 9. Package outline SOT337-1 (SSOP14)**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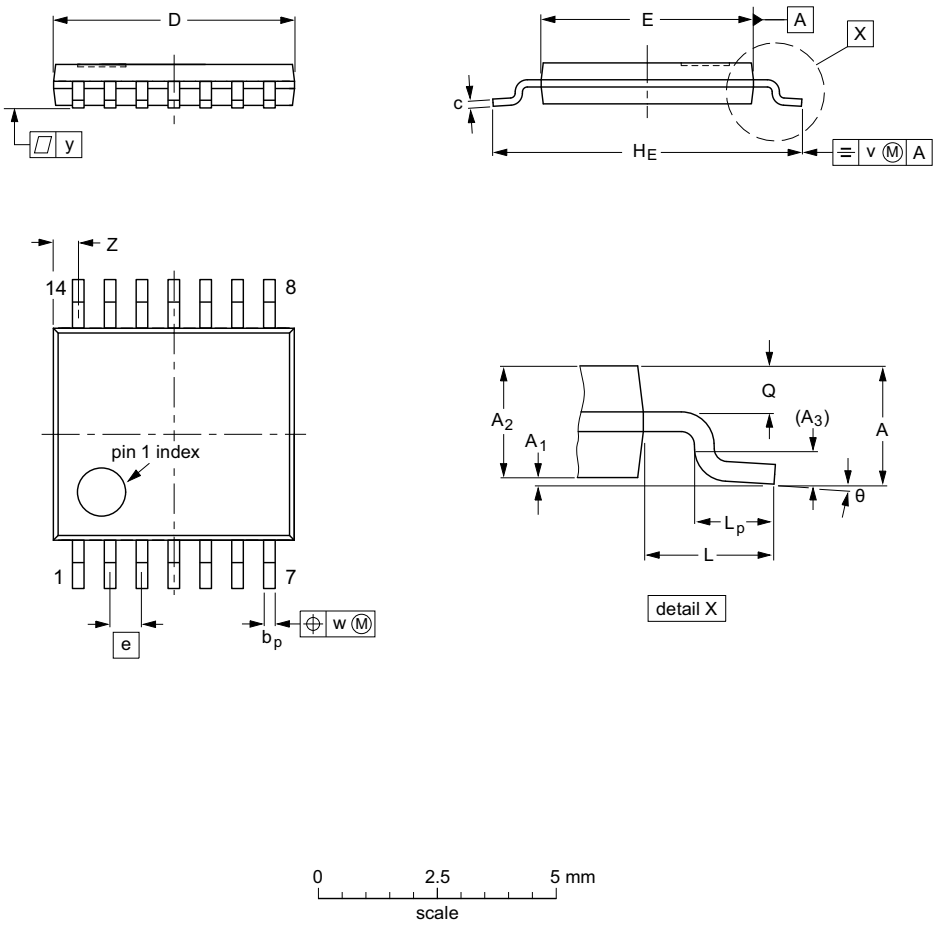
**TSSOP14: plastic thin shrink small outline package; 14 leads; body width 4.4 mm** **SOT402-1**




**DIMENSIONS (mm are the original dimensions)**

| UNIT | A max. | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | D (1) | E (2) | e | $H_E$ | L | $L_p$ | Q | v | w | y | Z (1) | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.1 | 0.15<br>0.05 | 0.95<br>0.80 | 0.25 | 0.30<br>0.19 | 0.2<br>0.1 | 5.1<br>4.9 | 4.5<br>4.3 | 0.65 | 6.6<br>6.2 | 1 | 0.75<br>0.50 | 0.4<br>0.3 | 0.2 | 0.13 | 0.1 | 0.72<br>0.38 | 8°<br>0° |

**Notes**

1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.
2. Plastic interlead protrusions of 0.25 mm maximum per side are not included.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT402-1 | | MO-153 | | | | ~~99-12-27~~<br>03-02-18 |

**Fig 10. Package outline SOT402-1 (TSSOP14)**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## 13. Abbreviations

**Table 10. Abbreviations**

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

## 14. Revision history

**Table 11. Revision history**

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| 74HC_HCT125 v.6 | 20151201 | Product data sheet | - | 74HC_HCT125 v.5 |
| Modifications: | • Type numbers 74HC125N and 74HCT125N (SOT27-1) removed. | | | |
| 74HC_HCT125 v.5 | 20150119 | Product data sheet | - | 74HC_HCT125 v.4 |
| Modifications: | • Table 7: Power dissipation capacitance condition for 74HCT125 is corrected. | | | |
| 74HC_HCT125 v.4 | 20130110 | Product data sheet | - | 74HC_HCT125 v.3 |
| Modifications: | • New general description. | | | |
| 74HC_HCT125 v.3 | 20120827 | Product data sheet | - | 74HC_HCT125_CNV v.2 |
| Modifications: | • The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.<br>• Legal texts have been adapted to the new company name where appropriate. | | | |
| 74HC_HCT125_CNV v.2 | 19970827 | Product data sheet | - | - |


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# 15. Legal information

## 15.1 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 URL http://www.nexperia.com.

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