

74AUP2G125

Low-power dual buffer/line driver; 3-state

Rev. 12 — 3 July 2017

Product data sheet

1 General description

The 74AUP2G125 provides the dual non-inverting buffer/line driver with 3-state output. The 3-state output is controlled by the output enable input ($n\overline{OE}$). A HIGH level at pin $n\overline{OE}$ causes the output to assume a high-impedance OFF-state. This device has the input-disable feature, which allows floating input signals. The inputs are disabled when the output enable input $n\overline{OE}$ is HIGH.

Schmitt trigger action at all inputs makes the circuit tolerant to slower input rise and fall times across the entire V_{CC} range from 0.8 V to 3.6 V. This device ensures a very low static and dynamic power consumption across the entire V_{CC} range from 0.8 V to 3.6 V.

This device is fully specified for partial power-down applications using I_{OFF} . The I_{OFF} circuitry disables the output, preventing a damaging backflow current through the device when it is powered down.

2 Features and benefits

- Wide supply voltage range from 0.8 V to 3.6 V
- High noise immunity
- Complies with JEDEC standards:
 - JESD8-12 (0.8 V to 1.3 V)
 - JESD8-11 (0.9 V to 1.65 V)
 - JESD8-7 (1.2 V to 1.95 V)
 - JESD8-5 (1.8 V to 2.7 V)
 - JESD8-B (2.7 V to 3.6 V)
- ESD protection:
 - HBM JESD22-A114F Class 3A exceeds 5000 V
 - MM JESD22-A115-A exceeds 200 V
 - CDM JESD22-C101E exceeds 1000 V
- Low static power consumption; $I_{CC} = 0.9 \mu\text{A}$ (maximum)
- Latch-up performance exceeds 100 mA per JESD78B Class II
- Inputs accept voltages up to 3.6 V
- Low noise overshoot and undershoot < 10 % of V_{CC}
- Input-disable feature allows floating input conditions
- I_{OFF} circuitry provides partial power-down mode operation
- Multiple package options
- Specified from -40 °C to +85 °C and -40 °C to +125 °C

3 Ordering information

Table 1. Ordering information

| Type number | Package | | | Version |
|--------------|-------------------|--------|---|----------|
| | Temperature range | Name | Description | |
| 74AUP2G125DC | -40 °C to +125 °C | VSSOP8 | plastic very thin shrink small outline package; 8 leads; body width 2.3 mm | SOT765-1 |
| 74AUP2G125GT | -40 °C to +125 °C | XSON8 | plastic extremely thin small outline package; no leads; 8 terminals; body 1 × 1.95 × 0.5 mm | SOT833-1 |
| 74AUP2G125GF | -40 °C to +125 °C | XSON8 | extremely thin small outline package; no leads; 8 terminals; body 1.35 × 1 × 0.5 mm | SOT1089 |
| 74AUP2G125GM | -40 °C to +125 °C | XQFN8 | plastic, extremely thin quad flat package; no leads; 8 terminals; body 1.6 × 1.6 × 0.5 mm | SOT902-2 |
| 74AUP2G125GN | -40 °C to +125 °C | XSON8 | extremely thin small outline package; no leads; 8 terminals; body 1.2 × 1.0 × 0.35 mm | SOT1116 |
| 74AUP2G125GS | -40 °C to +125 °C | XSON8 | extremely thin small outline package; no leads; 8 terminals; body 1.35 × 1.0 × 0.35 mm | SOT1203 |
| 74AUP2G125GX | -40 °C to +125 °C | X2SON8 | plastic thermal enhanced extremely thin small outline package; no leads; 8 terminals; body 1.35 × 0.8 × 0.35 mm | SOT1233 |

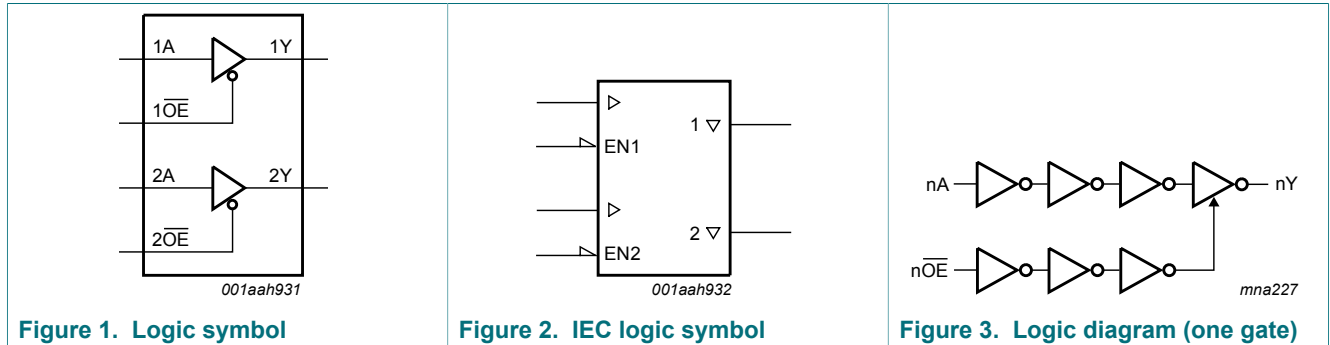
4 Marking

Table 2. Marking codes

| Type number | Marking code ^[1] |
|--------------|-----------------------------|
| 74AUP2G125DC | p25 |
| 74AUP2G125GT | p25 |
| 74AUP2G125GF | aM |
| 74AUP2G125GM | p25 |
| 74AUP2G125GN | aM |
| 74AUP2G125GS | aM |
| 74AUP2G125GX | aM |

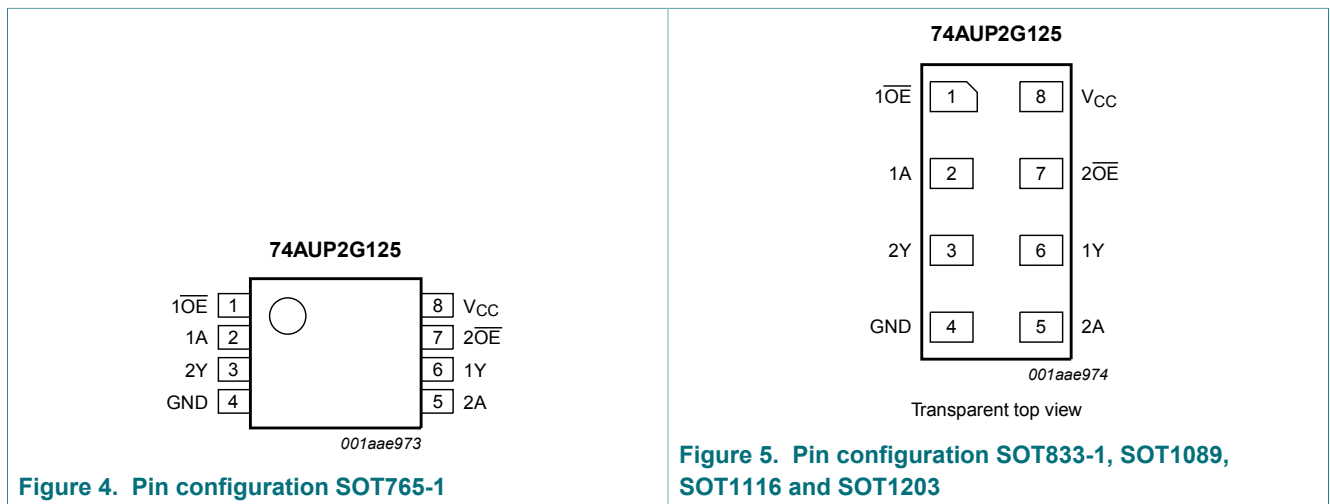
[1] The pin 1 indicator is located on the lower left corner of the device, below the marking code.

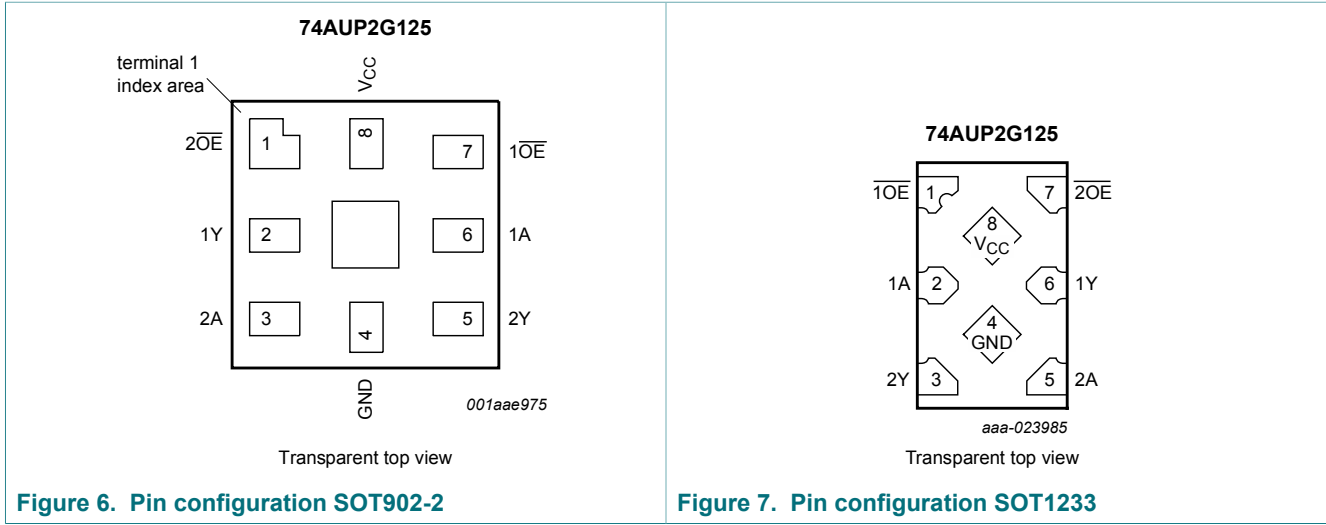
5 Functional diagram



6 Pinning information

6.1 Pinning





6.2 Pin description

Table 3. Pin description

| Symbol | Pin | Description | |
|----------|--|-----------------|----------------------------------|
| | SOT765-1, SOT833-1, SOT1089, SOT1116, SOT1203 and SOT1233 | SOT902-2 | |
| 1OE, 2OE | 1, 7 | 7, 1 | output enable input (active LOW) |
| 1A, 2A | 2, 5 | 6, 3 | data input |
| GND | 4 | 4 | ground (0 V) |
| 1Y, 2Y | 6, 3 | 2, 5 | data output |
| VCC | 8 | 8 | supply voltage |

7 Functional description

Table 4. Function table

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

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

8 Limiting values

Table 5. Limiting values

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

| Symbol | Parameter | Conditions | Min | Max | Unit |
|-----------|-------------------------|-------------------------------------|------|----------|------|
| V_{CC} | supply voltage | | -0.5 | +4.6 | V |
| V_I | input voltage | [1] | -0.5 | +4.6 | V |
| V_O | output voltage | Active mode and Power-down mode [1] | -0.5 | +4.6 | V |
| I_{IK} | input clamping current | $V_I < 0$ V | -50 | - | mA |
| I_{OK} | output clamping current | $V_O < 0$ V | -50 | - | mA |
| I_O | output current | $V_O = 0$ V to V_{CC} | - | ± 20 | mA |
| I_{CC} | supply current | | - | +50 | mA |
| I_{GND} | ground current | | -50 | - | mA |
| T_{stg} | storage temperature | | -65 | +150 | °C |
| P_{tot} | total power dissipation | $T_{amb} = -40$ °C to +125 °C [2] | - | 250 | mW |

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

[2] For VSSOP8 packages: above 110 °C the value of P_{tot} derates linearly with 8.0 mW/K.

For XSON8 and XQFN8 packages: above 118 °C the value of P_{tot} derates linearly with 7.8 mW/K.

For X2SON8 package: above 118 °C the value of P_{tot} derates linearly with 7.7 mW/K.

9 Recommended operating conditions

Table 6. Operating conditions

| Symbol | Parameter | Conditions | Min | Max | Unit |
|---------------------|-------------------------------------|---------------------------------|-----|----------|------|
| V_{CC} | supply voltage | | 0.8 | 3.6 | V |
| V_I | input voltage | | 0 | 3.6 | V |
| V_O | output voltage | Active mode | 0 | V_{CC} | V |
| | | Power-down mode; $V_{CC} = 0$ V | 0 | 3.6 | V |
| T_{amb} | ambient temperature | | -40 | +125 | °C |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CC} = 0.8$ V to 3.6 V | - | 200 | ns/V |

10 Static characteristics

Table 7. Static characteristics

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

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|--------------------------------------|---|-----------------------------|-----|-----------------------------|---------------|
| $T_{\text{amb}} = 25\text{ }^{\circ}\text{C}$ | | | | | | |
| V_{IH} | HIGH-level input voltage | $V_{\text{CC}} = 0.8\text{ V}$ | $0.70 \times V_{\text{CC}}$ | - | - | V |
| | | $V_{\text{CC}} = 0.9\text{ V to }1.95\text{ V}$ | $0.65 \times V_{\text{CC}}$ | - | - | V |
| | | $V_{\text{CC}} = 2.3\text{ V to }2.7\text{ V}$ | 1.6 | - | - | V |
| | | $V_{\text{CC}} = 3.0\text{ V to }3.6\text{ V}$ | 2.0 | - | - | V |
| V_{IL} | LOW-level input voltage | $V_{\text{CC}} = 0.8\text{ V}$ | - | - | $0.30 \times V_{\text{CC}}$ | V |
| | | $V_{\text{CC}} = 0.9\text{ V to }1.95\text{ V}$ | - | - | $0.35 \times V_{\text{CC}}$ | V |
| | | $V_{\text{CC}} = 2.3\text{ V to }2.7\text{ V}$ | - | - | 0.7 | V |
| | | $V_{\text{CC}} = 3.0\text{ V to }3.6\text{ V}$ | - | - | 0.9 | V |
| V_{OH} | HIGH-level output voltage | $V_{\text{I}} = V_{\text{IH}} \text{ or } V_{\text{IL}}$ | | | | |
| | | $I_{\text{O}} = -20\text{ }\mu\text{A}; V_{\text{CC}} = 0.8\text{ V to }3.6\text{ V}$ | $V_{\text{CC}} - 0.1$ | - | - | V |
| | | $I_{\text{O}} = -1.1\text{ mA}; V_{\text{CC}} = 1.1\text{ V}$ | $0.75 \times V_{\text{CC}}$ | - | - | V |
| | | $I_{\text{O}} = -1.7\text{ mA}; V_{\text{CC}} = 1.4\text{ V}$ | 1.11 | - | - | V |
| | | $I_{\text{O}} = -1.9\text{ mA}; V_{\text{CC}} = 1.65\text{ V}$ | 1.32 | - | - | V |
| | | $I_{\text{O}} = -2.3\text{ mA}; V_{\text{CC}} = 2.3\text{ V}$ | 2.05 | - | - | V |
| | | $I_{\text{O}} = -3.1\text{ mA}; V_{\text{CC}} = 2.3\text{ V}$ | 1.9 | - | - | V |
| | | $I_{\text{O}} = -2.7\text{ mA}; V_{\text{CC}} = 3.0\text{ V}$ | 2.72 | - | - | V |
| | | $I_{\text{O}} = -4.0\text{ mA}; V_{\text{CC}} = 3.0\text{ V}$ | 2.6 | - | - | V |
| V_{OL} | LOW-level output voltage | $V_{\text{I}} = V_{\text{IH}} \text{ or } V_{\text{IL}}$ | | | | |
| | | $I_{\text{O}} = 20\text{ }\mu\text{A}; V_{\text{CC}} = 0.8\text{ V to }3.6\text{ V}$ | - | - | 0.1 | V |
| | | $I_{\text{O}} = 1.1\text{ mA}; V_{\text{CC}} = 1.1\text{ V}$ | - | - | $0.3 \times V_{\text{CC}}$ | V |
| | | $I_{\text{O}} = 1.7\text{ mA}; V_{\text{CC}} = 1.4\text{ V}$ | - | - | 0.31 | V |
| | | $I_{\text{O}} = 1.9\text{ mA}; V_{\text{CC}} = 1.65\text{ V}$ | - | - | 0.31 | V |
| | | $I_{\text{O}} = 2.3\text{ mA}; V_{\text{CC}} = 2.3\text{ V}$ | - | - | 0.31 | V |
| | | $I_{\text{O}} = 3.1\text{ mA}; V_{\text{CC}} = 2.3\text{ V}$ | - | - | 0.44 | V |
| | | $I_{\text{O}} = 2.7\text{ mA}; V_{\text{CC}} = 3.0\text{ V}$ | - | - | 0.31 | V |
| | | $I_{\text{O}} = 4.0\text{ mA}; V_{\text{CC}} = 3.0\text{ V}$ | - | - | 0.44 | V |
| I_{I} | input leakage current | $V_{\text{I}} = \text{GND to }3.6\text{ V}; V_{\text{CC}} = 0\text{ V to }3.6\text{ V}$ | - | - | ± 0.1 | μA |
| I_{OZ} | OFF-state output current | $V_{\text{I}} = V_{\text{IH}} \text{ or } V_{\text{IL}}; V_{\text{O}} = 0\text{ V to }3.6\text{ V}; V_{\text{CC}} = 0\text{ V to }3.6\text{ V}$ | - | - | ± 0.1 | μA |
| I_{OFF} | power-off leakage current | $V_{\text{I}} \text{ or } V_{\text{O}} = 0\text{ V to }3.6\text{ V}; V_{\text{CC}} = 0\text{ V}$ | - | - | ± 0.2 | μA |
| ΔI_{OFF} | additional power-off leakage current | $V_{\text{I}} \text{ or } V_{\text{O}} = 0\text{ V to }3.6\text{ V}; V_{\text{CC}} = 0\text{ V to }0.2\text{ V}$ | - | - | ± 0.2 | μA |

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|--|---------------------------|---|----------------------|------------|----------------------|---------------|
| I_{CC} | supply current | $V_I = \text{GND or } V_{CC}; I_O = 0 \text{ A};$ $V_{CC} = 0.8 \text{ V to } 3.6 \text{ V}$ | - | - | 0.5 | μA |
| ΔI_{CC} | additional supply current | data input; $V_I = V_{CC} - 0.6 \text{ V}; I_O = 0 \text{ A};$ ^[1] $V_{CC} = 3.3 \text{ V}$ | - | - | 40 | μA |
| | | \overline{nOE} input; $V_I = V_{CC} - 0.6 \text{ V}; I_O = 0 \text{ A};$ ^[1] $V_{CC} = 3.3 \text{ V}$ | - | - | 110 | μA |
| | | all inputs; $V_I = \text{GND to } 3.6 \text{ V};$ ^[2] $\overline{nOE} = \text{GND}; V_{CC} = 0.8 \text{ V to } 3.6 \text{ V}$ | - | - | 1 | μA |
| C_I | input capacitance | $V_{CC} = 0 \text{ V to } 3.6 \text{ V}; V_I = \text{GND or } V_{CC}$ | - | 0.8 | - | pF |
| C_O | output capacitance | output enabled; $V_O = \text{GND}; V_{CC} = 0 \text{ V}$ | - | 1.4 | - | pF |
| | | output disabled; $V_O = \text{GND or } V_{CC} = 0 \text{ V};$ $V_{CC} = 0 \text{ V to } 3.6 \text{ V}$ | - | 1.3 | - | pF |
| $T_{\text{amb}} = -40 \text{ }^\circ\text{C to } +85 \text{ }^\circ\text{C}$ | | | | | | |
| V_{IH} | HIGH-level input voltage | $V_{CC} = 0.8 \text{ V}$ | $0.70 \times V_{CC}$ | - | - | V |
| | | $V_{CC} = 0.9 \text{ V to } 1.95 \text{ V}$ | $0.65 \times V_{CC}$ | - | - | V |
| | | $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ | 1.6 | - | - | V |
| | | $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$ | 2.0 | - | - | V |
| V_{IL} | LOW-level input voltage | $V_{CC} = 0.8 \text{ V}$ | - | - | $0.30 \times V_{CC}$ | V |
| | | $V_{CC} = 0.9 \text{ V to } 1.95 \text{ V}$ | - | - | $0.35 \times V_{CC}$ | V |
| | | $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ | - | - | 0.7 | V |
| | | $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$ | - | - | 0.9 | V |
| V_{OH} | HIGH-level output voltage | $V_I = V_{IH} \text{ or } V_{IL}$ | | | | |
| | | $I_O = -20 \mu\text{A}; V_{CC} = 0.8 \text{ V to } 3.6 \text{ V}$ | $V_{CC} - 0.1$ | - | - | V |
| | | $I_O = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$ | $0.7 \times V_{CC}$ | - | - | V |
| | | $I_O = -1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$ | 1.03 | - | - | V |
| | | $I_O = -1.9 \text{ mA}; V_{CC} = 1.65 \text{ V}$ | 1.30 | - | - | V |
| | | $I_O = -2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$ | 1.97 | - | - | V |
| | | $I_O = -3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$ | 1.85 | - | - | V |
| | | $I_O = -2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$ | 2.67 | - | - | V |
| $I_O = -4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$ | 2.55 | - | - | V | | |

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|--|--------------------------------------|---|------------------------|-----|------------------------|------|
| V _{OL} | LOW-level output voltage | V _I = V _{IH} or V _{IL} | | | | |
| | | I _O = 20 μA; V _{CC} = 0.8 V to 3.6 V | - | - | 0.1 | V |
| | | I _O = 1.1 mA; V _{CC} = 1.1 V | - | - | 0.3 × V _{CC} | V |
| | | I _O = 1.7 mA; V _{CC} = 1.4 V | - | - | 0.37 | V |
| | | I _O = 1.9 mA; V _{CC} = 1.65 V | - | - | 0.35 | V |
| | | I _O = 2.3 mA; V _{CC} = 2.3 V | - | - | 0.33 | V |
| | | I _O = 3.1 mA; V _{CC} = 2.3 V | - | - | 0.45 | V |
| | | I _O = 2.7 mA; V _{CC} = 3.0 V | - | - | 0.33 | V |
| I _O = 4.0 mA; V _{CC} = 3.0 V | - | - | 0.45 | V | | |
| I _I | input leakage current | V _I = GND to 3.6 V; V _{CC} = 0 V to 3.6 V | - | - | ±0.5 | μA |
| I _{OZ} | OFF-state output current | V _I = V _{IH} or V _{IL} ; V _O = 0 V to 3.6 V; V _{CC} = 0 V to 3.6 V | - | - | ±0.5 | μA |
| I _{OFF} | power-off leakage current | V _I or V _O = 0 V to 3.6 V; V _{CC} = 0 V | - | - | ±0.5 | μA |
| ΔI _{OFF} | additional power-off leakage current | V _I or V _O = 0 V to 3.6 V; V _{CC} = 0 V to 0.2 V | - | - | ±0.6 | μA |
| I _{CC} | supply current | V _I = GND or V _{CC} ; I _O = 0 A; V _{CC} = 0.8 V to 3.6 V | - | - | 0.9 | μA |
| ΔI _{CC} | additional supply current | data input; V _I = V _{CC} - 0.6 V; I _O = 0 A; ^[1] V _{CC} = 3.3 V | - | - | 50 | μA |
| | | n $\overline{\text{OE}}$ input; V _I = V _{CC} - 0.6 V; I _O = 0 A; ^[1] V _{CC} = 3.3 V | - | - | 120 | μA |
| | | all inputs; V _I = GND to 3.6 V; n $\overline{\text{OE}}$ = GND; V _{CC} = 0.8 V to 3.6 V ^[2] | - | - | 1 | μA |
| T _{amb} = -40 °C to +125 °C | | | | | | |
| V _{IH} | HIGH-level input voltage | V _{CC} = 0.8 V | 0.75 × V _{CC} | - | - | V |
| | | V _{CC} = 0.9 V to 1.95 V | 0.70 × V _{CC} | - | - | V |
| | | V _{CC} = 2.3 V to 2.7 V | 1.6 | - | - | V |
| | | V _{CC} = 3.0 V to 3.6 V | 2.0 | - | - | V |
| V _{IL} | LOW-level input voltage | V _{CC} = 0.8 V | - | - | 0.25 × V _{CC} | V |
| | | V _{CC} = 0.9 V to 1.95 V | - | - | 0.30 × V _{CC} | V |
| | | V _{CC} = 2.3 V to 2.7 V | - | - | 0.7 | V |
| | | V _{CC} = 3.0 V to 3.6 V | - | - | 0.9 | V |

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|-------------------|--------------------------------------|--|------------------------|-----|------------------------|------|
| V _{OH} | HIGH-level output voltage | V _I = V _{IH} or V _{IL} | | | | |
| | | I _O = -20 µA; V _{CC} = 0.8 V to 3.6 V | V _{CC} - 0.11 | - | - | V |
| | | I _O = -1.1 mA; V _{CC} = 1.1 V | 0.6 × V _{CC} | - | - | V |
| | | I _O = -1.7 mA; V _{CC} = 1.4 V | 0.93 | - | - | V |
| | | I _O = -1.9 mA; V _{CC} = 1.65 V | 1.17 | - | - | V |
| | | I _O = -2.3 mA; V _{CC} = 2.3 V | 1.77 | - | - | V |
| | | I _O = -3.1 mA; V _{CC} = 2.3 V | 1.67 | - | - | V |
| | | I _O = -2.7 mA; V _{CC} = 3.0 V | 2.40 | - | - | V |
| | | I _O = -4.0 mA; V _{CC} = 3.0 V | 2.30 | - | - | V |
| V _{OL} | LOW-level output voltage | V _I = V _{IH} or V _{IL} | | | | |
| | | I _O = 20 µA; V _{CC} = 0.8 V to 3.6 V | - | - | 0.11 | V |
| | | I _O = 1.1 mA; V _{CC} = 1.1 V | - | - | 0.33 × V _{CC} | V |
| | | I _O = 1.7 mA; V _{CC} = 1.4 V | - | - | 0.41 | V |
| | | I _O = 1.9 mA; V _{CC} = 1.65 V | - | - | 0.39 | V |
| | | I _O = 2.3 mA; V _{CC} = 2.3 V | - | - | 0.36 | V |
| | | I _O = 3.1 mA; V _{CC} = 2.3 V | - | - | 0.50 | V |
| | | I _O = 2.7 mA; V _{CC} = 3.0 V | - | - | 0.36 | V |
| | | I _O = 4.0 mA; V _{CC} = 3.0 V | - | - | 0.50 | V |
| I _I | input leakage current | V _I = GND to 3.6 V; V _{CC} = 0 V to 3.6 V | - | - | ±0.75 | µA |
| I _{OZ} | OFF-state output current | V _I = V _{IH} or V _{IL} ; V _O = 0 V to 3.6 V; V _{CC} = 0 V to 3.6 V | - | - | ±0.75 | µA |
| I _{OFF} | power-off leakage current | V _I or V _O = 0 V to 3.6 V; V _{CC} = 0 V | - | - | ±0.75 | µA |
| ΔI _{OFF} | additional power-off leakage current | V _I or V _O = 0 V to 3.6 V; V _{CC} = 0 V to 0.2 V | - | - | ±0.75 | µA |
| I _{CC} | supply current | V _I = GND or V _{CC} ; I _O = 0 A; V _{CC} = 0.8 V to 3.6 V | - | - | 1.4 | µA |
| ΔI _{CC} | additional supply current | data input; V _I = V _{CC} - 0.6 V; I _O = 0 A; V _{CC} = 3.3 V ^[1] | - | - | 75 | µA |
| | | n $\overline{\text{OE}}$ input; V _I = V _{CC} - 0.6 V; I _O = 0 A; V _{CC} = 3.3 V ^[1] | - | - | 180 | µA |
| | | all inputs; V _I = GND to 3.6 V; n $\overline{\text{OE}}$ = GND; V _{CC} = 0.8 V to 3.6 V ^[2] | - | - | 1 | µA |

[1] One input at V_{CC} - 0.6 V, other input at V_{CC} or GND.

[2] To show I_{CC} remains very low when the input-disable feature is enabled.

11 Dynamic characteristics

Table 8. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 10](#).

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +125 °C | | | Unit |
|------------------------------|-------------------|--|-------|--------------------|------|-------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |
| C_L = 5 pF | | | | | | | | | |
| t _{pd} | propagation delay | nA to nY; see Figure 8 . ^[2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 20.6 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 2.8 | 5.5 | 10.5 | 2.5 | 11.7 | 12.9 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.2 | 3.9 | 6.1 | 2.0 | 7.3 | 8.1 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 1.9 | 3.2 | 4.8 | 1.7 | 6.1 | 6.7 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 1.6 | 2.6 | 3.6 | 1.4 | 4.3 | 4.9 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 1.4 | 2.4 | 3.1 | 1.2 | 3.9 | 4.4 | ns |
| t _{en} | enable time | nOE to nY; see Figure 9 . ^[3] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 69.9 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 3.1 | 6.1 | 11.8 | 2.9 | 13.9 | 15.4 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.5 | 4.2 | 6.6 | 2.3 | 7.7 | 8.3 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.1 | 3.4 | 5.1 | 2.0 | 6.2 | 6.8 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 1.8 | 2.6 | 3.7 | 1.7 | 4.5 | 5.0 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 1.7 | 2.4 | 3.1 | 1.7 | 3.5 | 3.9 | ns |
| t _{dis} | disable time | nOE to nY; see Figure 9 . ^[4] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 14.3 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 2.7 | 4.3 | 6.5 | 2.7 | 7.3 | 8.2 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.1 | 3.2 | 4.4 | 2.1 | 5.1 | 5.7 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.0 | 3.0 | 4.3 | 2.0 | 5.0 | 5.7 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 1.4 | 2.2 | 2.9 | 1.4 | 3.3 | 4.1 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 1.7 | 2.5 | 3.2 | 1.7 | 3.4 | 3.9 | ns |
| C_L = 10 pF | | | | | | | | | |
| t _{pd} | propagation delay | nA to nY; see Figure 8 . ^[2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 24.0 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 3.2 | 6.4 | 12.3 | 3.0 | 13.8 | 15.2 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.1 | 4.5 | 7.3 | 1.9 | 8.5 | 9.4 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 1.9 | 3.8 | 5.5 | 1.7 | 6.8 | 7.6 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.1 | 3.2 | 4.2 | 1.6 | 5.3 | 5.9 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 1.8 | 3.0 | 3.8 | 1.6 | 4.6 | 5.2 | ns |

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +125 °C | | | Unit |
|------------------------|-------------------|---|-------|--------------------|------|-------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |
| t _{en} | enable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[3] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 73.7 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 3.6 | 6.9 | 13.5 | 3.4 | 15.8 | 17.5 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.3 | 4.8 | 7.7 | 2.2 | 8.6 | 9.4 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.0 | 3.9 | 5.8 | 1.9 | 6.8 | 7.4 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 1.8 | 3.2 | 4.3 | 1.7 | 5.3 | 5.9 | ns |
| t _{dis} | disable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[4] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 32.7 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 3.4 | 5.4 | 7.9 | 3.4 | 8.8 | 9.9 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.2 | 4.1 | 5.5 | 2.2 | 6.2 | 7.1 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.2 | 4.2 | 5.6 | 1.9 | 6.3 | 7.1 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 1.7 | 3.0 | 3.8 | 1.7 | 4.5 | 5.1 | ns |
| C _L = 15 pF | propagation delay | nA to nY; see Figure 8 . ^[2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 27.4 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 3.6 | 7.2 | 14.1 | 3.3 | 15.8 | 17.5 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 3.0 | 5.1 | 8.1 | 2.5 | 9.8 | 10.9 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.2 | 4.3 | 6.3 | 2.0 | 7.9 | 8.8 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.0 | 3.7 | 4.9 | 1.8 | 6.0 | 6.7 | ns |
| t _{en} | enable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[3] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 77.5 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 4.0 | 7.7 | 15.2 | 3.7 | 17.6 | 19.6 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 3.0 | 5.3 | 8.4 | 2.5 | 9.8 | 10.7 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.3 | 4.4 | 6.5 | 2.1 | 7.7 | 8.5 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.1 | 3.6 | 5.0 | 2.0 | 6.1 | 6.8 | ns |
| t _{en} | enable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[3] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 77.5 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 4.0 | 7.7 | 15.2 | 3.7 | 17.6 | 19.6 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 3.0 | 5.3 | 8.4 | 2.5 | 9.8 | 10.7 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.3 | 4.4 | 6.5 | 2.1 | 7.7 | 8.5 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.1 | 3.6 | 5.0 | 2.0 | 6.1 | 6.8 | ns |
| t _{en} | enable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[3] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 77.5 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 4.0 | 7.7 | 15.2 | 3.7 | 17.6 | 19.6 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 3.0 | 5.3 | 8.4 | 2.5 | 9.8 | 10.7 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.3 | 4.4 | 6.5 | 2.1 | 7.7 | 8.5 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.1 | 3.6 | 5.0 | 2.0 | 6.1 | 6.8 | ns |

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +125 °C | | | Unit |
|------------------------|-------------------|---|-------|--------------------|------|-------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |
| t _{dis} | disable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[4] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 60.8 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 4.3 | 6.5 | 9.2 | 3.7 | 10.3 | 11.6 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 3.0 | 5.0 | 6.5 | 2.5 | 7.4 | 8.4 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 3.0 | 5.3 | 7.0 | 2.1 | 7.4 | 8.9 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.1 | 3.8 | 4.9 | 2.0 | 5.1 | 6.4 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 2.9 | 5.0 | 6.2 | 1.9 | 6.6 | 7.4 | ns |
| C _L = 30 pF | | | | | | | | | |
| t _{pd} | propagation delay | nA to nY; see Figure 8 . ^[2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 37.4 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 4.8 | 9.5 | 19.0 | 4.4 | 21.6 | 24.0 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 4.0 | 6.7 | 10.8 | 3.0 | 13.0 | 14.5 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 2.9 | 5.6 | 8.4 | 2.6 | 10.3 | 11.5 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.7 | 4.8 | 6.3 | 2.5 | 7.8 | 8.7 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 2.7 | 4.6 | 5.8 | 2.5 | 7.5 | 8.3 | ns |
| t _{en} | enable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[3] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 88.9 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 5.2 | 9.9 | 19.8 | 4.8 | 22.8 | 25.3 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 4.0 | 6.8 | 10.8 | 3.1 | 12.6 | 14.1 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 3.0 | 5.6 | 8.5 | 2.8 | 10.2 | 11.3 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 2.7 | 4.8 | 6.5 | 2.6 | 7.8 | 8.8 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 2.7 | 4.6 | 6.0 | 2.6 | 6.9 | 7.7 | ns |
| t _{dis} | disable time | n $\overline{\text{OE}}$ to nY; see Figure 9 . ^[4] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 49.9 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 6.0 | 9.9 | 13.3 | 4.8 | 14.8 | 16.5 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 4.4 | 7.7 | 9.6 | 3.1 | 10.8 | 12.1 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 5.1 | 8.7 | 11.1 | 2.8 | 12.4 | 13.8 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 3.6 | 6.2 | 7.6 | 2.6 | 8.6 | 9.6 | ns |
| | | V _{CC} = 3.0 V to 3.6 V | 5.2 | 8.7 | 10.5 | 2.6 | 10.8 | 13.1 | ns |

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +125 °C | | | Unit |
|---|-------------------------------|---|-------|--------------------|-----|-------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |
| C _L = 5 pF, 10 pF, 15 pF and 30 pF | | | | | | | | | |
| C _{PD} | power dissipation capacitance | output enabled; f _i = 1 MHz; ^[5] V _I = GND to V _{CC} | | | | | | | |
| | | V _{CC} = 0.8 V | - | 2.7 | - | - | - | - | pF |
| | | V _{CC} = 1.1 V to 1.3 V | - | 2.8 | - | - | - | - | pF |
| | | V _{CC} = 1.4 V to 1.6 V | - | 2.9 | - | - | - | - | pF |
| | | V _{CC} = 1.65 V to 1.95 V | - | 3.0 | - | - | - | - | pF |
| | | V _{CC} = 2.3 V to 2.7 V | - | 3.6 | - | - | - | - | pF |
| | | V _{CC} = 3.0 V to 3.6 V | - | 4.2 | - | - | - | - | pF |

- [1] All typical values are measured at nominal V_{CC}.
- [2] t_{pd} is the same as t_{PLH} and t_{PHL}.
- [3] t_{en} is the same as t_{PZH} and t_{PZL}.
- [4] t_{dis} is the same as t_{PHZ} and t_{PLZ}.
- [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.

11.1 Waveforms and test circuit

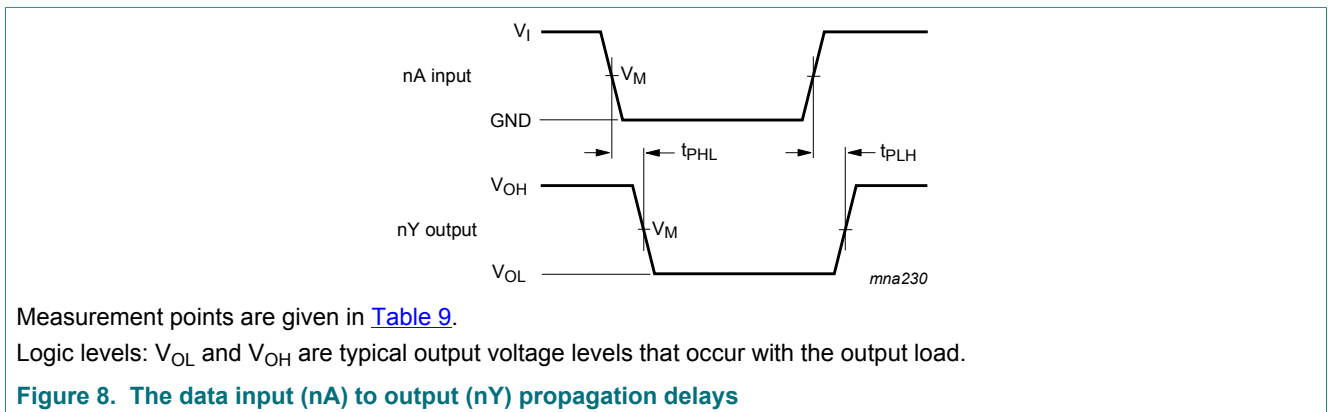


Table 9. Measurement points

| Supply voltage | Output | Input | | |
|-----------------|-----------------------|-----------------------|-----------------|---------------------------------|
| V _{CC} | V _M | V _M | V _I | t _r = t _f |
| 0.8 V to 3.6 V | 0.5 × V _{CC} | 0.5 × V _{CC} | V _{CC} | ≤ 3.0 ns |

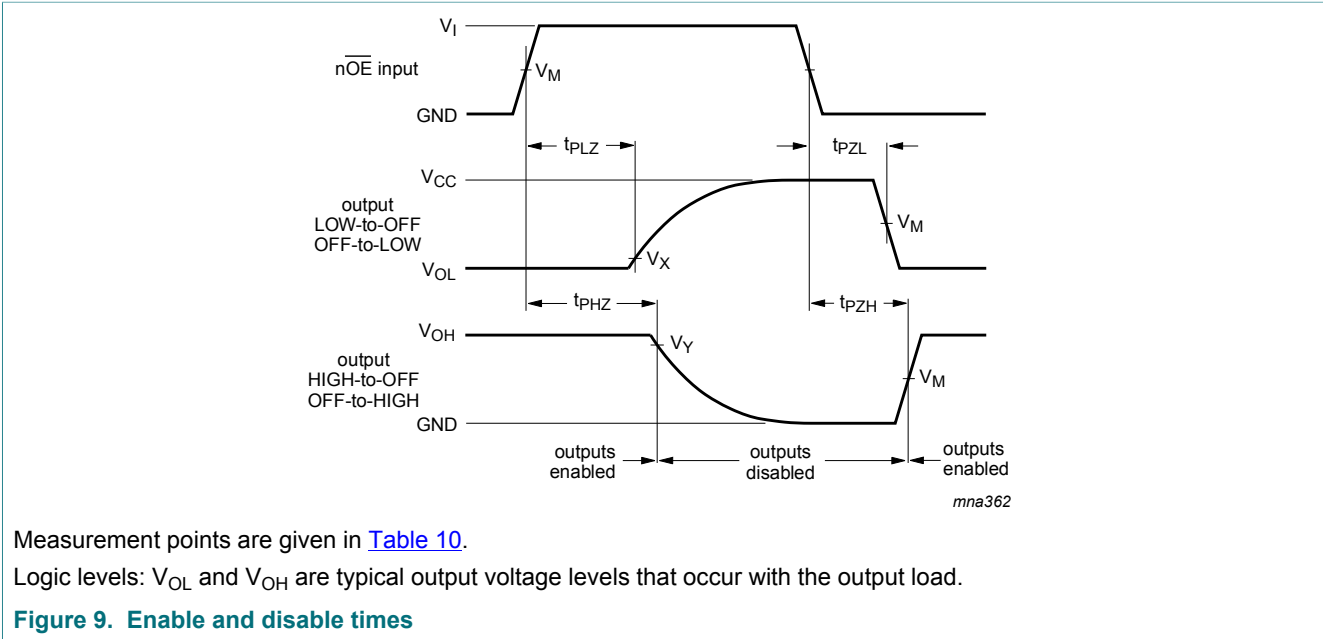
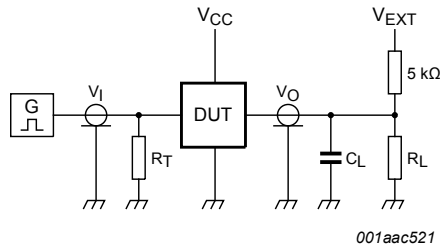


Table 10. Measurement points

| Supply voltage | Input | Output | | |
|-----------------|---------------------|---------------------|---------------------------|---------------------------|
| | | V_M | V_X | V_Y |
| 0.8 V to 1.6 V | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ | $V_{OL} + 0.1 \text{ V}$ | $V_{OH} - 0.1 \text{ V}$ |
| 1.65 V to 2.7 V | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ | $V_{OL} + 0.15 \text{ V}$ | $V_{OH} - 0.15 \text{ V}$ |
| 3.0 V to 3.6 V | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ | $V_{OL} + 0.3 \text{ V}$ | $V_{OH} - 0.3 \text{ V}$ |



Test data is given in [Table 11](#).

Definitions for test circuit:

R_L = Load resistance.

C_L = Load capacitance including jig and probe capacitance.

R_T = Termination resistance should be equal to the output impedance Z_o of the pulse generator.

V_{EXT} = External voltage for measuring switching times.

Figure 10. Test circuit for measuring switching times

Table 11. Test data

| Supply voltage | Load | | V_{EXT} | | | |
|----------------|------------------------------|--------------|-----------------------|-----------------------|-----------------------|--|
| V_{CC} | C_L | R_L [1] | t_{PLH} , t_{PHL} | t_{PZH} , t_{PHZ} | t_{PZL} , t_{PLZ} | |
| 0.8 V to 3.6 V | 5 pF, 10 pF, 15 pF and 30 pF | 5 kΩ or 1 MΩ | open | GND | $2 \times V_{CC}$ | |

[1] For measuring enable and disable times $R_L = 5 \text{ k}\Omega$.
 For measuring propagation delays, setup and hold times and pulse width $R_L = 1 \text{ M}\Omega$.

12 Package outline

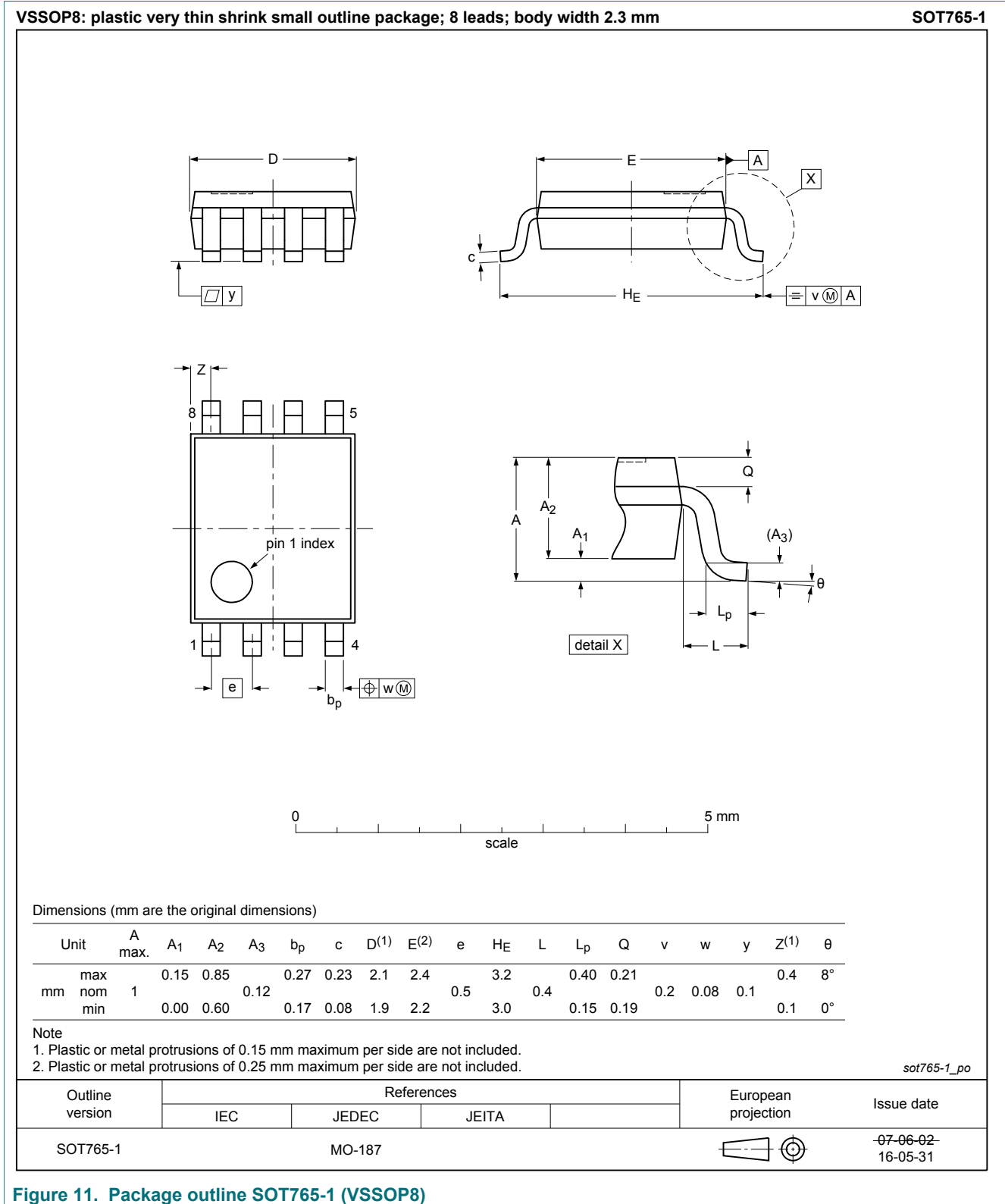
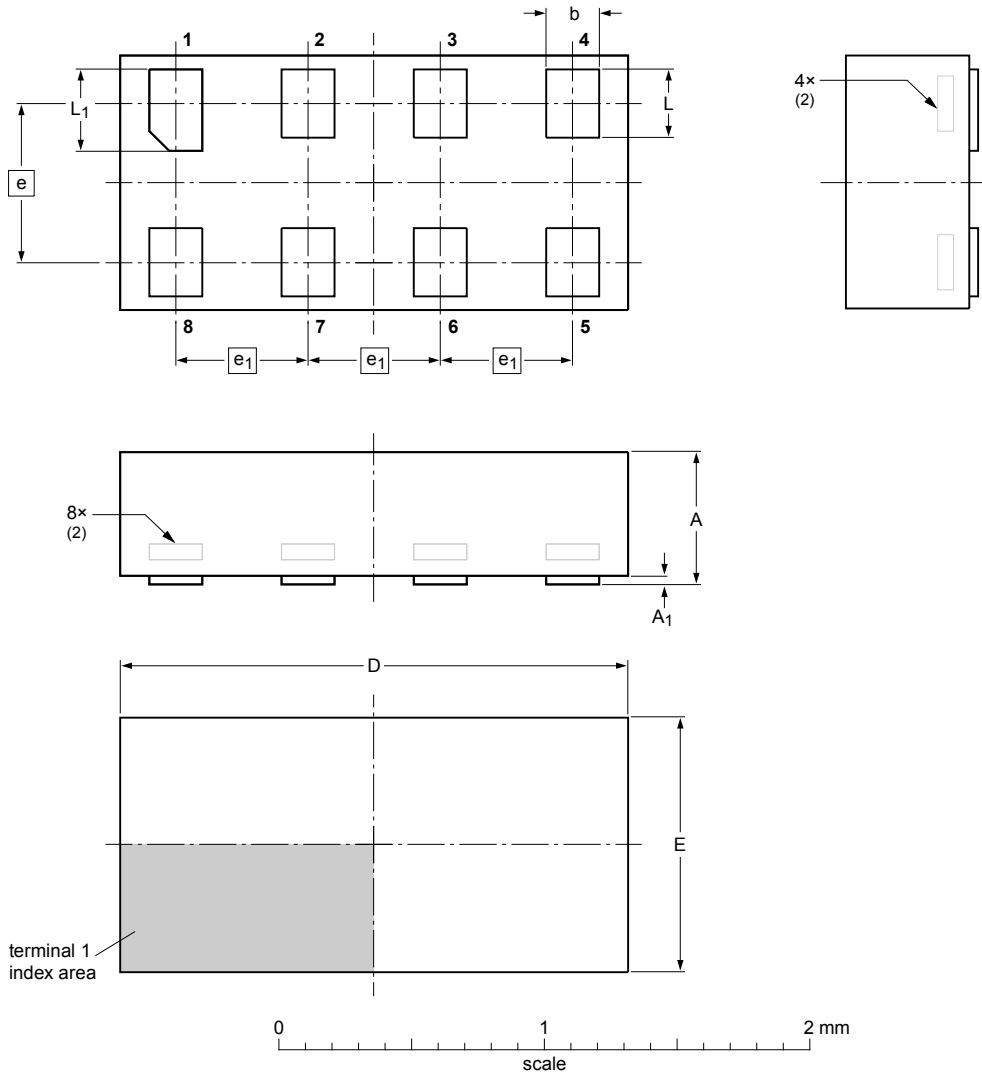


Figure 11. Package outline SOT765-1 (VSSOP8)

XSON8: plastic extremely thin small outline package; no leads; 8 terminals; body 1 x 1.95 x 0.5 mm

SOT833-1



DIMENSIONS (mm are the original dimensions)

| UNIT | A ⁽¹⁾ max | A ₁ max | b | D | E | e | e ₁ | L | L ₁ |
|------|-------------------------|-----------------------|--------------|------------|--------------|-----|----------------|--------------|----------------|
| mm | 0.5 | 0.04 | 0.25 0.17 | 2.0 1.9 | 1.05 0.95 | 0.6 | 0.5 | 0.35 0.27 | 0.40 0.32 |

Notes

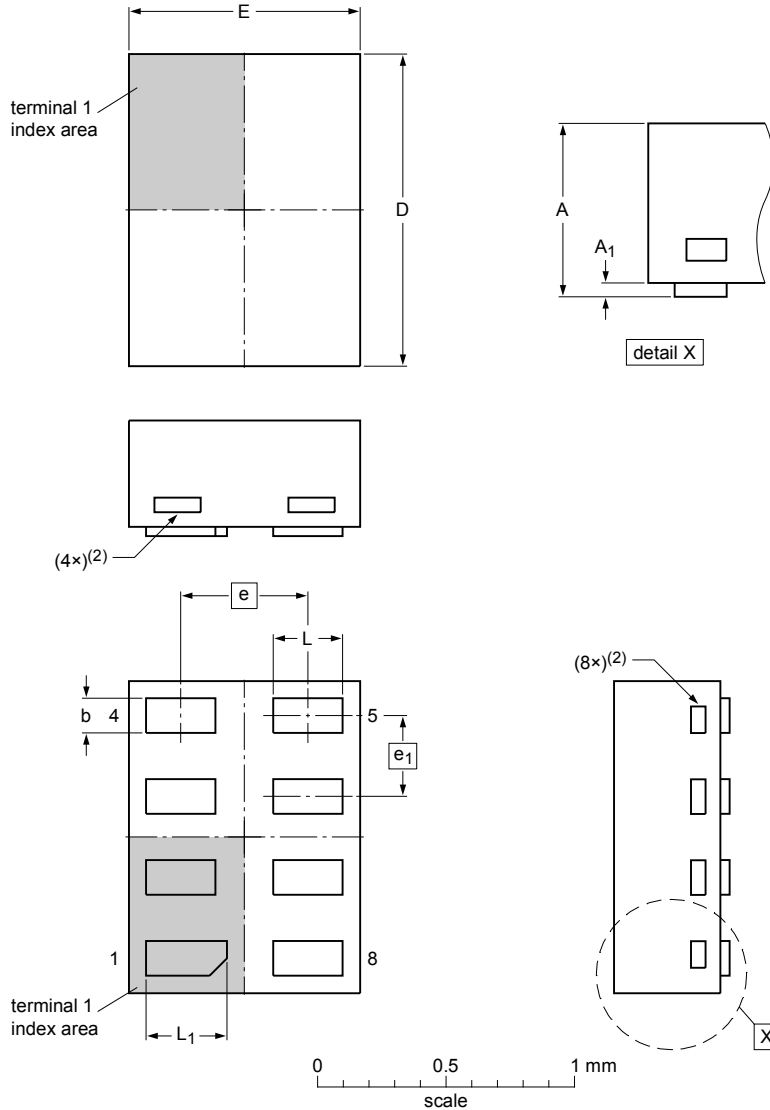
1. Including plating thickness.
2. Can be visible in some manufacturing processes.

| OUTLINE VERSION | REFERENCES | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|--------|-------|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | |
| SOT833-1 | --- | MO-252 | --- | | 07-11-14 07-12-07 |

Figure 12. Package outline SOT833-1 (XSON8)

XSON8: extremely thin small outline package; no leads;
8 terminals; body 1.35 x 1 x 0.5 mm

SOT1089



Dimensions

| Unit | A ⁽¹⁾ | A ₁ | b | D | E | e | e ₁ | L | L ₁ |
|------|------------------|----------------|------|------|------|------|----------------|------|----------------|
| max | 0.5 | 0.04 | 0.20 | 1.40 | 1.05 | | | 0.35 | 0.40 |
| nom | | | 0.15 | 1.35 | 1.00 | 0.55 | 0.35 | 0.30 | 0.35 |
| min | | | 0.12 | 1.30 | 0.95 | | | 0.27 | 0.32 |

Note

- Including plating thickness.
- Visible depending upon used manufacturing technology.

sot1089_po

| Outline version | References | | | | European projection | Issue date |
|-----------------|------------|--------|-------|--|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT1089 | | MO-252 | | | | 10-04-09 10-04-12 |

Figure 13. Package outline SOT1089 (XSON8)

XQFN8: plastic, extremely thin quad flat package; no leads;
8 terminals; body 1.6 x 1.6 x 0.5 mm

SOT902-2

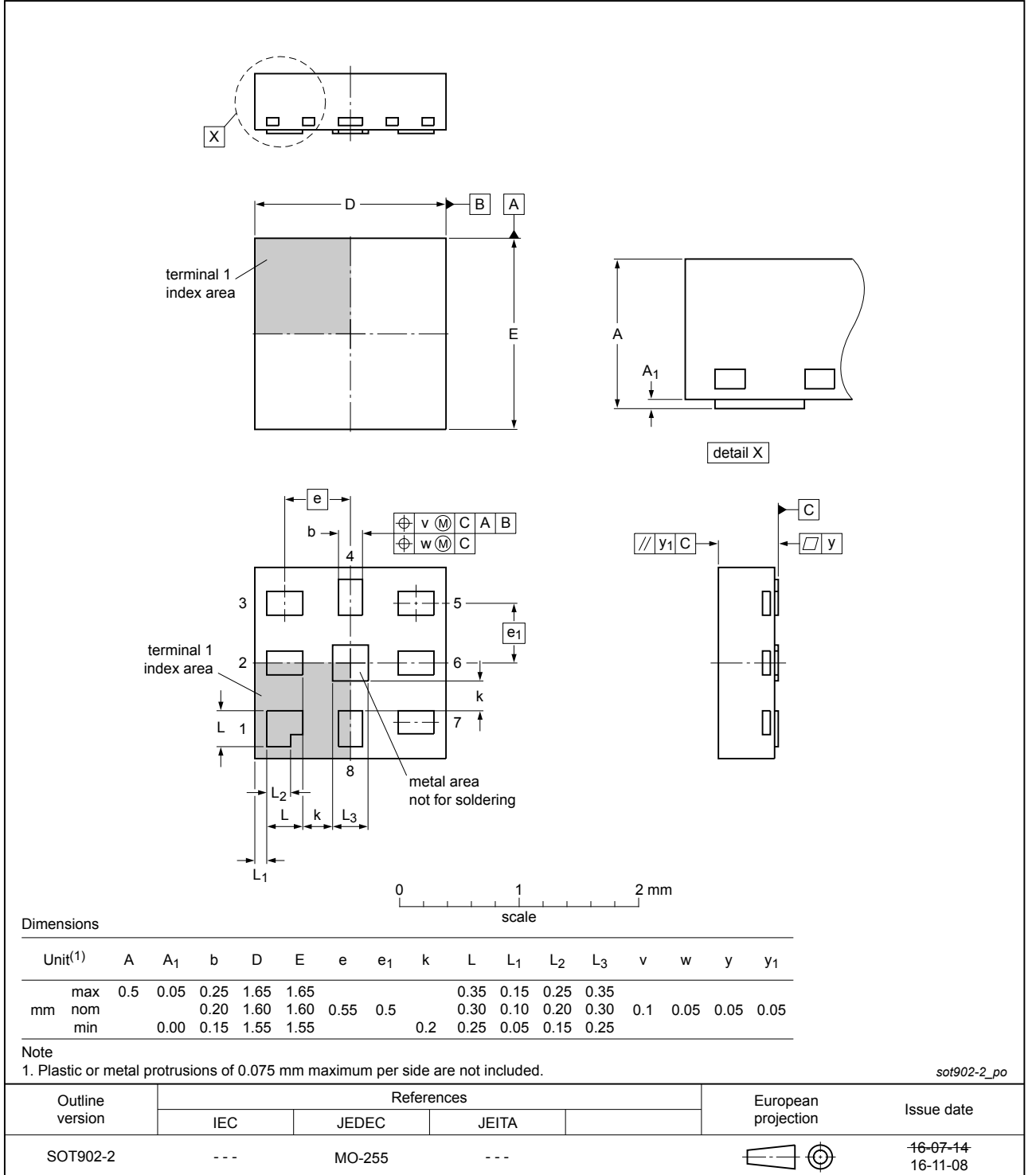
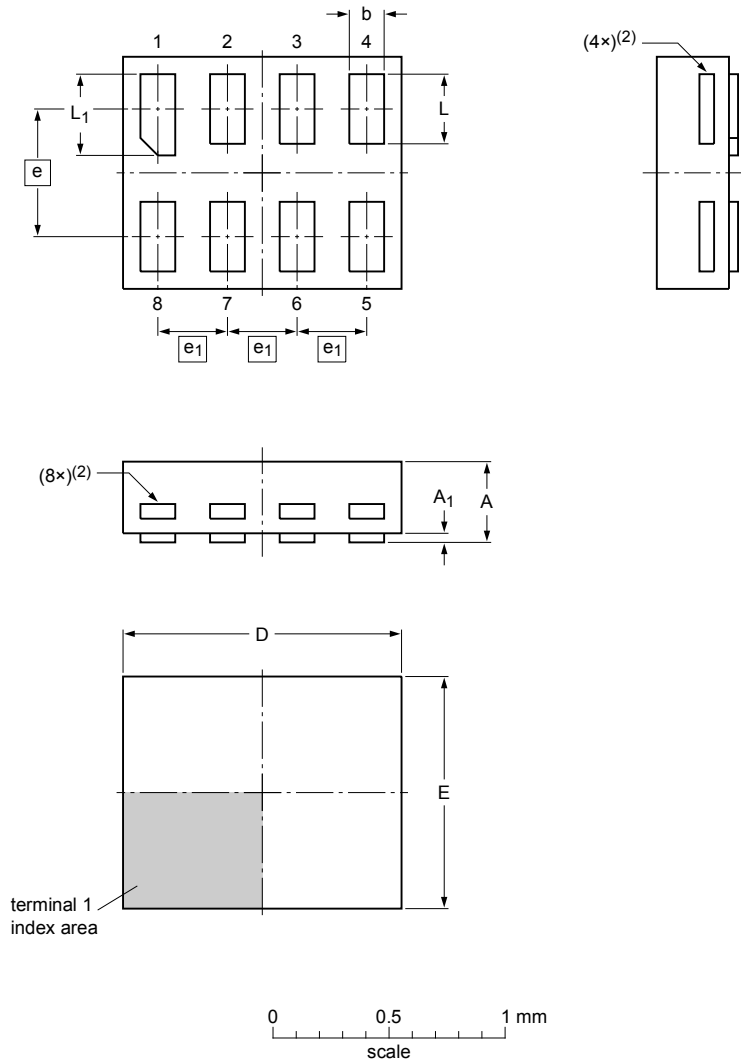


Figure 14. Package outline SOT902-2 (XQFN8)

XSON8: extremely thin small outline package; no leads;
8 terminals; body 1.2 x 1.0 x 0.35 mm

SOT1116



Dimensions

| Unit | A ⁽¹⁾ | A ₁ | b | D | E | e | e ₁ | L | L ₁ |
|------|------------------|----------------|------|------|------|------|----------------|------|----------------|
| mm | max 0.35 | 0.04 | 0.20 | 1.25 | 1.05 | 0.35 | 0.40 | 0.35 | 0.40 |
| | nom | | 0.15 | 1.20 | 1.00 | 0.55 | 0.3 | 0.30 | 0.35 |
| | min | | 0.12 | 1.15 | 0.95 | | | 0.27 | 0.32 |

Note

- Including plating thickness.
- Visible depending upon used manufacturing technology.

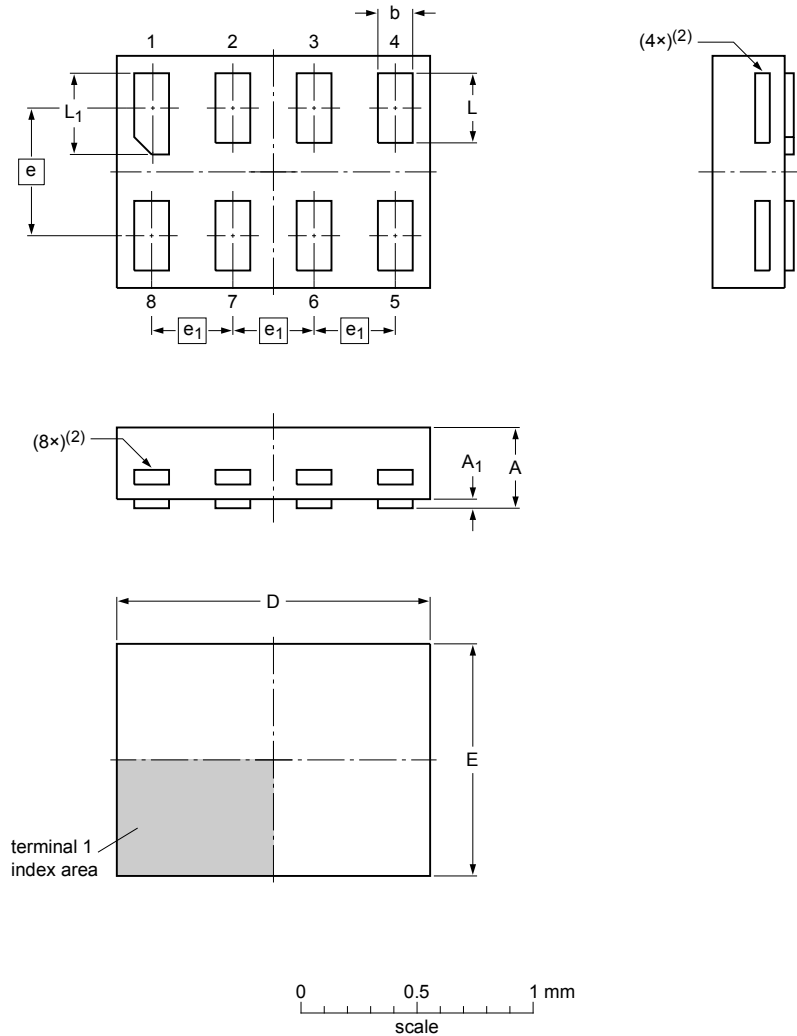
sot1116_po

| Outline version | References | | | | European projection | Issue date |
|-----------------|------------|-------|-------|--|---------------------|------------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT1116 | | | | | | -10-04-02- 10-04-07 |

Figure 15. Package outline SOT1116 (XSON8)

XSON8: extremely thin small outline package; no leads;
8 terminals; body 1.35 x 1.0 x 0.35 mm

SOT1203



Dimensions

| Unit | A ⁽¹⁾ | A ₁ | b | D | E | e | e ₁ | L | L ₁ |
|------|------------------|----------------|------|------|------|------|----------------|------|----------------|
| mm | max 0.35 | 0.04 | 0.20 | 1.40 | 1.05 | | | 0.35 | 0.40 |
| | nom | | 0.15 | 1.35 | 1.00 | 0.55 | 0.35 | 0.30 | 0.35 |
| | min | | 0.12 | 1.30 | 0.95 | | | 0.27 | 0.32 |

Note

- Including plating thickness.
- Visible depending upon used manufacturing technology.

sot1203_po

| Outline version | References | | | | European projection | Issue date |
|-----------------|------------|-------|-------|--|---------------------|------------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT1203 | | | | | | -10-04-02- 10-04-06 |

Figure 16. Package outline SOT1203 (XSON8)

X2SON8: plastic thermal enhanced extremely thin small outline package; no leads;
8 terminals; body 1.35 x 0.8 x 0.35 mm

SOT1233

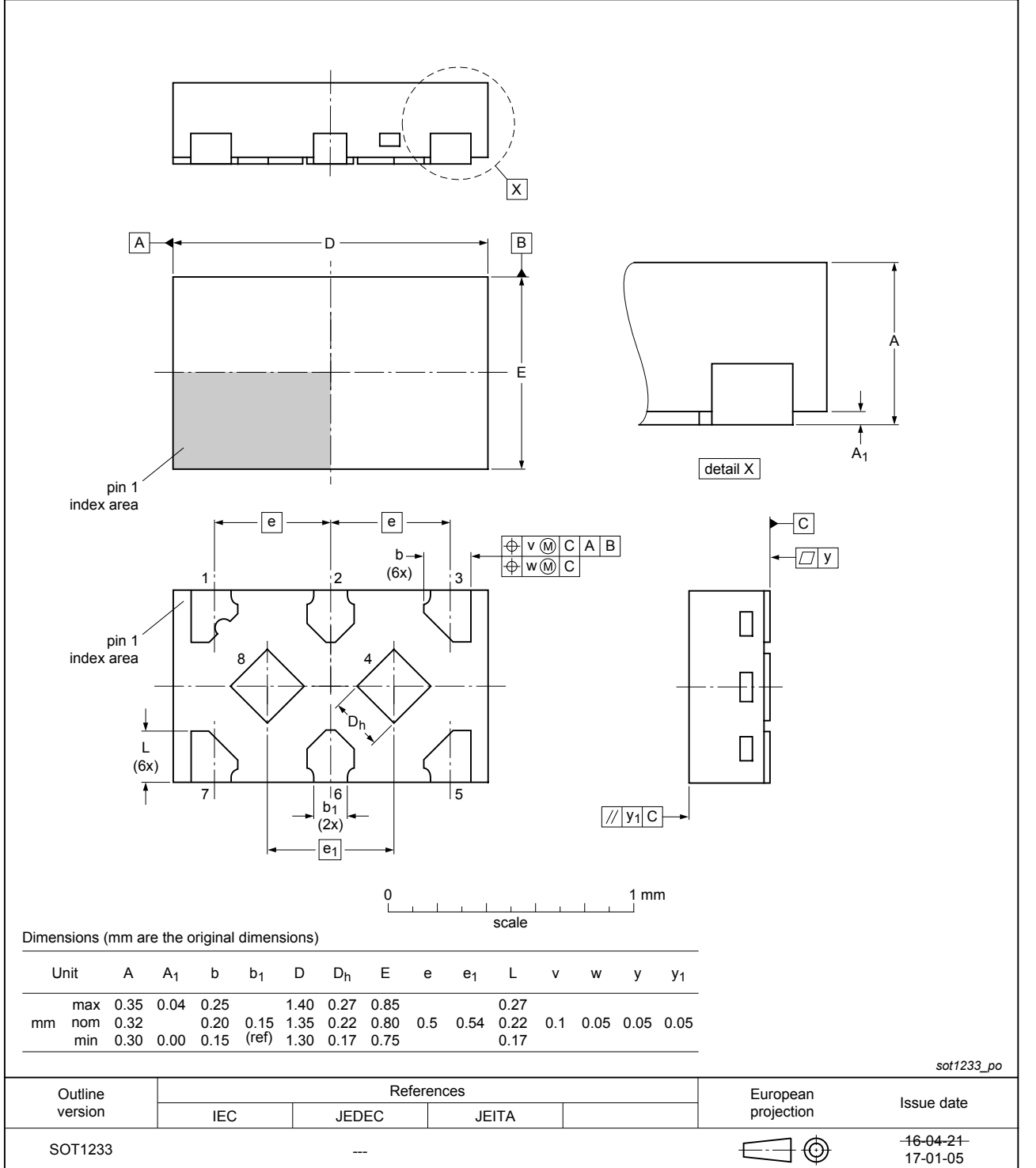


Figure 17. Package outline SOT1233 (X2SON8)

13 Abbreviations

Table 12. Abbreviations

| Acronym | Description |
|---------|-------------------------|
| CDM | Charged Device Model |
| DUT | Device Under Test |
| ESD | ElectroStatic Discharge |
| HBM | Human Body Model |
| MM | Machine Model |

14 Revision history

Table 13. Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|-----------------|--|--------------------|---------------|-----------------|
| 74AUP2G125 v.12 | 20170703 | Product data sheet | - | 74AUP2G125 v.11 |
| Modifications: | <ul style="list-style-type: none"> The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia. Legal texts have been adapted to the new company name where appropriate. Figure 7 and Figure 17 (drawings SOT1233/X2SON8) updated Type number 74AUP2G125GD removed. | | | |
| 74AUP2G125 v.11 | 20161028 | Product data sheet | - | 74AUP2G125 v.10 |
| Modifications: | <ul style="list-style-type: none"> Added type number 74AUP2G125GX (SOT1233/X2SON8) | | | |
| 74AUP2G125 v.10 | 20130208 | Product data sheet | - | 74AUP2G125 v.9 |
| Modifications: | <ul style="list-style-type: none"> For type number 74AUP2G125GD XSON8U has changed to XSON8. | | | |
| 74AUP2G125 v.9 | 20120607 | Product data sheet | - | 74AUP2G125 v.8 |
| 74AUP2G125 v.8 | 20111202 | Product data sheet | - | 74AUP2G125 v.7 |
| 74AUP2G125 v.7 | 20100921 | Product data sheet | - | 74AUP2G125 v.6 |
| 74AUP2G125 v.6 | 20091127 | Product data sheet | - | 74AUP2G125 v.5 |
| 74AUP2G125 v.5 | 20090202 | Product data sheet | - | 74AUP2G125 v.4 |
| 74AUP2G125 v.4 | 20090122 | Product data sheet | - | 74AUP2G125 v.3 |
| 74AUP2G125 v.3 | 20080409 | Product data sheet | - | 74AUP2G125 v.2 |
| 74AUP2G125 v.2 | 20070419 | Product data sheet | - | 74AUP2G125 v.1 |
| 74AUP2G125 v.1 | 20061017 | Product data sheet | - | - |

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".

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