

74AUP2GU04

Low-power dual unbuffered inverter

Rev. 6 — 28 January 2019

Product data sheet

1. General description

The 74AUP2GU04 provides two unbuffered inverting gates.

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.

2. Features and benefits

- Wide supply voltage range from 0.8 V to 3.6 V
- High noise immunity
- 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 JESD 78 Class II
- Inputs accept voltages up to 3.6 V
- Multiple package options
- Specified from $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ and $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$

3. Ordering information

Table 1. Ordering information

| Type number | Package | | | |
|--------------|---|-------|---|---------|
| | Temperature range | Name | Description | Version |
| 74AUP2GU04GW | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | SC-88 | plastic surface-mounted package; 6 leads | SOT363 |
| 74AUP2GU04GM | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | XSON6 | plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm | SOT886 |
| 74AUP2GU04GF | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | XSON6 | plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1 x 0.5 mm | SOT891 |
| 74AUP2GU04GN | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | XSON6 | extremely thin small outline package; no leads; 6 terminals; body 0.9 x 1.0 x 0.35 mm | SOT1115 |
| 74AUP2GU04GS | $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$ | XSON6 | extremely thin small outline package; no leads; 6 terminals; body 1.0 x 1.0 x 0.35 mm | SOT1202 |

4. Marking

Table 2. Marking

| Type number | Marking code ^[1] |
|--------------|-----------------------------|
| 74AUP2GU04GW | aD |
| 74AUP2GU04GM | aD |
| 74AUP2GU04GF | aD |

| Type number | Marking code[1] |
|--------------|-----------------|
| 74AUP2GU04GN | aD |
| 74AUP2GU04GS | aD |

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

5. Functional diagram

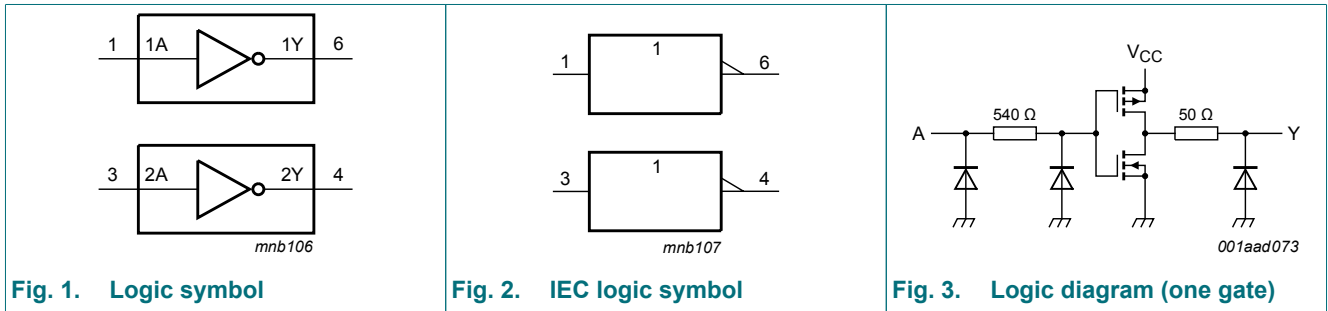


Fig. 1. Logic symbol

Fig. 2. IEC logic symbol

Fig. 3. Logic diagram (one gate)

6. Pinning information

6.1. Pinning

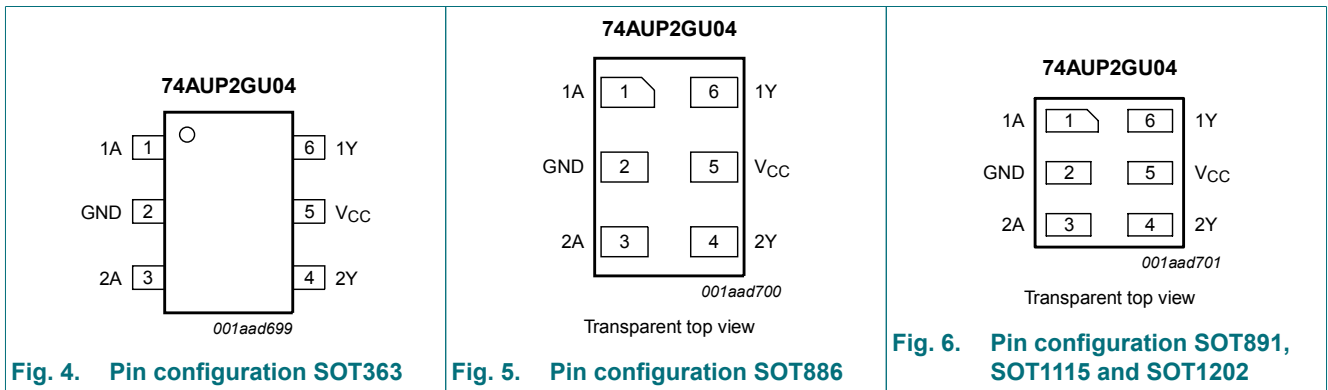


Fig. 4. Pin configuration SOT363

Fig. 5. Pin configuration SOT886

Fig. 6. Pin configuration SOT891, SOT1115 and SOT1202

6.2. Pin description

Table 3. Pin description

| Symbol | Pin | Description |
|-----------------|-----|----------------|
| 1A | 1 | data input |
| GND | 2 | ground (0 V) |
| 2A | 3 | data input |
| 2Y | 4 | data output |
| V _{CC} | 5 | supply voltage |
| 1Y | 6 | data output |

7. Functional description

Table 4. Function table

H = HIGH voltage level; L = LOW voltage level.

| Input | Output |
|-------|--------|
| nA | nY |
| L | H |
| H | L |

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 |
| I_{IK} | input clamping current | $V_I < 0$ V | -50 | - | mA |
| V_I | input voltage | | [1] -0.5 | +4.6 | V |
| I_{OK} | output clamping current | $V_O < 0$ V | -50 | - | mA |
| V_O | output voltage | | [2] -0.5 | $V_{CC} + 0.5$ | V |
| 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 | [3] - | 250 | mW |

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

[2] The output voltage ratings may be exceeded if the output current ratings are observed.

[3] For SC-88 packages: above 87.5 °C the value of P_{tot} derates linearly with 4.0 mW/K.

For XSON6 packages: above 118 °C the value of P_{tot} derates linearly with 7.8 mW/K.

9. Recommended operating conditions

Table 6. Recommended 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 | | 0 | V_{CC} | 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 | 0 | 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_{amb} = 25 °C | | | | | | |
| V _{IH} | HIGH-level input voltage | V _{CC} = 0.8 V to 3.6 V | 0.75 × V _{CC} | - | - | V |
| V _{IL} | LOW-level input voltage | V _{CC} = 0.8 V to 3.6 V | - | - | 0.25 × V _{CC} | V |
| V _{OH} | HIGH-level output voltage | V _I = GND or V _{CC} | | | | |
| | | I _O = -20 μA; V _{CC} = 0.8 V to 3.6 V | V _{CC} - 0.1 | - | - | V |
| | | I _O = -1.1 mA; V _{CC} = 1.1 V | 0.75 × V _{CC} | - | - | V |
| | | I _O = -1.7 mA; V _{CC} = 1.4 V | 1.11 | - | - | V |
| | | I _O = -1.9 mA; V _{CC} = 1.65 V | 1.32 | - | - | V |
| | | I _O = -2.3 mA; V _{CC} = 2.3 V | 2.05 | - | - | V |
| | | I _O = -3.1 mA; V _{CC} = 2.3 V | 1.9 | - | - | V |
| | | I _O = -2.7 mA; V _{CC} = 3.0 V | 2.72 | - | - | V |
| V _{OL} | LOW-level output voltage | V _I = GND or V _{CC} | | | | |
| | | 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 | - | - | 0.31 | V |
| | | I _O = 1.9 mA; V _{CC} = 1.65 V | - | - | 0.31 | V |
| | | I _O = 2.3 mA; V _{CC} = 2.3 V | - | - | 0.31 | V |
| | | I _O = 3.1 mA; V _{CC} = 2.3 V | - | - | 0.44 | V |
| | | I _O = 2.7 mA; V _{CC} = 3.0 V | - | - | 0.31 | V |
| I _I | input leakage current | V _I = GND to 3.6 V; V _{CC} = 0 V to 3.6 V | - | - | ±0.1 | μA |
| | | V _I = GND or V _{CC} ; I _O = 0 A; V _{CC} = 0.8 V to 3.6 V | - | - | 0.5 | μA |
| C _I | input capacitance | V _{CC} = 0 V to 3.6 V; V _I = GND or V _{CC} | - | 1.5 | - | pF |
| C _O | output capacitance | V _O = GND; V _{CC} = 0 V | - | 1.8 | - | pF |
| T_{amb} = -40 °C to +85 °C | | | | | | |
| V _{IH} | HIGH-level input voltage | V _{CC} = 0.8 V to 3.6 V | 0.75 × V _{CC} | - | - | V |
| V _{IL} | LOW-level input voltage | V _{CC} = 0.8 V to 3.6 V | - | - | 0.25 × V _{CC} | V |
| V _{OH} | HIGH-level output voltage | V _I = GND or V _{CC} | | | | |
| | | I _O = -20 μA; V _{CC} = 0.8 V to 3.6 V | V _{CC} - 0.1 | - | - | V |
| | | I _O = -1.1 mA; V _{CC} = 1.1 V | 0.7 × V _{CC} | - | - | V |
| | | I _O = -1.7 mA; V _{CC} = 1.4 V | 1.03 | - | - | V |
| | | I _O = -1.9 mA; V _{CC} = 1.65 V | 1.30 | - | - | V |
| | | I _O = -2.3 mA; V _{CC} = 2.3 V | 1.97 | - | - | V |
| | | I _O = -3.1 mA; V _{CC} = 2.3 V | 1.85 | - | - | V |
| | | I _O = -2.7 mA; V _{CC} = 3.0 V | 2.67 | - | - | V |
| I _I | input leakage current | V _I = GND to 3.6 V; V _{CC} = 0 V to 3.6 V | - | - | ±0.1 | μA |
| | | V _I = GND or V _{CC} ; I _O = 0 A; V _{CC} = 0.8 V to 3.6 V | - | - | 0.5 | μA |
| C _I | input capacitance | V _{CC} = 0 V to 3.6 V; V _I = GND or V _{CC} | - | 1.5 | - | pF |
| C _O | output capacitance | V _O = GND; V _{CC} = 0 V | - | 1.8 | - | pF |

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---------------------------|---|------------------------|-----|------------------------|------|
| V _{OL} | LOW-level output voltage | V _I = GND or V _{CC} | | | | |
| | | 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 _{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 |
| T_{amb} = -40 °C to +125 °C | | | | | | |
| V _{IH} | HIGH-level input voltage | V _{CC} = 0.8 V to 3.6 V | 0.75 × V _{CC} | - | - | V |
| V _{IL} | LOW-level input voltage | V _{CC} = 0.8 V to 3.6 V | - | - | 0.25 × V _{CC} | V |
| V _{OH} | HIGH-level output voltage | V _I = GND or V _{CC} | | | | |
| | | 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 = GND or V _{CC} | | | | |
| | | 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 _{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 |

11. Dynamic characteristics

Table 8. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 8.

| 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 Fig. 7 [2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 6.2 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 0.9 | 2.3 | 4.4 | 0.9 | 4.8 | 5.3 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 0.7 | 1.7 | 3.1 | 0.6 | 3.4 | 3.8 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 0.5 | 1.4 | 2.6 | 0.5 | 2.9 | 3.2 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 0.4 | 1.1 | 2.0 | 0.4 | 2.3 | 2.6 | ns |
| V _{CC} = 3.0 V to 3.6 V | 0.3 | 1.0 | 1.8 | 0.3 | 2.1 | 2.4 | ns | | |
| C_L = 10 pF | | | | | | | | | |
| t _{pd} | propagation delay | nA to nY; see Fig. 7 [2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 9.6 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 1.2 | 3.1 | 6.1 | 1.2 | 6.8 | 7.5 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 1.0 | 2.3 | 4.0 | 0.9 | 4.6 | 5.1 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 0.8 | 1.9 | 3.3 | 0.7 | 3.8 | 4.2 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 0.6 | 1.5 | 2.7 | 0.6 | 3.1 | 3.5 | ns |
| V _{CC} = 3.0 V to 3.6 V | 0.5 | 1.3 | 2.4 | 0.5 | 2.7 | 3.0 | ns | | |
| C_L = 15 pF | | | | | | | | | |
| t _{pd} | propagation delay | nA to nY; see Fig. 7 [2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 13.0 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 1.6 | 3.8 | 7.9 | 1.4 | 8.8 | 9.7 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 1.3 | 2.8 | 4.9 | 1.1 | 5.7 | 6.3 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 1.0 | 2.3 | 4.0 | 0.9 | 4.7 | 5.2 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 0.8 | 1.9 | 3.2 | 0.8 | 3.7 | 4.1 | ns |
| V _{CC} = 3.0 V to 3.6 V | 0.7 | 1.6 | 2.9 | 0.7 | 3.3 | 3.7 | ns | | |
| C_L = 30 pF | | | | | | | | | |
| t _{pd} | propagation delay | nA to nY; see Fig. 7 [2] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 23.2 | - | - | - | - | ns |
| | | V _{CC} = 1.1 V to 1.3 V | 2.4 | 6.0 | 13.1 | 2.2 | 14.8 | 16.3 | ns |
| | | V _{CC} = 1.4 V to 1.6 V | 2.0 | 4.2 | 7.6 | 1.8 | 9.0 | 9.9 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | 1.7 | 3.6 | 6.1 | 1.5 | 7.2 | 8.0 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | 1.4 | 2.9 | 4.8 | 1.3 | 5.7 | 6.3 | ns |
| V _{CC} = 3.0 V to 3.6 V | 1.2 | 2.5 | 4.3 | 1.1 | 5.1 | 5.7 | 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 | f _i = 1 MHz; V _I = GND to V _{CC} [3][4] | | | | | | | |
| | | V _{CC} = 0.8 V | - | 1.1 | - | - | - | - | pF |
| | | V _{CC} = 1.1 V to 1.3 V | - | 1.1 | - | - | - | - | pF |
| | | V _{CC} = 1.4 V to 1.6 V | - | 1.3 | - | - | - | - | pF |
| | | V _{CC} = 1.65 V to 1.95 V | - | 1.5 | - | - | - | - | pF |
| | | V _{CC} = 2.3 V to 2.7 V | - | 3.0 | - | - | - | - | pF |
| | | V _{CC} = 3.0 V to 3.6 V | - | 4.5 | - | - | - | - | pF |

- [1] All typical values are measured at nominal V_{CC}.
- [2] t_{pd} is the same as t_{PLH} and t_{PHL}.
- [3] All specified values are the average typical values over all stated loads.
- [4] 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 = load capacitance in pF;
 V_{CC} = supply voltage in V;
 N = number of inputs switching;
 Σ(C_L × V_{CC}² × f_o) = sum of the outputs.

11.1. Waveforms and test circuit

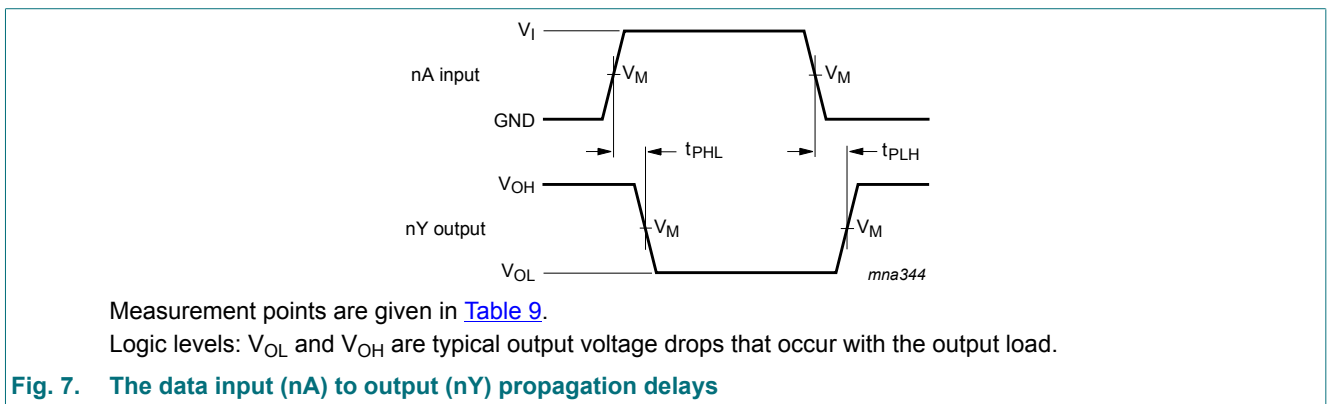
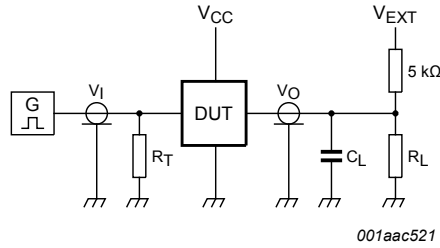


Table 9. Measurement points

| 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 |



Test data is given in [Table 10](#).

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.

Fig. 8. Test circuit for measuring switching times

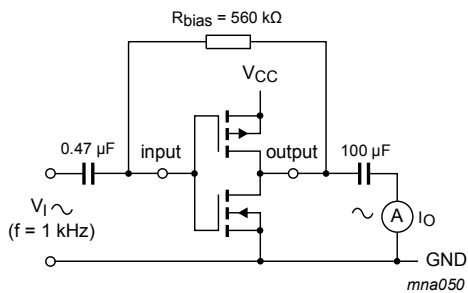
Table 10. Test data

| 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, set-up and hold times and pulse width $R_L = 1 \text{ M}\Omega$.

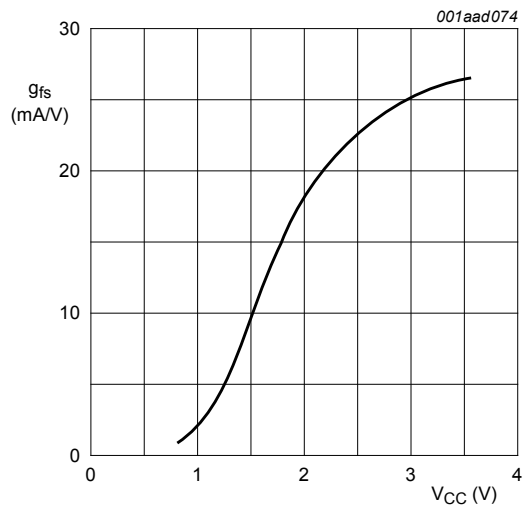
12. Additional characteristics



$$g_{fs} = \frac{\Delta I_O}{\Delta V_I}$$

V_O is constant.

Fig. 9. Test set-up for measuring forward transconductance



$T_{amb} = 25 \text{ }^\circ\text{C}$.

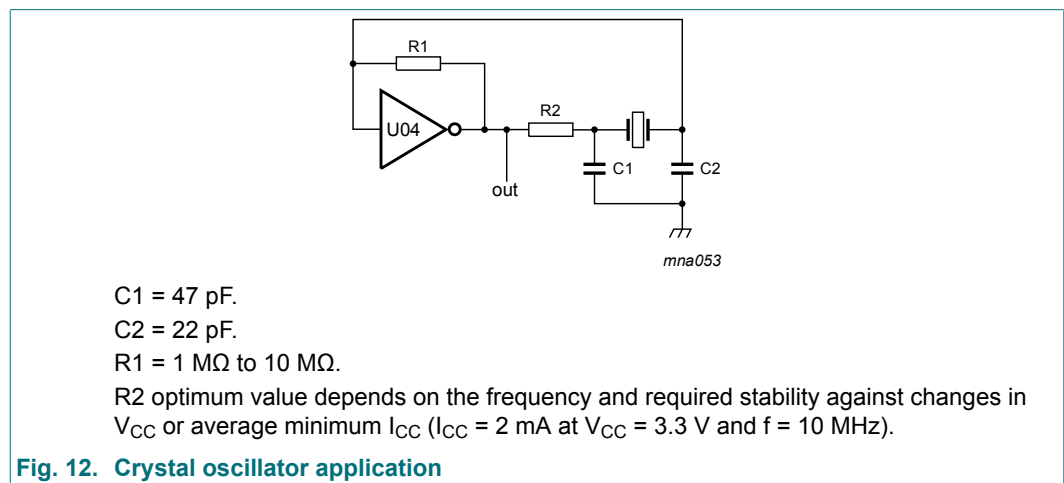
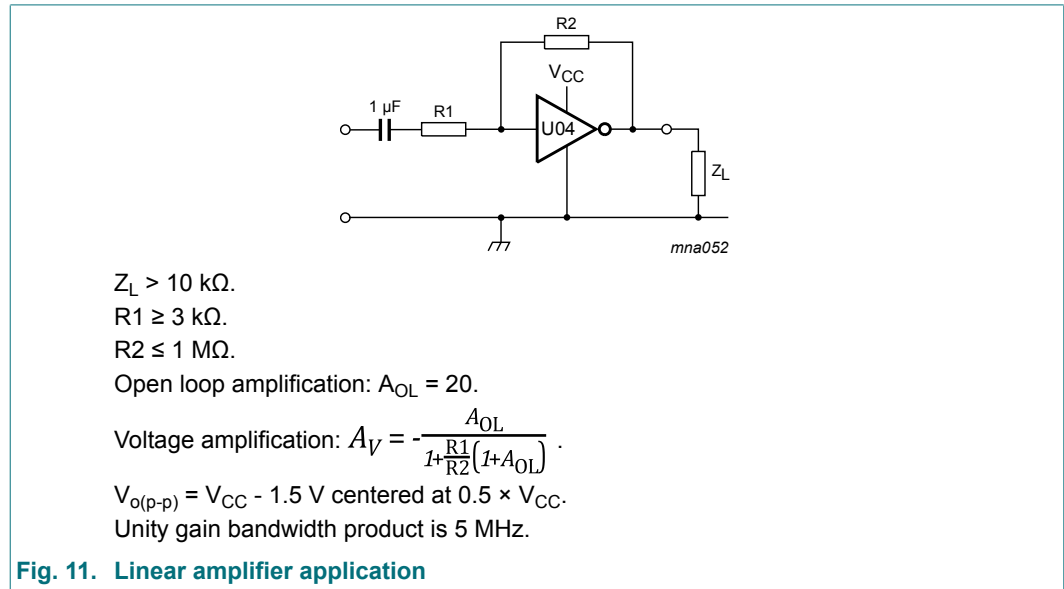
Fig. 10. Typical forward transconductance as a function of supply voltage

13. Application information

Some applications for the 74AUP2GU04 are:

- Linear amplifier (see [Fig. 11](#))
- Crystal oscillator (see [Fig. 12](#))

Remark: All values given are typical values unless otherwise specified.



14. Package outline

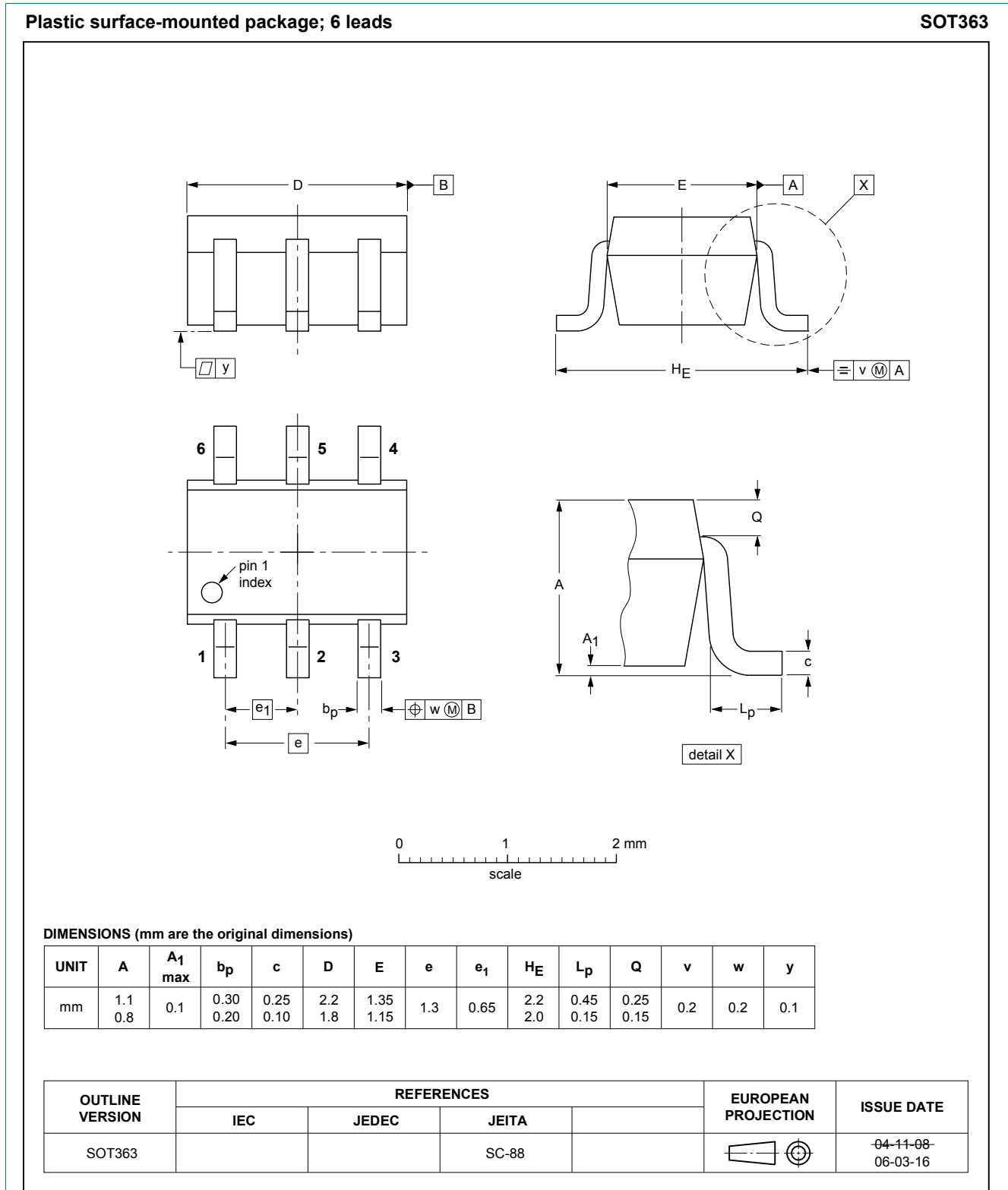
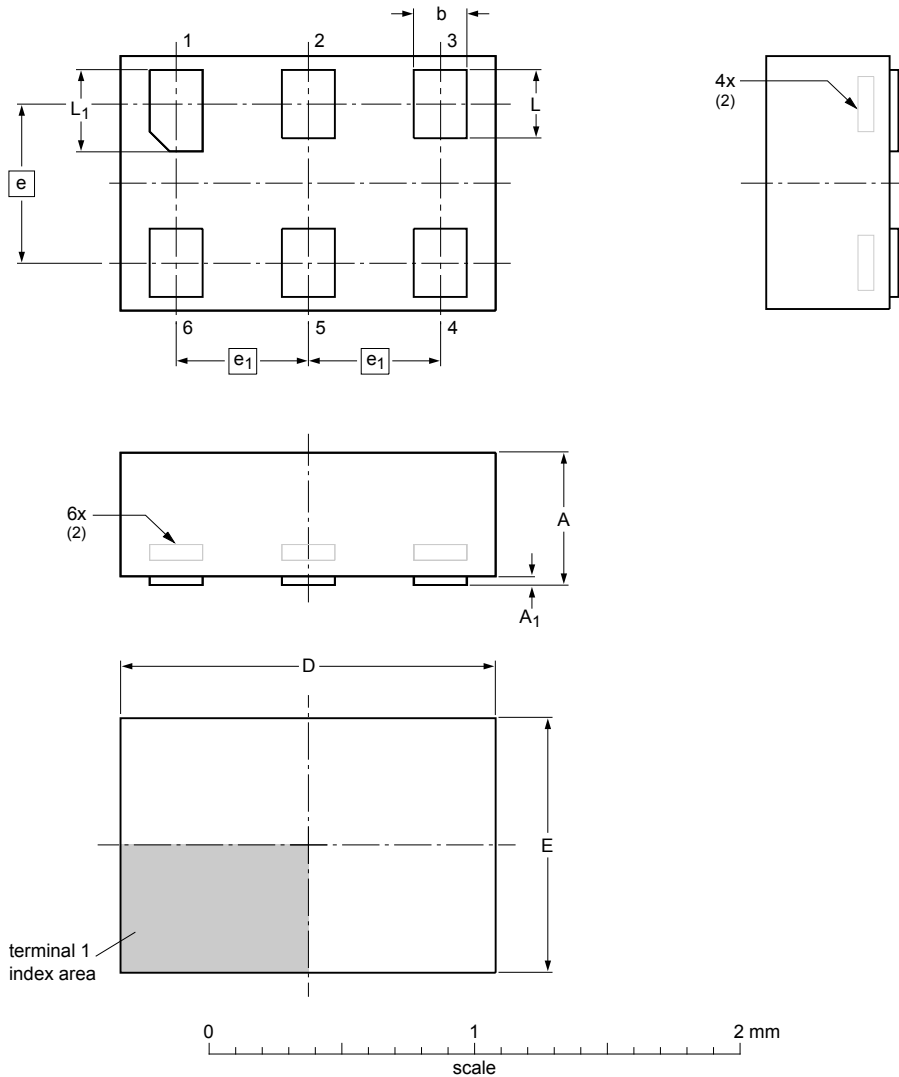


Fig. 13. Package outline SOT363 (SC-88)

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm

SOT886



Dimensions (mm are the original dimensions)

| Unit | A ⁽¹⁾ | A ₁ | b | D | E | e | e ₁ | L | L ₁ |
|------|------------------|----------------|------|------|------|-----|----------------|------|----------------|
| mm | max 0.5 | 0.04 | 0.25 | 1.50 | 1.05 | 0.6 | 0.5 | 0.35 | 0.40 |
| | nom | | 0.20 | 1.45 | 1.00 | 0.6 | 0.5 | 0.30 | 0.35 |
| | min | | 0.17 | 1.40 | 0.95 | | | 0.27 | 0.32 |

Notes

- Including plating thickness.
- Can be visible in some manufacturing processes.

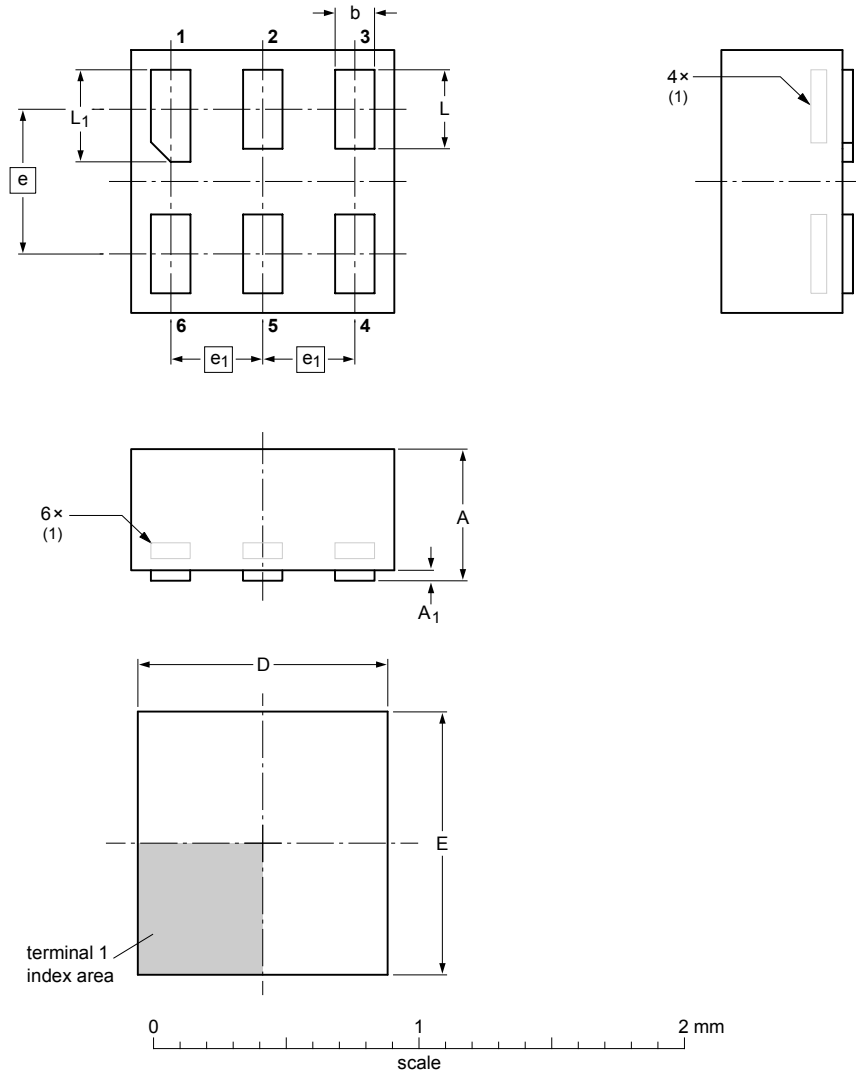
sot886_po

| Outline version | References | | | European projection | Issue date |
|-----------------|------------|--------|-------|---------------------|------------------------|
| | IEC | JEDEC | JEITA | | |
| SOT886 | | MO-252 | | | -04-07-22- 12-01-05 |

Fig. 14. Package outline SOT886 (XSON6)

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1 x 0.5 mm

SOT891



DIMENSIONS (mm are the original dimensions)

| UNIT | A max | A ₁ max | b | D | E | e | e ₁ | L | L ₁ |
|------|----------|-----------------------|--------------|--------------|--------------|------|----------------|--------------|----------------|
| mm | 0.5 | 0.04 | 0.20 0.12 | 1.05 0.95 | 1.05 0.95 | 0.55 | 0.35 | 0.35 0.27 | 0.40 0.32 |

Note

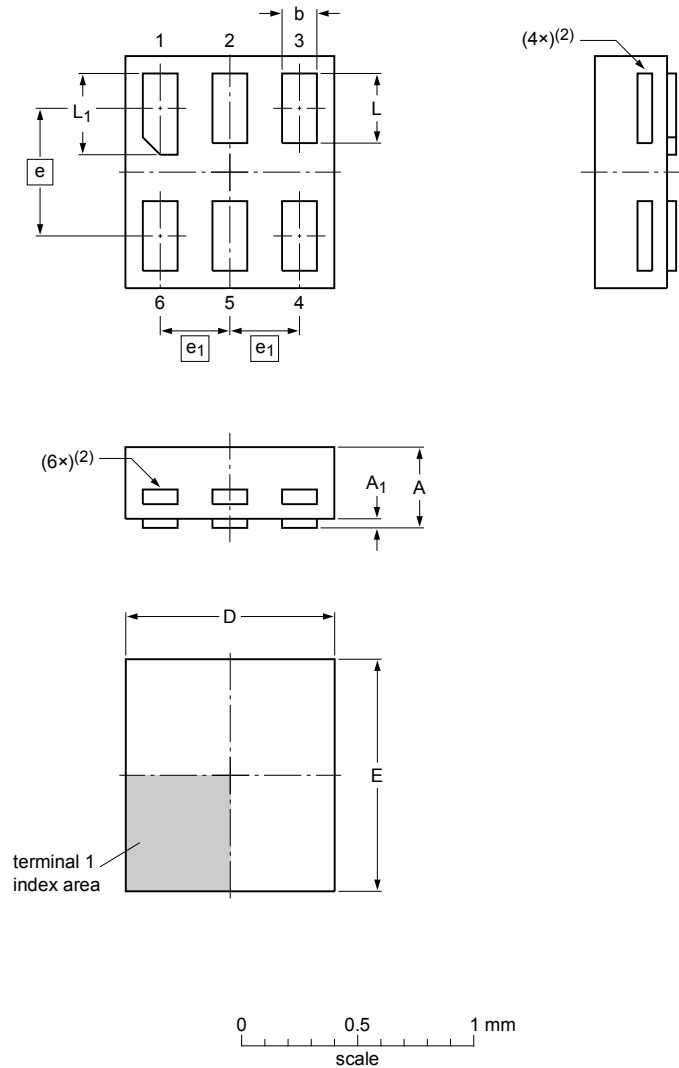
1. Can be visible in some manufacturing processes.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|--------------------|------------|-------|-------|--|------------------------|-----------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT891 | | | | | | -05-04-06 07-05-15 |

Fig. 15. Package outline SOT891 (XSON6)

**XSON6: extremely thin small outline package; no leads;
6 terminals; body 0.9 x 1.0 x 0.35 mm**

SOT1115



Dimensions

| Unit | A ⁽¹⁾ | A ₁ | b | D | E | e | e ₁ | L | L ₁ |
|------|------------------|----------------|------|------|------|------|----------------|------|----------------|
| mm | max 0.35 | 0.04 | 0.20 | 0.95 | 1.05 | | | 0.35 | 0.40 |
| | nom | | 0.15 | 0.90 | 1.00 | 0.55 | 0.3 | 0.30 | 0.35 |
| | min | | 0.12 | 0.85 | 0.95 | | | 0.27 | 0.32 |

Note

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

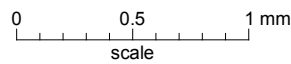
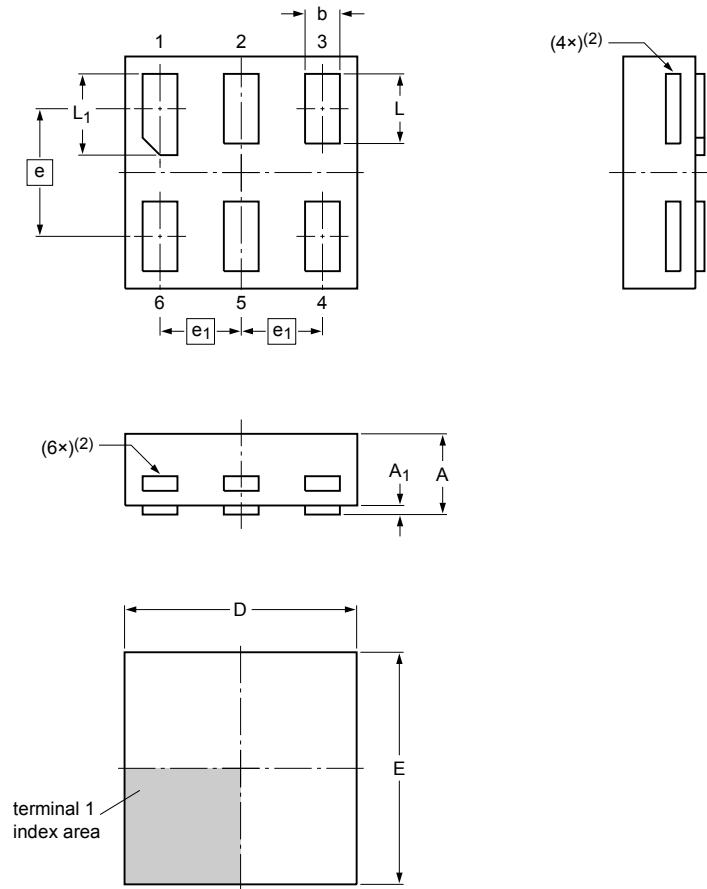
sot1115_po

| Outline version | References | | | | European projection | Issue date |
|-----------------|------------|-------|-------|--|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT1115 | | | | | | 10-04-02 10-04-07 |

Fig. 16. Package outline SOT1115 (XSON6)

XSON6: extremely thin small outline package; no leads;
6 terminals; body 1.0 x 1.0 x 0.35 mm

SOT1202



Dimensions

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

Note

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

sot1202_po

| Outline version | References | | | European projection | Issue date |
|-----------------|------------|-------|-------|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | |
| SOT1202 | | | | | 10-04-02 10-04-06 |

Fig. 17. Package outline SOT1202 (XSON6)

15. Abbreviations

Table 11. Abbreviations

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

16. Revision history

Table 12. Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|----------------|---|--------------------|---------------|----------------|
| 74AUP2GU04 v.6 | 20190128 | Product data sheet | - | 74AUP2GU04 v.5 |
| 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. | | | |
| 74AUP2GU04 v.5 | 20131011 | Product data sheet | - | 74AUP2GU04 v.4 |
| Modifications: | <ul style="list-style-type: none"> Package outline drawing of SOT886 (Fig. 14) modified. | | | |
| 74AUP2GU04 v.4 | 20111207 | Product data sheet | - | 74AUP2GU04 v.3 |
| Modifications: | <ul style="list-style-type: none"> Legal pages updated. | | | |
| 74AUP2GU04 v.3 | 20101110 | Product data sheet | - | 74AUP2GU04 v.2 |
| 74AUP2GU04 v.2 | 20090703 | Product data sheet | - | 74AUP2GU04 v.1 |
| 74AUP2GU04 v.1 | 20061215 | Product data sheet | - | - |

17. Legal information

Data sheet status

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

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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Date of release: 28 January 2019



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