

# 74LVC1G08

Single 2-input AND gate

Rev. 12 — 16 January 2018

Product data sheet

## 1 General description

The 74LVC1G08 provides one 2-input AND function.

Inputs can be driven from either 3.3 V or 5 V devices. This feature allows the use of these devices as translators in mixed 3.3 V and 5 V applications.

Schmitt trigger action at all inputs makes the circuit tolerant of slower input rise and fall time.

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

## 2 Features and benefits

- Wide supply voltage range from 1.65 V to 5.5 V
- High noise immunity
- Complies with JEDEC standard:
  - JESD8-7 (1.65 V to 1.95 V)
  - JESD8-5 (2.3 V to 2.7 V)
  - JESD8-B/JESD36 (2.7 V to 3.6 V)
- $\pm 24$  mA output drive ( $V_{CC} = 3.0$  V)
- CMOS low power consumption
- Latch-up performance  $\leq 250$  mA
- Direct interface with TTL levels
- Inputs accept voltages up to 5 V
- 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  $-40$  °C to  $+125$  °C

**nexperia**

### 3 Ordering information

Table 1. Ordering information

| Type number | Package           | Temperature range | Name | Description  | Version  |
|-------------|-------------------|-------------------|------|--|----------|
| 74LVC1G08GW | -40 °C to +125 °C | TSSOP5            |      | plastic thin shrink small outline package; 5 leads; body width 1.25 mm   | SOT353-1 |
| 74LVC1G08GV | -40 °C to +125 °C | SC-74A            |      | plastic surface-mounted package; 5 leads   | SOT753   |
| 74LVC1G08GM | -40 °C to +125 °C | XSON6             |      | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm                    | SOT886   |
| 74LVC1G08GF | -40 °C to +125 °C | XSON6             |      | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1 × 0.5 mm                       | SOT891   |
| 74LVC1G08GN | -40 °C to +125 °C | XSON6             |      | extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm                          | SOT1115  |
| 74LVC1G08GS | -40 °C to +125 °C | XSON6             |      | extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm                          | SOT1202  |
| 74LVC1G08GX | -40 °C to +125 °C | X2SON5            |      | plastic thermal enhanced extremely thin small outline package; no leads; 5 terminals; body 0.8 × 0.8 × 0.35 mm | SOT1226  |

### 4 Marking

Table 2. Marking

| Type number | Marking code <sup>[1]</sup> |
|-------------|-----------------------------|
| 74LVC1G08GW | VE                          |
| 74LVC1G08GV | V08                         |
| 74LVC1G08GM | VE                          |
| 74LVC1G08GF | VE                          |
| 74LVC1G08GN | VE                          |
| 74LVC1G08GS | VE                          |
| 74LVC1G08GX | VE                          |

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

### 5 Functional diagram

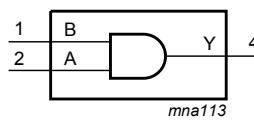


Figure 1. Logic symbol

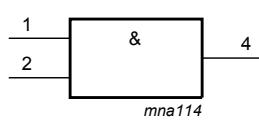


Figure 2. IEC logic symbol

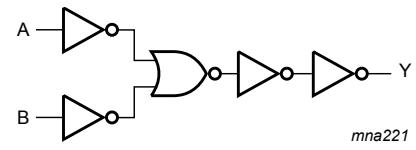


Figure 3. Logic diagram

## 6 Pinning information

### 6.1 Pinning

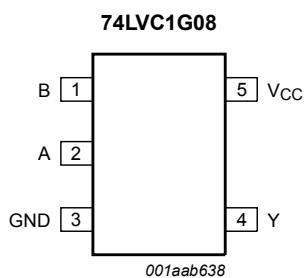


Figure 4. Pin configuration SOT353-1 (TSSOP5) and SOT753 (SC-74A)

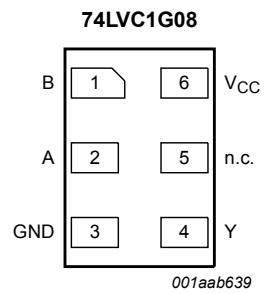


Figure 5. Pin configuration SOT886 (XSON6)

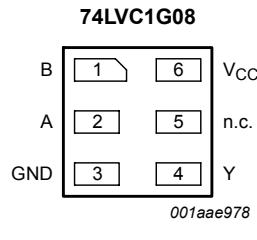


Figure 6. Pin configuration SOT891 (XSON6), SOT1115 (XSON6) and SOT1202 (XSON6)

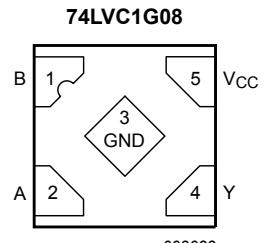


Figure 7. Pin configuration SOT1226 (X2SON5)

### 6.2 Pin description

Table 3. Pin description

| Symbol          | Pin                       |       | Description    |
|-----------------|---------------------------|-------|----------------|
|                 | TSSOP5, SC-74A and X2SON5 | XSON6 |                |
| B               | 1                         | 1     | data input     |
| A               | 2                         | 2     | data input     |
| GND             | 3                         | 3     | ground (0 V)   |
| Y               | 4                         | 4     | data output    |
| n.c.            | -                         | 5     | not connected  |
| V <sub>CC</sub> | 5                         | 6     | supply voltage |

## 7 Functional description

Table 4. Function table <sup>[1]</sup>

| Input |   | Output |
|-------|---|--------|
| A     | B | Y      |
| L     | L | L      |
| L     | H | L      |
| H     | L | L      |
| H     | H | H      |

[1] H = HIGH voltage level; L = LOW voltage level

## 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 <sub>CC</sub>  | supply voltage          |  | -0.5    | +6.5 | V                     |
| I <sub>IK</sub>  | input clamping current  | V <sub>I</sub> < 0 V                                     | -50     | -    | mA                    |
| V <sub>I</sub>   | input voltage           |  | [1]     | -0.5 | +6.5                  |
| I <sub>OK</sub>  | output clamping current | V <sub>O</sub> > V <sub>CC</sub> or V <sub>O</sub> < 0 V | -       | ±50  | mA                    |
| V <sub>O</sub>   | output voltage          | Active mode  | [1]     | -0.5 | V <sub>CC</sub> + 0.5 |
|                  |                         | Power-down mode  | [1] [2] | -0.5 | +6.5                  |
| I <sub>O</sub>   | output current          | V <sub>O</sub> = 0 V to V <sub>CC</sub>                  | -       | ±50  | mA                    |
| I <sub>CC</sub>  | supply current          |  | -       | 100  | mA                    |
| I <sub>GND</sub> | ground current          |  | -100    | -    | mA                    |
| P <sub>tot</sub> | total power dissipation | T <sub>amb</sub> = -40 °C to +125 °C                     | [3]     | -    | 250                   |
| T <sub>stg</sub> | storage temperature     |  | -65     | +150 | °C                    |

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

[2] When V<sub>CC</sub> = 0 V (Power-down mode), the output voltage can be 5.5 V in normal operation.

[3] For TSSOP5 and SC-74A packages: above 87.5 °C the value of P<sub>tot</sub> derates linearly with 4.0 mW/K.

For XSON6 and X2SON5 package: above 118 °C the value of P<sub>tot</sub> derates linearly with 7.8 mW/K.

## 9 Recommended operating conditions

Table 6. Recommended operating conditions

| Symbol              | Parameter                           | Conditions                      | Min  | Typ | Max      | Unit |
|---------------------|-------------------------------------|---------------------------------|------|-----|----------|------|
| $V_{CC}$            | supply voltage                      |                                 | 1.65 | -   | 5.5      | V    |
| $V_I$               | input voltage                       |                                 | 0    | -   | 5.5      | V    |
| $V_O$               | output voltage                      | Active mode                     | 0    | -   | $V_{CC}$ | V    |
|                     |                                     | $V_{CC} = 0$ V; Power-down mode | 0    | -   | 5.5      | V    |
| $T_{amb}$           | ambient temperature                 |                                 | -40  | -   | +125     | °C   |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CC} = 1.65$ V to 2.7 V      | -    | -   | 20       | ns/V |
|                     |                                     | $V_{CC} = 2.7$ V to 5.5 V       | -    | -   | 10       | ns/V |

## 10 Static characteristics

Table 7. Static characteristics

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

| Symbol   | Parameter                 | Conditions                                     | -40 °C to +85 °C |                    |               | -40 °C to +125 °C |               | Unit |
|----------|---------------------------|--|------------------|--------------------|---------------|-------------------|---------------|------|
|          |                           |  | Min              | Typ <sup>[1]</sup> | Max           | Min               | Max           |      |
| $V_{IH}$ | HIGH-level input voltage  | $V_{CC} = 1.65$ V to 1.95 V                    | 0.65 $V_{CC}$    | -                  | -             | 0.65 $V_{CC}$     | -             | V    |
|          |                           | $V_{CC} = 2.3$ V to 2.7 V                      | 1.7              | -                  | -             | 1.7               | -             | V    |
|          |                           | $V_{CC} = 2.7$ V to 3.6 V                      | 2.0              | -                  | -             | 2.0               | -             | V    |
|          |                           | $V_{CC} = 4.5$ V to 5.5 V                      | 0.7 $V_{CC}$     | -                  | -             | 0.7 $V_{CC}$      | -             | V    |
| $V_{IL}$ | LOW-level input voltage   | $V_{CC} = 1.65$ V to 1.95 V                    | -                | -                  | 0.35 $V_{CC}$ | -                 | 0.35 $V_{CC}$ | V    |
|          |                           | $V_{CC} = 2.3$ V to 2.7 V                      | -                | -                  | 0.7           | -                 | 0.7           | V    |
|          |                           | $V_{CC} = 2.7$ V to 3.6 V                      | -                | -                  | 0.8           | -                 | 0.8           | V    |
|          |                           | $V_{CC} = 4.5$ V to 5.5 V                      | -                | -                  | 0.3 $V_{CC}$  | -                 | 0.3 $V_{CC}$  | V    |
| $V_{OH}$ | HIGH-level output voltage | $V_I = V_{IH}$ or $V_{IL}$                     |                  |                    |               |                   |               |      |
|          |                           | $I_O = -100$ µA;<br>$V_{CC} = 1.65$ V to 5.5 V | $V_{CC} - 0.1$   | -                  | -             | $V_{CC} - 0.1$    | -             | V    |
|          |                           | $I_O = -4$ mA; $V_{CC} = 1.65$ V               | 1.2              | -                  | -             | 0.95              | -             | V    |
|          |                           | $I_O = -8$ mA; $V_{CC} = 2.3$ V                | 1.9              | -                  | -             | 1.7               | -             | V    |
|          |                           | $I_O = -12$ mA; $V_{CC} = 2.7$ V               | 2.2              | -                  | -             | 1.9               | -             | V    |
|          |                           | $I_O = -24$ mA; $V_{CC} = 3.0$ V               | 2.3              | -                  | -             | 2.0               | -             | V    |
|          |                           | $I_O = -32$ mA; $V_{CC} = 4.5$ V               | 3.8              | -                  | -             | 3.4               | -             | V    |

| Symbol           | Parameter                 | Conditions  | -40 °C to +85 °C |                    |      | -40 °C to +125 °C |      | Unit |
|------------------|---------------------------|---|------------------|--------------------|------|-------------------|------|------|
|                  |                           |   | Min              | Typ <sup>[1]</sup> | Max  | Min               | Max  |      |
| V <sub>OL</sub>  | LOW-level output voltage  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>   |                  |                    |      |                   |      |      |
|                  |                           | I <sub>O</sub> = 100 µA; V <sub>CC</sub> = 1.65 V to 5.5 V  | -                | -                  | 0.10 | -                 | 0.10 | V    |
|                  |                           | I <sub>O</sub> = 4 mA; V <sub>CC</sub> = 1.65 V   | -                | -                  | 0.45 | -                 | 0.70 | V    |
|                  |                           | I <sub>O</sub> = 8 mA; V <sub>CC</sub> = 2.3 V  | -                | -                  | 0.30 | -                 | 0.45 | V    |
|                  |                           | I <sub>O</sub> = 12 mA; V <sub>CC</sub> = 2.7 V   | -                | -                  | 0.40 | -                 | 0.60 | V    |
|                  |                           | I <sub>O</sub> = 24 mA; V <sub>CC</sub> = 3.0 V   | -                | -                  | 0.55 | -                 | 0.80 | V    |
|                  |                           | I <sub>O</sub> = 32 mA; V <sub>CC</sub> = 4.5 V   | -                | -                  | 0.55 | -                 | 0.80 | V    |
| I <sub>I</sub>   | input leakage current     | V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 0 V to 5.5 V   | -                | ±0.1               | ±1   | -                 | ±1   | µA   |
| I <sub>OFF</sub> | power-off leakage current | V <sub>CC</sub> = 0 V; V <sub>I</sub> or V <sub>O</sub> = 5.5 V   | -                | ±0.1               | ±2   | -                 | ±2   | µA   |
| I <sub>CC</sub>  | supply current            | V <sub>I</sub> = 5.5 V or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 1.65 V to 5.5 V                    | -                | 0.1                | 4    | -                 | 4    | µA   |
| ΔI <sub>CC</sub> | additional supply current | per pin; V <sub>CC</sub> = 2.3 V to 5.5 V; V <sub>I</sub> = V <sub>CC</sub> - 0.6 V; I <sub>O</sub> = 0 A | -                | 5                  | 500  | -                 | 500  | µA   |
| C <sub>I</sub>   | input capacitance         | V <sub>CC</sub> = 3.3 V; V <sub>I</sub> = GND to V <sub>CC</sub>  | -                | 5                  | -    | -                 | -    | pF   |

[1] All typical values are measured at V<sub>CC</sub> = 3.3 V and T<sub>amb</sub> = 25 °C.

## 11 Dynamic characteristics

**Table 8. Dynamic characteristics**

Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 9](#).

| Symbol          | Parameter                     | Conditions   | -40 °C to +85 °C |                    |     | -40 °C to +125 °C |      | Unit |
|-----------------|-------------------------------|--|------------------|--------------------|-----|-------------------|------|------|
|                 |                               |  | Min              | Typ <sup>[1]</sup> | Max | Min               | Max  |      |
| t <sub>pd</sub> | propagation delay             | A, B to Y; see <a href="#">Figure 8</a> <sup>[2]</sup>                           |                  |                    |     |                   |      |      |
|                 |                               | V <sub>CC</sub> = 1.65 V to 1.95 V   | 1.0              | 3.4                | 8.0 | 1.0               | 10.5 | ns   |
|                 |                               | V <sub>CC</sub> = 2.3 V to 2.7 V   | 0.5              | 2.2                | 5.5 | 0.5               | 7.0  | ns   |
|                 |                               | V <sub>CC</sub> = 2.7 V  | 0.5              | 2.5                | 5.5 | 0.5               | 7.0  | ns   |
|                 |                               | V <sub>CC</sub> = 3.0 V to 3.6 V   | 0.5              | 2.1                | 4.5 | 0.5               | 6.0  | ns   |
|                 |                               | V <sub>CC</sub> = 4.5 V to 5.5 V   | 0.5              | 1.7                | 4.0 | 0.5               | 5.5  | ns   |
| C <sub>PD</sub> | power dissipation capacitance | V <sub>I</sub> = GND to V <sub>CC</sub> ; V <sub>CC</sub> = 3.3 V <sup>[3]</sup> | -                | 16                 | -   | -                 | -    | pF   |

[1] Typical values are measured at T<sub>amb</sub> = 25 °C and V<sub>CC</sub> = 1.8 V, 2.5 V, 2.7 V, 3.3 V and 5.0 V respectively.

[2] t<sub>pd</sub> is the same as t<sub>PLZ</sub> and t<sub>PZL</sub>.

[3] C<sub>PD</sub> is used to determine the dynamic power dissipation (P<sub>D</sub> in µW).

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

f<sub>i</sub> = input frequency in MHz;

f<sub>o</sub> = output frequency in MHz;

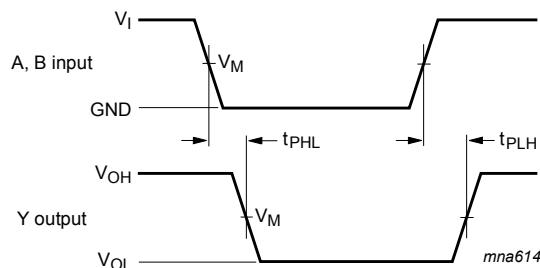
C<sub>L</sub> = output load capacitance in pF;

V<sub>CC</sub> = supply voltage in V;

N = number of inputs switching;

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

## 11.1 Waveforms and test circuit



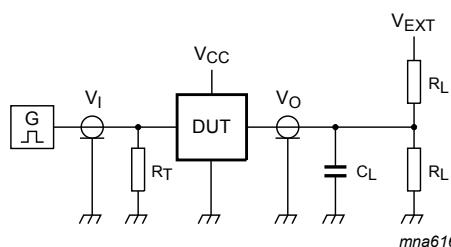
Measurement points are given in [Table 9](#).

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

**Figure 8. The input A, B to output Y propagation delays**

**Table 9. Measurement points**

| Supply voltage   | Input        | Output       |
|------------------|--------------|--------------|
| $V_{CC}$         | $V_M$        | $V_M$        |
| 1.65 V to 1.95 V | 0.5 $V_{CC}$ | 0.5 $V_{CC}$ |
| 2.3 V to 2.7 V   | 0.5 $V_{CC}$ | 0.5 $V_{CC}$ |
| 2.7 V            | 1.5 V        | 1.5 V        |
| 3.0 V to 3.6 V   | 1.5 V        | 1.5 V        |
| 4.5 V to 5.5 V   | 0.5 $V_{CC}$ | 0.5 $V_{CC}$ |



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  $Z_0$  of the pulse generator.

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

**Figure 9. Test circuit for measuring switching times**

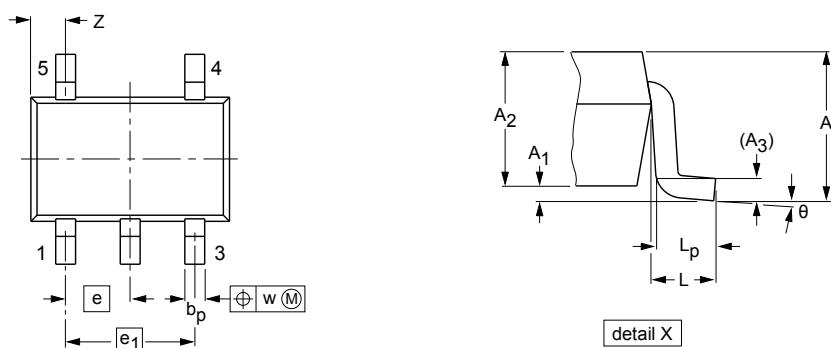
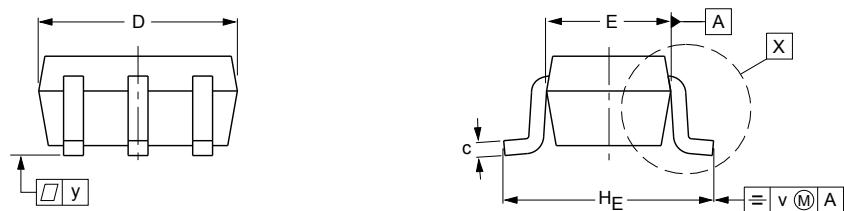
**Table 10. Test data**

| Supply voltage   | Input    | Load          | $V_{EXT}$ |                    |      |
|------------------|----------|---------------|-----------|--------------------|------|
| $V_{CC}$         | $V_I$    | $C_L$         | $R_L$     | $t_{PLH}, t_{PHL}$ |      |
| 1.65 V to 1.95 V | $V_{CC}$ | $\leq 2.0$ ns | 30 pF     | 1 k $\Omega$       | open |
| 2.3 V to 2.7 V   | $V_{CC}$ | $\leq 2.0$ ns | 30 pF     | 500 $\Omega$       | open |
| 2.7 V            | 2.7 V    | $\leq 2.5$ ns | 50 pF     | 500 $\Omega$       | open |
| 3.0 V to 3.6 V   | 2.7 V    | $\leq 2.5$ ns | 50 pF     | 500 $\Omega$       | open |
| 4.5 V to 5.5 V   | $V_{CC}$ | $\leq 2.5$ ns | 50 pF     | 500 $\Omega$       | open |

## 12 Package outline

TSSOP5: plastic thin shrink small outline package; 5 leads; body width 1.25 mm

SOT353-1



0 1.5 3 mm  
scale

### DIMENSIONS (mm are the original dimensions)

| UNIT | A<br>max. | A <sub>1</sub> | A <sub>2</sub> | A <sub>3</sub> | b <sub>p</sub> | c            | D <sup>(1)</sup> | E <sup>(1)</sup> | e    | e <sub>1</sub> | H <sub>E</sub> | L     | L <sub>p</sub> | v   | w   | y   | Z <sup>(1)</sup> | θ        |
|------|-----------|----------------|----------------|----------------|----------------|--------------|------------------|------------------|------|----------------|----------------|-------|----------------|-----|-----|-----|------------------|----------|
| mm   | 1.1<br>0  | 0.1<br>0.8     | 1.0            | 0.15           | 0.30<br>0.15   | 0.25<br>0.08 | 2.25<br>1.85     | 1.35<br>1.15     | 0.65 | 1.3            | 2.25<br>2.0    | 0.425 | 0.46<br>0.21   | 0.3 | 0.1 | 0.1 | 0.60<br>0.15     | 7°<br>0° |

### Note

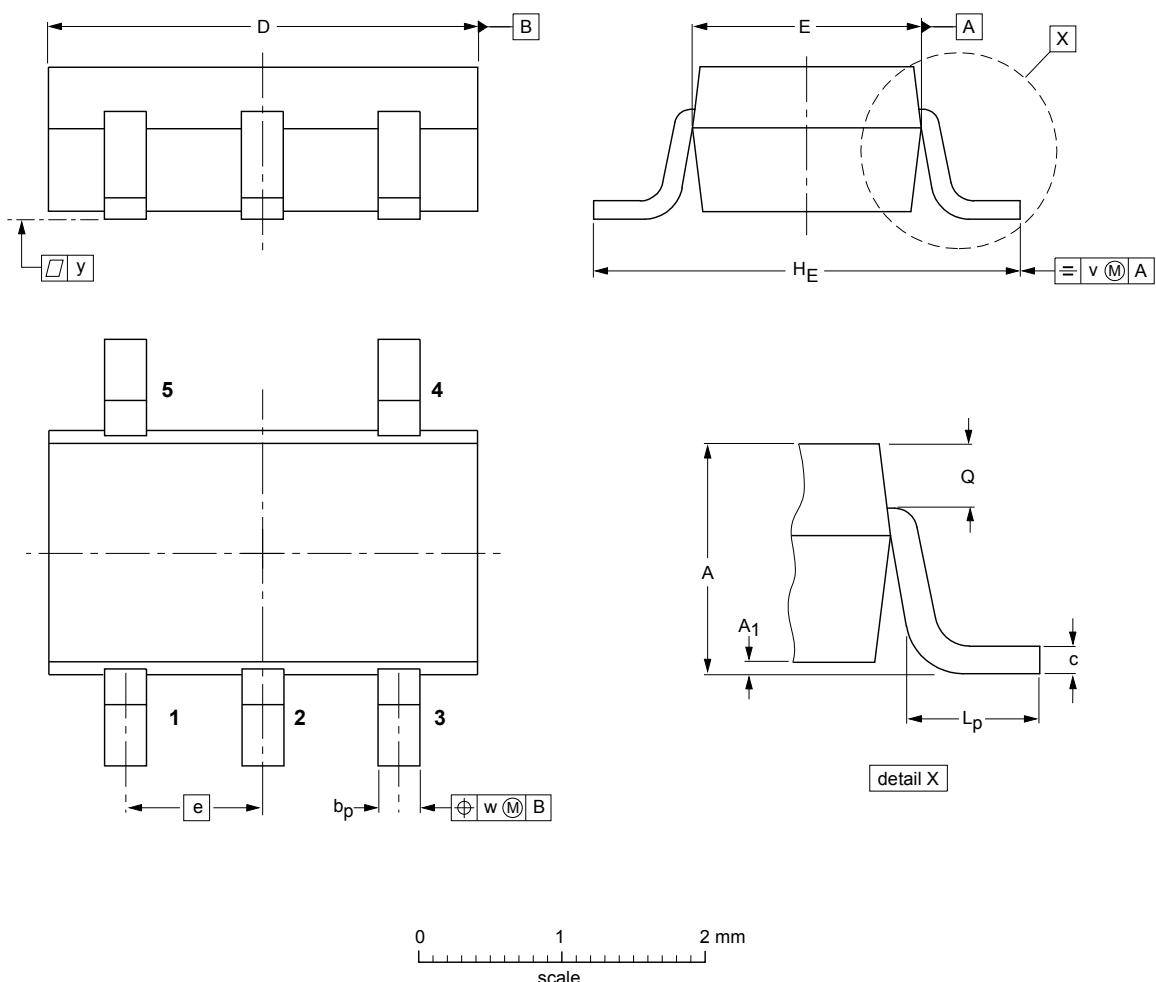
1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.

| OUTLINE<br>VERSION | REFERENCES |        |        |  | EUROPEAN<br>PROJECTION | ISSUE DATE           |
|--------------------|------------|--------|--------|--|------------------------|----------------------|
|                    | IEC        | JEDEC  | JEITA  |  |                        |                      |
| SOT353-1           |            | MO-203 | SC-88A |  |                        | 00-09-01<br>03-02-19 |

Figure 10. Package outline SOT353-1 (TSSOP5)

Plastic surface-mounted package; 5 leads

SOT753



DIMENSIONS (mm are the original dimensions)

| UNIT | A          | A <sub>1</sub> | b <sub>p</sub> | c            | D          | E          | e    | H <sub>E</sub> | L <sub>p</sub> | Q            | v   | w   | y   |
|------|------------|----------------|----------------|--------------|------------|------------|------|----------------|----------------|--------------|-----|-----|-----|
| mm   | 1.1<br>0.9 | 0.100<br>0.013 | 0.40<br>0.25   | 0.26<br>0.10 | 3.1<br>2.7 | 1.7<br>1.3 | 0.95 | 3.0<br>2.5     | 0.6<br>0.2     | 0.33<br>0.23 | 0.2 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES |       |        |  | EUROPEAN PROJECTION | ISSUE DATE           |
|-----------------|------------|-------|--------|--|---------------------|----------------------|
|                 | IEC        | JEDEC | JEITA  |  |                     |                      |
| SOT753          |            |       | SC-74A |  |                     | 02-04-16<br>06-03-16 |

Figure 11. Package outline SOT753 (SC-74A)

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

SOT886

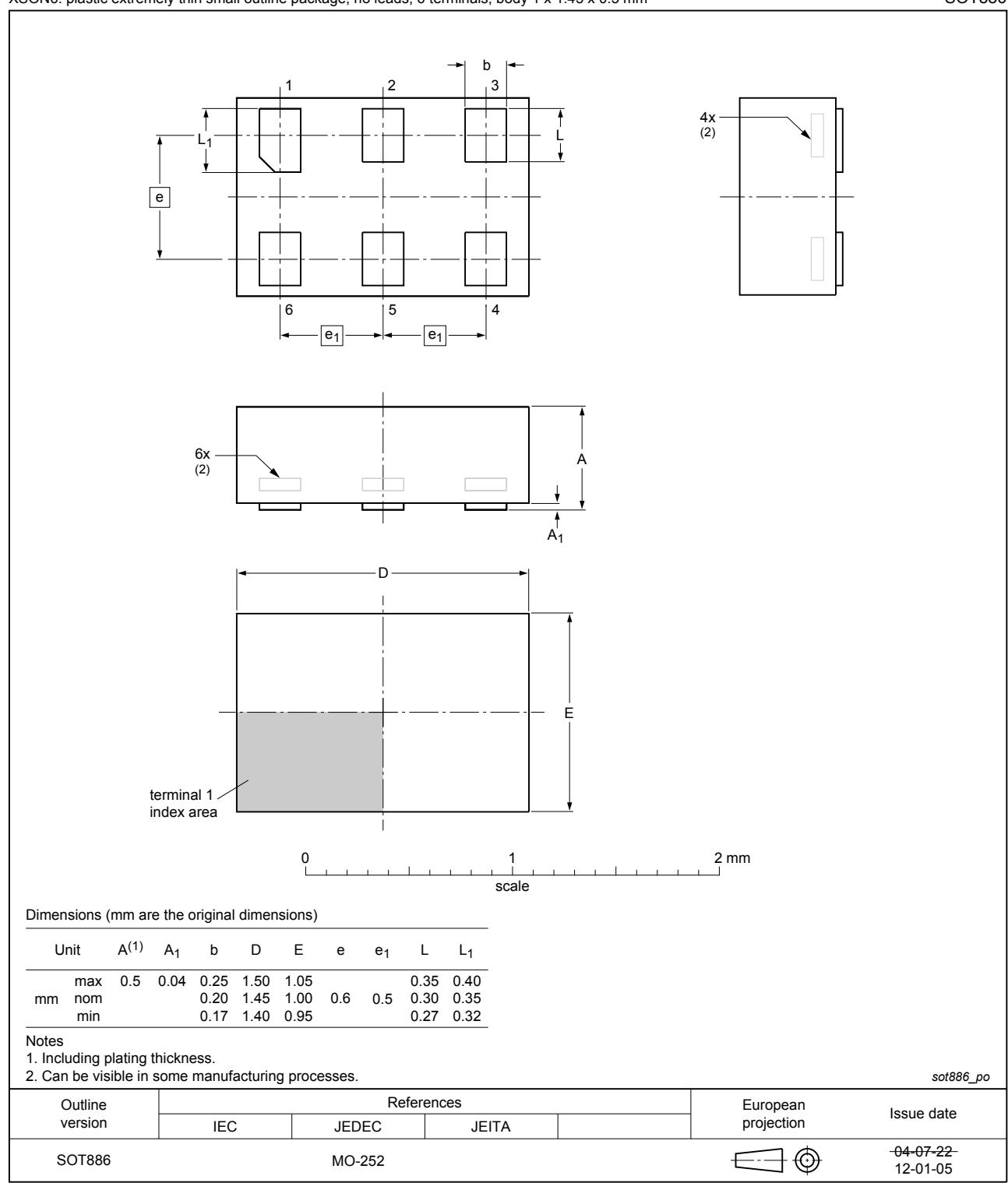
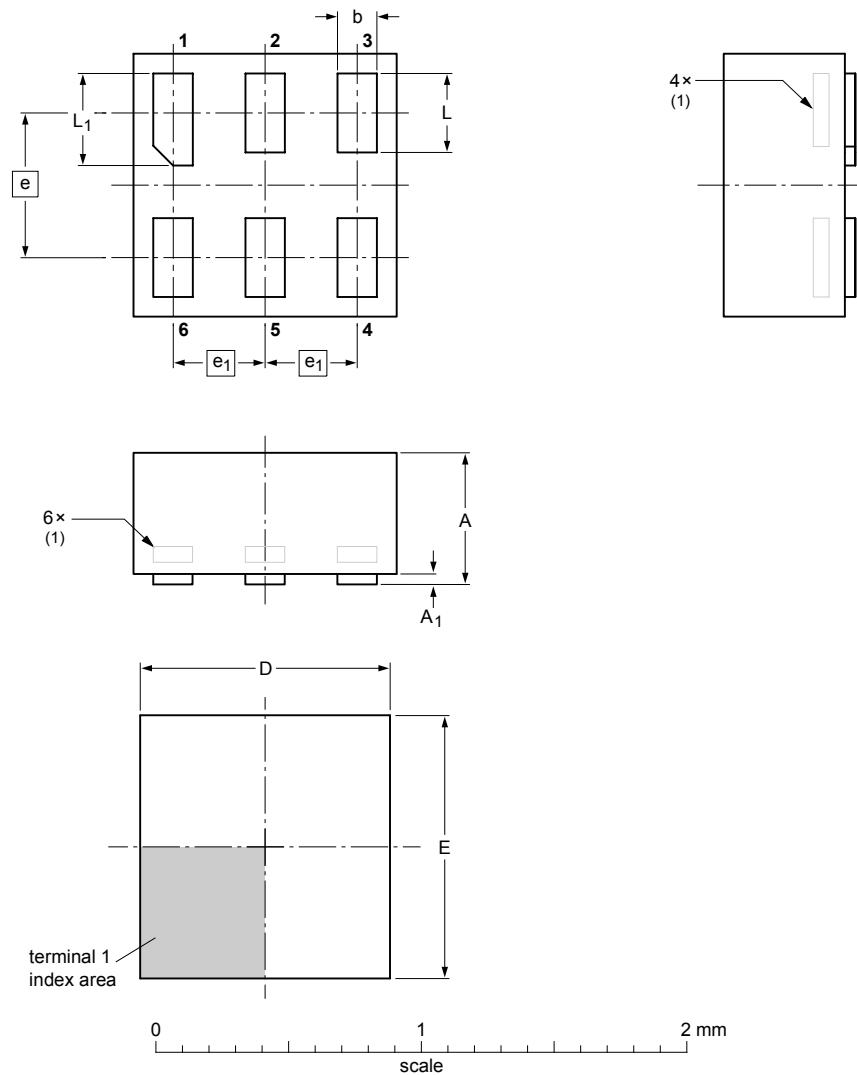


Figure 12. Package outline SOT886 (XSON6)

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

SOT891



## DIMENSIONS (mm are the original dimensions)

| UNIT | A<br>max | A1<br>max | b            | D            | E            | e    | e1   | L            | L1           |
|------|----------|-----------|--------------|--------------|--------------|------|------|--------------|--------------|
| mm   | 0.5      | 0.04      | 0.20<br>0.12 | 1.05<br>0.95 | 1.05<br>0.95 | 0.55 | 0.35 | 0.35<br>0.27 | 0.40<br>0.32 |

## Note

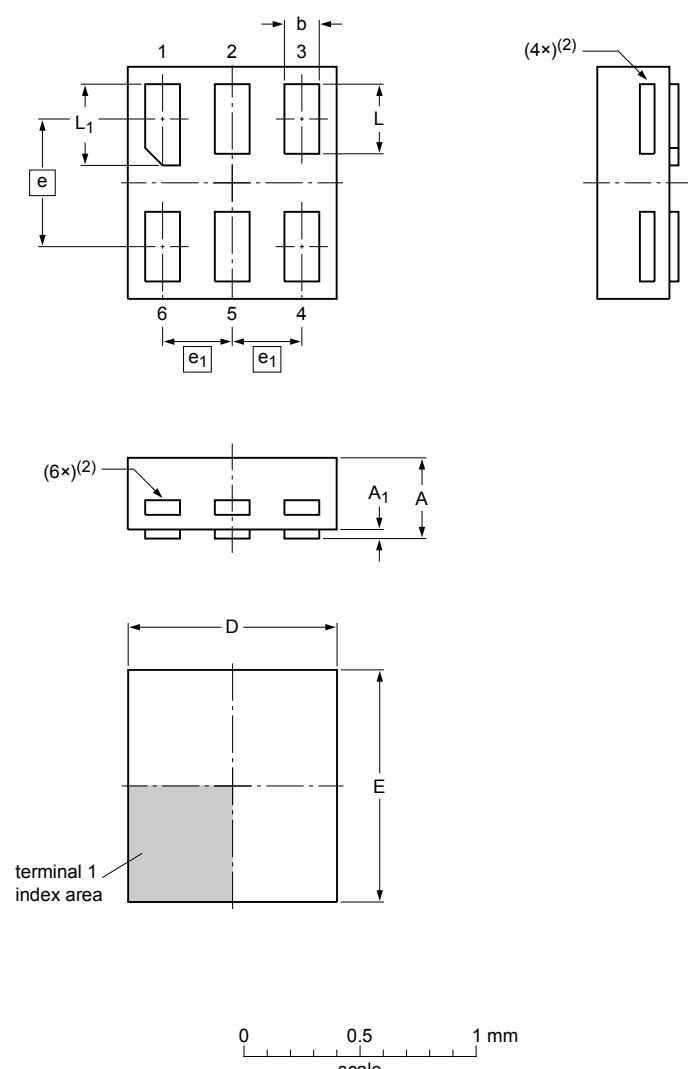
1. Can be visible in some manufacturing processes.

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

Figure 13. 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 <sup>(1)</sup> | A <sub>1</sub> | b    | D    | E    | e    | e <sub>1</sub> | L    | L <sub>1</sub> |
|------|------------------|----------------|------|------|------|------|----------------|------|----------------|
| mm   | max              | 0.35           | 0.04 | 0.20 | 0.95 | 1.05 |                | 0.35 | 0.40           |
| mm   | nom              |                |      | 0.15 | 0.90 | 1.00 | 0.55           | 0.3  | 0.35           |
| mm   | min              |                |      | 0.12 | 0.85 | 0.95 |                | 0.27 | 0.32           |

## Note

1. Including plating thickness.

2. Visible depending upon used manufacturing technology.

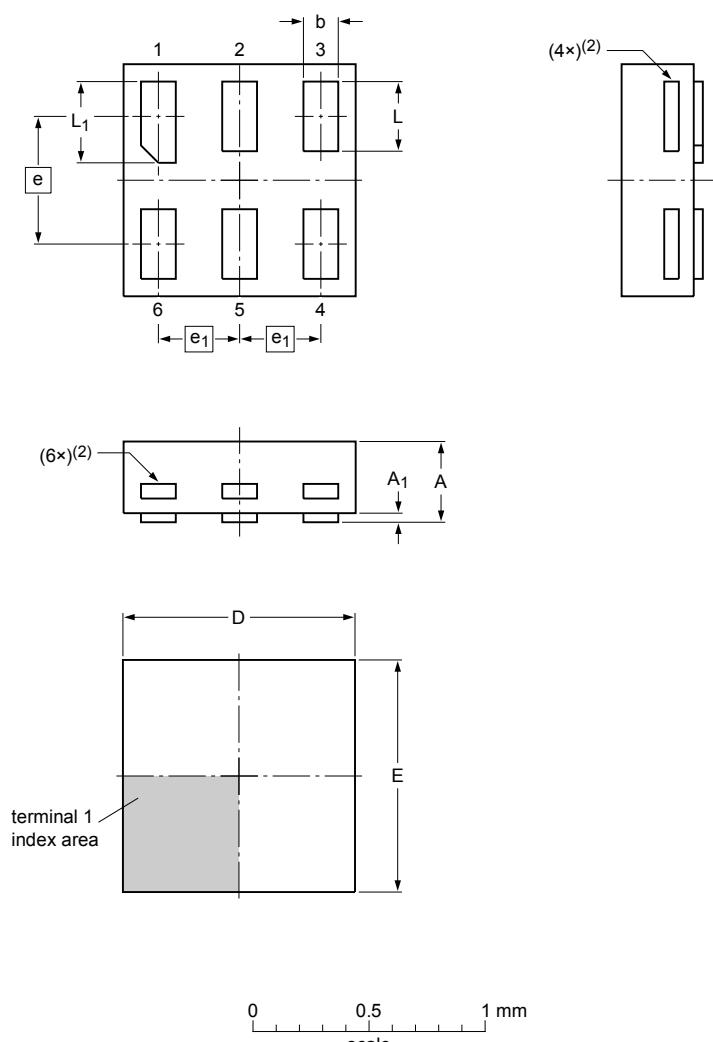
sot1115\_po

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

Figure 14. 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 <sup>(1)</sup> | A <sub>1</sub> | b    | D    | E    | e    | e <sub>1</sub> | L    | L <sub>1</sub> |
|------|------------------|----------------|------|------|------|------|----------------|------|----------------|
| mm   | max              | 0.35           | 0.04 | 0.20 | 1.05 | 1.05 |                | 0.35 | 0.40           |
| mm   | nom              |                |      | 0.15 | 1.00 | 1.00 | 0.55           | 0.35 | 0.35           |
| mm   | min              |                |      | 0.12 | 0.95 | 0.95 |                | 0.27 | 0.32           |

## Note

1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

sot1202\_po

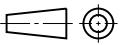
| Outline version | References |       |       | European projection   | Issue date           |
|-----------------|------------|-------|-------|---|----------------------|
|                 | IEC        | JEDEC | JEITA |   |                      |
| SOT1202         |            |       |       |  | 10-04-02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

Figure 15. Package outline SOT1202 (XSON6)

X2SON5: plastic thermal enhanced extremely thin small outline package; no leads;  
5 terminals; body 0.8 x 0.8 x 0.35 mm

SOT1226

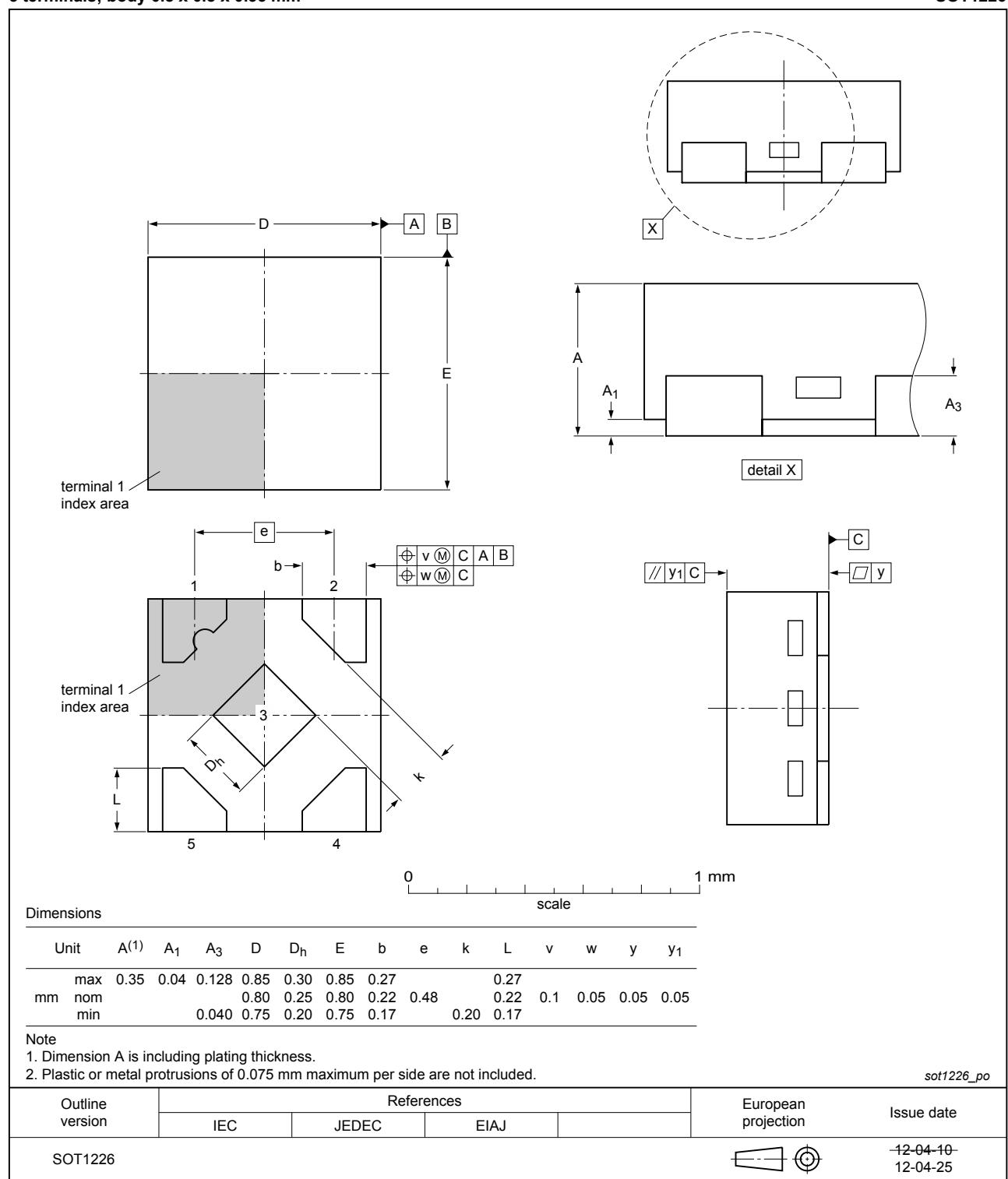


Figure 16. Package outline SOT1226 (X2SON5)

## 13 Abbreviations

Table 11. 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 12. Revision history

| Document ID    | Release date   | Data sheet status     | Change notice | Supersedes     |
|----------------|--|-----------------------|---------------|----------------|
| 74LVC1G08 v.12 | 20180116   | Product data sheet    | -             | 74LVC1G08 v.11 |
| Modifications: | <ul style="list-style-type: none"> <li>The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.</li> <li>Legal texts have been adapted to the new company name where appropriate.</li> <li>Pin configuration drawing of SOT1226 (<a href="#">Figure 7</a>) modified.</li> </ul> |                       |               |                |
| 74LVC1G08 v.11 | 20161128   | Product data sheet    | -             | 74LVC1G08 v.10 |
| Modifications: | <ul style="list-style-type: none"> <li><a href="#">Section 10</a>: The maximum limits for leakage current and supply current have changed.</li> </ul>  |                       |               |                |
| 74LVC1G08 v.10 | 20120629   | Product data sheet    | -             | 74LVC1G08 v.9  |
| Modifications: | <ul style="list-style-type: none"> <li>Added type number 74LVC1G08GX (SOT1226)</li> <li>Package outline drawing of SOT886 (<a href="#">Figure 12</a>) modified.</li> </ul>   |                       |               |                |
| 74LVC1G08 v.9  | 20111209   | Product data sheet    | -             | 74LVC1G08 v.8  |
| Modifications: | <ul style="list-style-type: none"> <li>Legal pages updated.</li> </ul>   |                       |               |                |
| 74LVC1G08 v.8  | 20101019   | Product data sheet    | -             | 74LVC1G08 v.7  |
| 74LVC1G08 v.7  | 20070717   | Product data sheet    | -             | 74LVC1G08 v.6  |
| 74LVC1G08 v.6  | 20060619   | Product data sheet    | -             | 74LVC1G08 v.5  |
| 74LVC1G08 v.5  | 20040915   | Product specification | -             | 74LVC1G08 v.4  |
| 74LVC1G08 v.4  | 20021002   | Product specification | -             | 74LVC1G08 v.3  |
| 74LVC1G08 v.3  | 20020517   | Product specification | -             | 74LVC1G08 v.2  |
| 74LVC1G08 v.2  | 20010406   | Product specification | -             | 74LVC1G08 v.1  |
| 74LVC1G08 v.1  | 20001121   | 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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