

# 74LVC1G11

## Single 3-input AND gate

Rev. 03 — 6 September 2006

Product data sheet

## 1. General description

The 74LVC1G11 is a high-performance, low-voltage, Si-gate CMOS device and superior to most advanced CMOS compatible TTL families.

The input can be driven from either 3.3 V or 5 V devices. This feature allows the use of this device in a mixed 3.3 V and 5 V environment.

Schmitt-trigger action at all inputs makes the circuit highly tolerant to 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.

The 74LVC1G11 provides a single 3-input AND gate.

## 2. Features

- Wide supply voltage range from 1.65 V to 5.5 V
- 5 V tolerant inputs for interfacing with 5 V logic
- 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)
- ESD protection:
  - ◆ HBM JESD22-A114-D exceeds 2000 V
  - ◆ MM JESD22-A115-A exceeds 200 V
- CMOS low power consumption
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Multiple package options
- Specified from  $-40$  °C to  $+85$  °C and  $-40$  °C to  $+125$  °C

# PHILIPS

3. Ordering information

Table 1. Ordering information

| Type number | Package           |       |                                                                                             |         |
|-------------|-------------------|-------|---------------------------------------------------------------------------------------------|---------|
|             | Temperature range | Name  | Description                                                                                 | Version |
| 74LVC1G11GW | −40 °C to +125 °C | SC-88 | plastic surface-mounted package; 6 leads                                                    | SOT363  |
| 74LVC1G11GV | −40 °C to +125 °C | SC-74 | plastic surface-mounted package; 6 leads                                                    | SOT457  |
| 74LVC1G11GM | −40 °C to +125 °C | XSON6 | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm | SOT886  |
| 74LVC1G11GF | −40 °C to +125 °C | XSON6 | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1 × 0.5 mm    | SOT891  |

4. Marking

Table 2. Marking

| Type number | Marking code |
|-------------|--------------|
| 74LVC1G11GW | VU           |
| 74LVC1G11GV | V11          |
| 74LVC1G11GM | VU           |
| 74LVC1G11GF | VU           |

5. Functional diagram

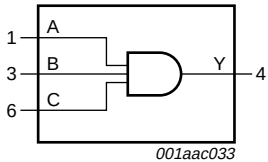


Fig 1. Logic symbol

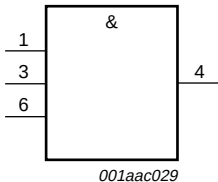


Fig 2. IEC logic symbol

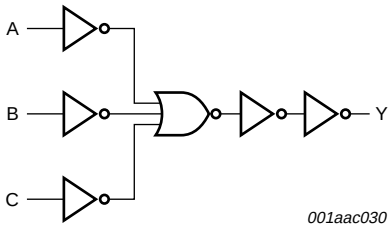


Fig 3. Logic diagram

6. Pinning information

6.1 Pinning

74LVC1G11

001aac032

Fig 4. Pin configuration SOT363 and SOT457

74LVC1G11

001aac849

Transparent top view

Fig 5. Pin configuration SOT886

74LVC1G11

001aaf200

Transparent top view

Fig 6. Pin configuration SOT891

6.2 Pin description

Table 3. Pin description

| Symbol          | Pin | Description    |
|-----------------|-----|----------------|
| A               | 1   | data input     |
| GND             | 2   | ground (0 V)   |
| B               | 3   | data input     |
| Y               | 4   | data output    |
| V <sub>CC</sub> | 5   | supply voltage |
| C               | 6   | data input     |

7. Functional description

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

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

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

## 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        | +6.5           | V    |
| $I_{IK}$  | input clamping current  | $V_I < 0$ V                   | -           | -50            | mA   |
| $V_I$     | input voltage           |                               | [1] -0.5    | +6.5           | V    |
| $I_{OK}$  | output clamping current | $V_O > V_{CC}$ or $V_O < 0$ V | -           | ±50            | mA   |
| $V_O$     | output voltage          | Active mode                   | [1][2] -0.5 | $V_{CC} + 0.5$ | V    |
|           |                         | Power-down mode               | [1][2] -0.5 | +6.5           | V    |
| $I_O$     | output current          | $V_O = 0$ V to $V_{CC}$       | -           | ±50            | mA   |
| $I_{CC}$  | supply current          |                               | -           | 100            | mA   |
| $I_{GND}$ | ground current          |                               | -           | -100           | mA   |
| $P_{tot}$ | total power dissipation | $T_{amb} = -40$ °C to +125 °C | [3] -       | 250            | mW   |
| $T_{stg}$ | 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  $V_{CC} = 0$  V (Power-down mode), the output voltage can be 5.5 V in normal operation.

[3] For SC-88 and SC-74A packages: above 87.5 °C the value of  $P_{tot}$  derates linearly with 4.0 mW/K.  
For XSON6 packages: above 45 °C the value of  $P_{tot}$  derates linearly with 2.4 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    |
|                     |                                     | Power-down mode; $V_{CC} = 0$ V | 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      | 0    | -   | 20       | ns/V |
|                     |                                     | $V_{CC} = 2.7$ V to 5.5 V       | 0    | -   | 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                                                                                                | Min                    | Typ <sup>[1]</sup> | Max                    | Unit |
|--------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------|------------------------|--------------------|------------------------|------|
| <b>T<sub>amb</sub> = –40 °C to +85 °C</b>  |                           |                                                                                                           |                        |                    |                        |      |
| V <sub>IH</sub>                            | HIGH-level input voltage  | V <sub>CC</sub> = 1.65 V to 1.95 V                                                                        | 0.65 × V <sub>CC</sub> | -                  | -                      | V    |
|                                            |                           | V <sub>CC</sub> = 2.3 V to 2.7 V                                                                          | 1.7                    | -                  | -                      | V    |
|                                            |                           | V <sub>CC</sub> = 2.7 V to 3.6 V                                                                          | 2.0                    | -                  | -                      | V    |
|                                            |                           | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                          | 0.7 × V <sub>CC</sub>  | -                  | -                      | V    |
| V <sub>IL</sub>                            | LOW-level input voltage   | V <sub>CC</sub> = 1.65 V to 1.95 V                                                                        | -                      | -                  | 0.35 × V <sub>CC</sub> | V    |
|                                            |                           | V <sub>CC</sub> = 2.3 V to 2.7 V                                                                          | -                      | -                  | 0.7                    | V    |
|                                            |                           | V <sub>CC</sub> = 2.7 V to 3.6 V                                                                          | -                      | -                  | 0.8                    | V    |
|                                            |                           | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                          | -                      | -                  | 0.3 × V <sub>CC</sub>  | V    |
| V <sub>OH</sub>                            | HIGH-level output voltage | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                                       |                        |                    |                        |      |
|                                            |                           | I <sub>O</sub> = –100 µA; V <sub>CC</sub> = 1.65 V to 5.5 V                                               | V <sub>CC</sub> – 0.1  | -                  | -                      | V    |
|                                            |                           | I <sub>O</sub> = –4 mA; V <sub>CC</sub> = 1.65 V                                                          | 1.2                    | 1.54               | -                      | V    |
|                                            |                           | I <sub>O</sub> = –8 mA; V <sub>CC</sub> = 2.3 V                                                           | 1.9                    | 2.15               | -                      | V    |
|                                            |                           | I <sub>O</sub> = –12 mA; V <sub>CC</sub> = 2.7 V                                                          | 2.2                    | 2.50               | -                      | V    |
|                                            |                           | I <sub>O</sub> = –24 mA; V <sub>CC</sub> = 3.0 V                                                          | 2.3                    | 2.62               | -                      | V    |
|                                            |                           | I <sub>O</sub> = –32 mA; V <sub>CC</sub> = 4.5 V                                                          | 3.8                    | 4.11               | -                      | V    |
| 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                   | V    |
|                                            |                           | I <sub>O</sub> = 4 mA; V <sub>CC</sub> = 1.65 V                                                           | -                      | 0.07               | 0.45                   | V    |
|                                            |                           | I <sub>O</sub> = 8 mA; V <sub>CC</sub> = 2.3 V                                                            | -                      | 0.12               | 0.30                   | V    |
|                                            |                           | I <sub>O</sub> = 12 mA; V <sub>CC</sub> = 2.7 V                                                           | -                      | 0.17               | 0.40                   | V    |
|                                            |                           | I <sub>O</sub> = 24 mA; V <sub>CC</sub> = 3.0 V                                                           | -                      | 0.33               | 0.55                   | V    |
|                                            |                           | I <sub>O</sub> = 32 mA; V <sub>CC</sub> = 4.5 V                                                           | -                      | 0.39               | 0.55                   | V    |
| I <sub>I</sub>                             | input leakage current     | V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 5.5 V                                                    | -                      | ±0.1               | ±5                     | µA   |
| I <sub>OFF</sub>                           | power-off leakage current | V <sub>I</sub> or V <sub>O</sub> = 5.5 V; V <sub>CC</sub> = 0 V                                           | -                      | ±0.1               | ±10                    | µA   |
| I <sub>CC</sub>                            | supply current            | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 5.5 V                    | -                      | 0.1                | 10                     | µA   |
| ΔI <sub>CC</sub>                           | additional supply current | V <sub>I</sub> = V <sub>CC</sub> – 0.6 V; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 2.3 V to 5.5 V; per pin | -                      | 5                  | 500                    | µA   |
| C <sub>I</sub>                             | input capacitance         |                                                                                                           | -                      | 4                  | -                      | pF   |
| <b>T<sub>amb</sub> = –40 °C to +125 °C</b> |                           |                                                                                                           |                        |                    |                        |      |
| V <sub>IH</sub>                            | HIGH-level input voltage  | V <sub>CC</sub> = 1.65 V to 1.95 V                                                                        | 0.65 × V <sub>CC</sub> | -                  | -                      | V    |
|                                            |                           | V <sub>CC</sub> = 2.3 V to 2.7 V                                                                          | 1.7                    | -                  | -                      | V    |
|                                            |                           | V <sub>CC</sub> = 2.7 V to 3.6 V                                                                          | 2.0                    | -                  | -                      | V    |
|                                            |                           | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                          | 0.7 × V <sub>CC</sub>  | -                  | -                      | V    |
| V <sub>IL</sub>                            | LOW-level input voltage   | V <sub>CC</sub> = 1.65 V to 1.95 V                                                                        | -                      | -                  | 0.35 × V <sub>CC</sub> | V    |
|                                            |                           | V <sub>CC</sub> = 2.3 V to 2.7 V                                                                          | -                      | -                  | 0.7                    | V    |
|                                            |                           | V <sub>CC</sub> = 2.7 V to 3.6 V                                                                          | -                      | -                  | 0.8                    | V    |
|                                            |                           | V <sub>CC</sub> = 4.5 V to 5.5 V                                                                          | -                      | -                  | 0.3 × V <sub>CC</sub>  | V    |

**Table 7.** Static characteristics ...continued

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

| Symbol           | Parameter                 | Conditions                                                                                                   | Min                   | Typ <sup>[1]</sup> | Max  | Unit |
|------------------|---------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------|--------------------|------|------|
| V <sub>OH</sub>  | HIGH-level output voltage | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                                          |                       |                    |      |      |
|                  |                           | I <sub>O</sub> = -100 µA; V <sub>CC</sub> = 1.65 V to 5.5 V                                                  | V <sub>CC</sub> - 0.1 | -                  | -    | V    |
|                  |                           | I <sub>O</sub> = -4 mA; V <sub>CC</sub> = 1.65 V                                                             | 0.95                  | -                  | -    | V    |
|                  |                           | I <sub>O</sub> = -8 mA; V <sub>CC</sub> = 2.3 V                                                              | 1.7                   | -                  | -    | V    |
|                  |                           | I <sub>O</sub> = -12 mA; V <sub>CC</sub> = 2.7 V                                                             | 1.9                   | -                  | -    | V    |
|                  |                           | I <sub>O</sub> = -24 mA; V <sub>CC</sub> = 3.0 V                                                             | 2.0                   | -                  | -    | V    |
|                  |                           | I <sub>O</sub> = -32 mA; V <sub>CC</sub> = 4.5 V                                                             | 3.4                   | -                  | -    | V    |
| 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 | V    |
|                  |                           | I <sub>O</sub> = 4 mA; V <sub>CC</sub> = 1.65 V                                                              | -                     | -                  | 0.70 | V    |
|                  |                           | I <sub>O</sub> = 8 mA; V <sub>CC</sub> = 2.3 V                                                               | -                     | -                  | 0.45 | V    |
|                  |                           | I <sub>O</sub> = 12 mA; V <sub>CC</sub> = 2.7 V                                                              | -                     | -                  | 0.60 | V    |
|                  |                           | I <sub>O</sub> = 24 mA; V <sub>CC</sub> = 3.0 V                                                              | -                     | -                  | 0.80 | V    |
|                  |                           | I <sub>O</sub> = 32 mA; V <sub>CC</sub> = 4.5 V                                                              | -                     | -                  | 0.80 | V    |
| I <sub>I</sub>   | input leakage current     | V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 5.5 V                                                       | -                     | -                  | ±100 | µA   |
| I <sub>OFF</sub> | power-off leakage current | V <sub>I</sub> or V <sub>O</sub> = 5.5 V; V <sub>CC</sub> = 0 V                                              | -                     | -                  | ±200 | µA   |
| I <sub>CC</sub>  | supply current            | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A;<br>V <sub>CC</sub> = 5.5 V                    | -                     | -                  | 200  | µA   |
| ΔI <sub>CC</sub> | additional supply current | V <sub>I</sub> = V <sub>CC</sub> - 0.6 V; I <sub>O</sub> = 0 A;<br>V <sub>CC</sub> = 2.3 V to 5.5 V; per pin | -                     | -                  | 5000 | µA   |

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

## 11. Dynamic characteristics

**Table 8.** Dynamic characteristicsVoltages are referenced to GND (ground = 0 V). For test circuit see [Figure 8](#).

| 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 and C to Y; see <a href="#">Figure 7</a> <sup>[2]</sup> |                  |                    |      |                   |      |      |
|                 |                   | V <sub>CC</sub> = 1.65 V to 1.95 V                           | 1.5              | 4.7                | 17.2 | 1.5               | 21.5 | ns   |
|                 |                   | V <sub>CC</sub> = 2.3 V to 2.7 V                             | 1.0              | 3.0                | 6.2  | 1.0               | 7.8  | ns   |
|                 |                   | V <sub>CC</sub> = 2.7 V                                      | 1.0              | 3.0                | 6.0  | 1.0               | 7.5  | ns   |
|                 |                   | V <sub>CC</sub> = 3.0 V to 3.6 V                             | 1.0              | 2.6                | 4.9  | 1.0               | 6.2  | ns   |
|                 |                   | V <sub>CC</sub> = 4.5 V to 5.5 V                             | 1.0              | 1.9                | 3.5  | 1.0               | 4.4  | ns   |

**Table 8.** Dynamic characteristics ...continued

Voltages are referenced to GND (ground = 0 V). For test circuit see [Figure 8](#).

| Symbol   | Parameter                     | Conditions                                                           | –40 °C to +85 °C |                    |     | –40 °C to +125 °C |     | Unit |
|----------|-------------------------------|----------------------------------------------------------------------|------------------|--------------------|-----|-------------------|-----|------|
|          |                               |                                                                      | Min              | Typ <sup>[1]</sup> | Max | Min               | Max |      |
| $C_{PD}$ | power dissipation capacitance | $V_I = \text{GND to } V_{CC}; V_{CC} = 3.3 \text{ V}$ <sup>[3]</sup> | -                | 13                 | -   | -                 | -   | pF   |

[1] Typical values are measured at  $T_{amb} = 25 \text{ °C}$  and  $V_{CC} = 1.8 \text{ V}, 2.5 \text{ V}, 2.7 \text{ V}, 3.3 \text{ V}$  and  $5.0 \text{ V}$  respectively.

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

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

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

$f_i$  = input frequency in MHz;

$f_o$  = output frequency in MHz;

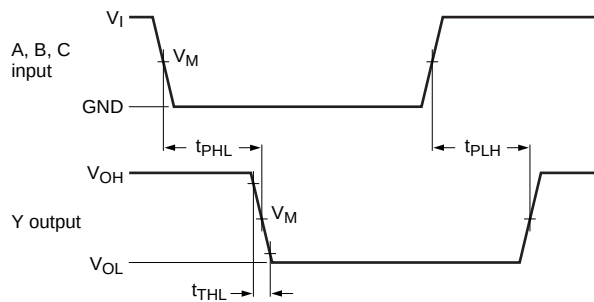
$C_L$  = output load capacitance in pF;

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

$N$  = number of inputs switching;

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

## 12. Waveforms



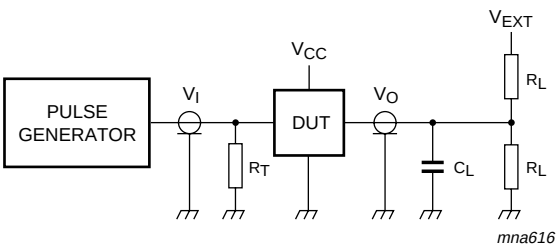
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Measurement points are given in [Table 9](#).

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

**Fig 7.** The input (A, B, C) 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 | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |
| 2.3 V to 2.7 V   | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |
| 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   | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |



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  $Z_o$  of the pulse generator.  
 $V_{EXT}$  = External voltage for measuring switching times.

Fig 8. Load circuitry for switching times

Table 10. Test data

| Supply voltage   | Input    |               | Load  |              | $V_{EXT}$          |
|------------------|----------|---------------|-------|--------------|--------------------|
| $V_{CC}$         | $V_I$    | $t_r = t_f$   | $C_L$ | $R_L$        | $t_{PLH}, t_{PHL}$ |
| 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               |



13. Package outline

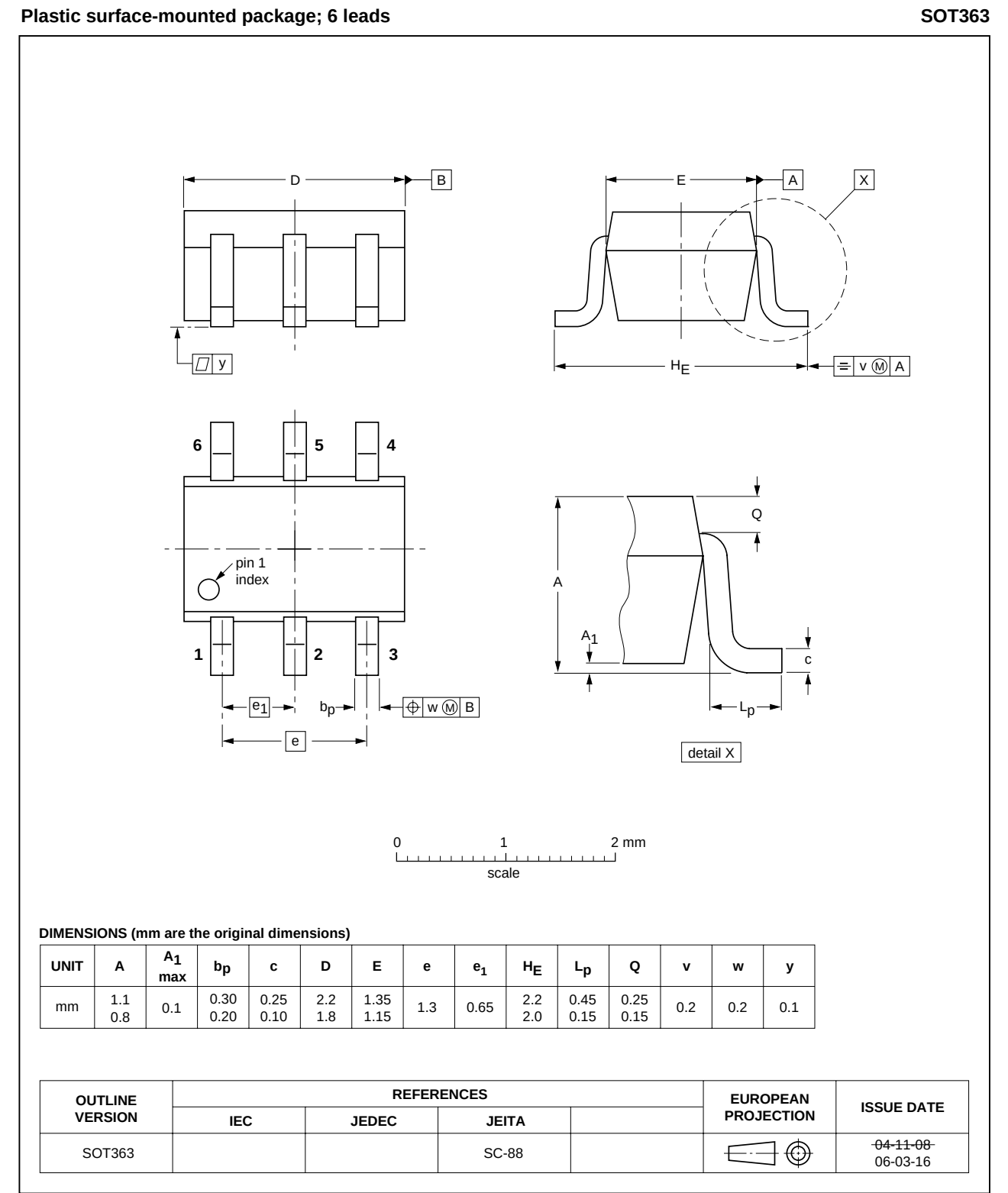


Fig 9. Package outline SOT363 (SC-88)

Plastic surface-mounted package (TSOP6); 6 leads

SOT457

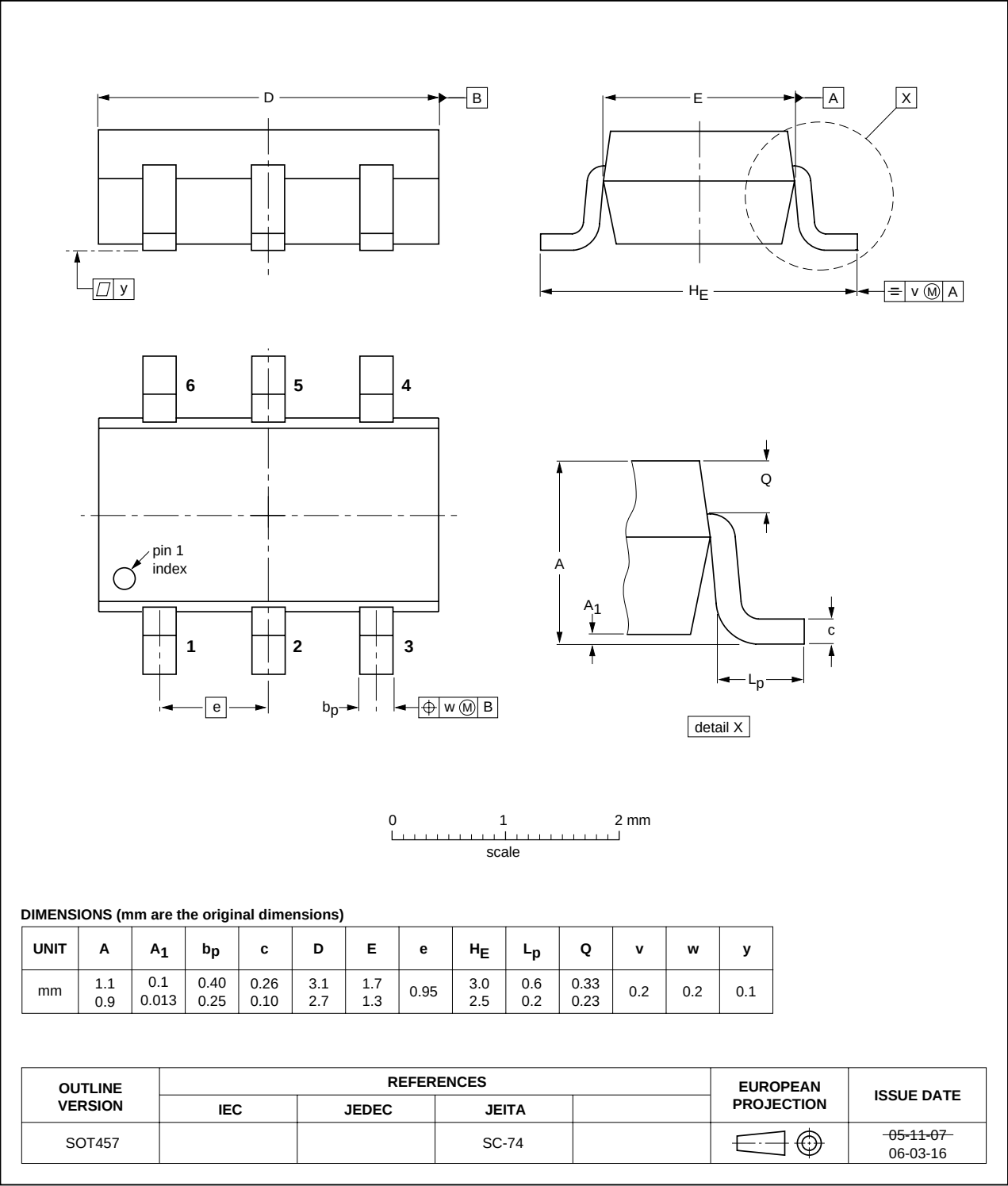


Fig 10. Package outline SOT457 (SC-74)

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

SOT886

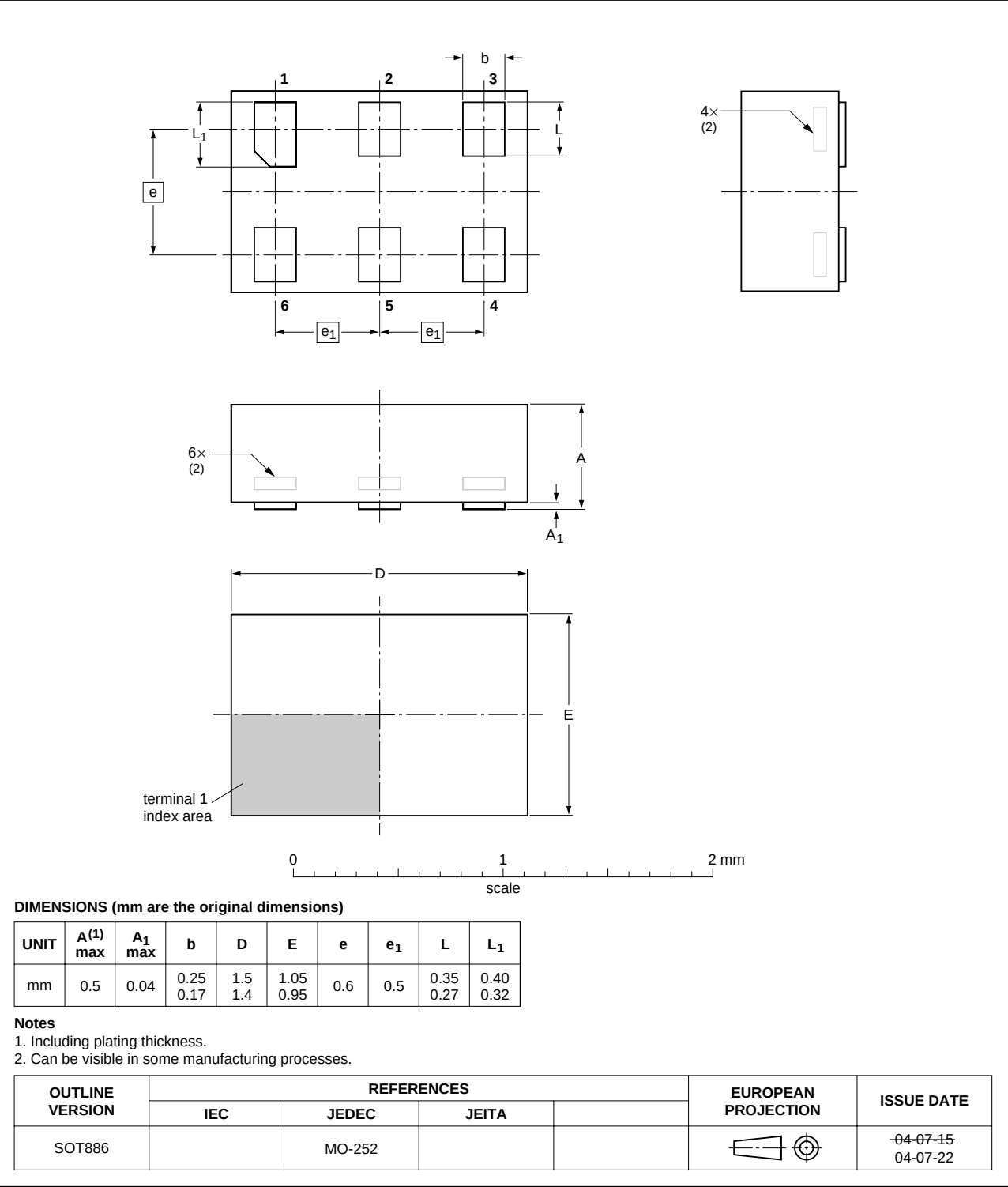


Fig 11. Package outline SOT886 (XSON6)

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

SOT891

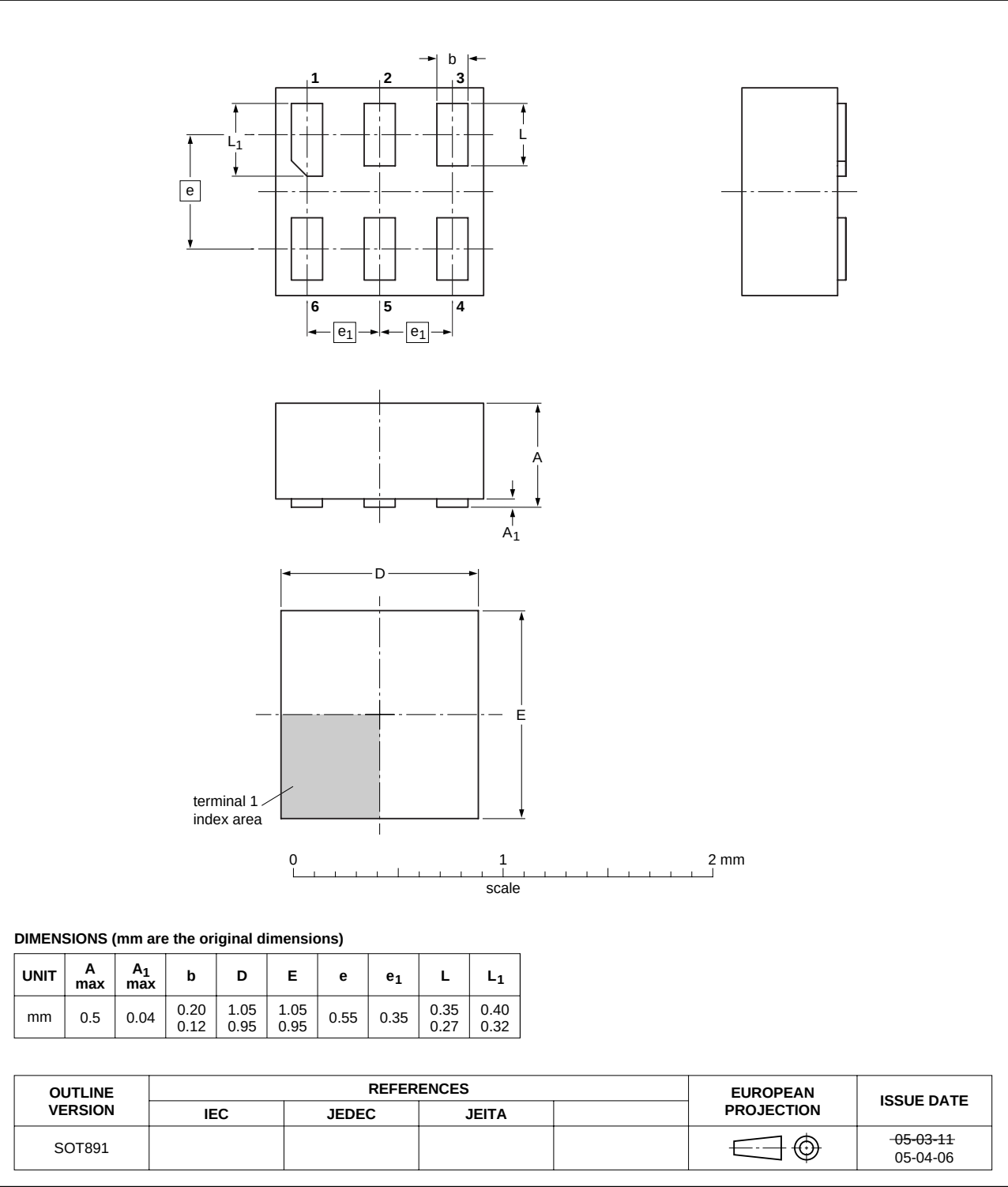


Fig 12. Package outline SOT891 (XSON6)

## 14. 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             |

## 15. Revision history

Table 12. Revision history

| Document ID    | Release date                                           | Data sheet status  | Change notice | Supersedes  |
|----------------|--------------------------------------------------------|--------------------|---------------|-------------|
| 74LVC1G11_3    | 20060906                                               | Product data sheet | -             | 74LVC1G11_2 |
| Modifications: | • Added type number 74LVC1G11GF (XSON6/SOT891 package) |                    |               |             |
| 74LVC1G11_2    | 20050503                                               | Product data sheet | -             | 74LVC1G11_1 |
| Modifications: | • Package outline and marking code added               |                    |               |             |
| 74LVC1G11_1    | 20041130                                               | Product data sheet | -             | -           |

## 16. Legal information

### 16.1 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.semiconductors.philips.com>.

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