



# 74LVC1G04

## Single inverter

Rev. 18.1 — 2 September 2024

Product data sheet

## 1. General description

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The 74LVC1G04 is a single inverter. 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 environments. Schmitt-trigger action at all inputs makes the circuit tolerant of slower input rise and fall times. This device is fully specified for partial power down applications using I<sub>OFF</sub>. The I<sub>OFF</sub> circuitry disables the output, preventing the potentially damaging backflow current through the device when it is powered down.

## 2. Features and benefits

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- Wide supply voltage range from 1.65 V to 5.5 V
- Overvoltage tolerant inputs to 5.5 V
- High noise immunity
- CMOS low power dissipation
- I<sub>OFF</sub> circuitry provides partial Power-down mode operation
- ±24 mA output drive (V<sub>CC</sub> = 3.0 V)
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Complies with JEDEC standard:
  - JESD8-7 (1.65 V to 1.95 V)
  - JESD8-5 (2.3 V to 2.7 V)
  - JESD8C (2.7 V to 3.6 V)
  - JESD36 (4.5 V to 5.5 V)
- ESD protection:
  - HBM: ANSI/ESDA/JEDEC JS-001 class 2 exceeds 2000 V
  - CDM: ANSI/ESDA/JEDEC JS-002 class C3 exceeds 1000 V
- 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			
	Temperature range	Name	Description	Version
<a href="#">74LVC1G04GW</a>	-40 °C to +125 °C	TSSOP5	plastic thin shrink small outline package; 5 leads; body width 1.25 mm	<a href="#">SOT353-1</a>
<a href="#">74LVC1G04GV</a>	-40 °C to +125 °C	SC-74A	plastic surface-mounted package; 5 leads	<a href="#">SOT753</a>
<a href="#">74LVC1G04GM</a>	-40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm	<a href="#">SOT886</a>
<a href="#">74LVC1G04GN</a>	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm	<a href="#">SOT1115</a>
<a href="#">74LVC1G04GS</a>	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm	<a href="#">SOT1202</a>
<a href="#">74LVC1G04GX</a>	-40 °C to +125 °C	X2SON5	plastic thermal enhanced extremely thin small outline package; no leads; 5 terminals; body 0.8 × 0.8 × 0.32 mm	<a href="#">SOT1226-3</a>
<a href="#">74LVC1G04GX4</a>	-40 °C to +125 °C	X2SON4	plastic thermal enhanced extremely thin small outline package; no leads; 4 terminals; body 0.6 × 0.6 × 0.32 mm	<a href="#">SOT1269-2</a>
<a href="#">74LVC1G04GZ</a>	-40 °C to +125 °C	XSON5	plastic thermal enhanced extremely thin small outline package with side-wettable flanks (SWF); no leads; 5 terminals; body 1.1 × 0.85 × 0.5 mm	<a href="#">SOT8065-1</a>

### 4. Marking

Table 2. Marking

Type number	Marking code[1]
74LVC1G04GW	VC
74LVC1G04GV	V04
74LVC1G04GM	VC
74LVC1G04GN	VC
74LVC1G04GS	VC
74LVC1G04GX	VC
74LVC1G04GX4	VC
74LVC1G04GZ	VC

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

### 5. Functional diagram

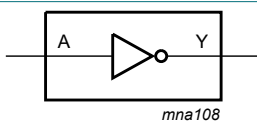


Fig. 1. Logic symbol

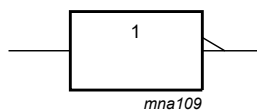


Fig. 2. IEC logic symbol

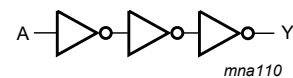
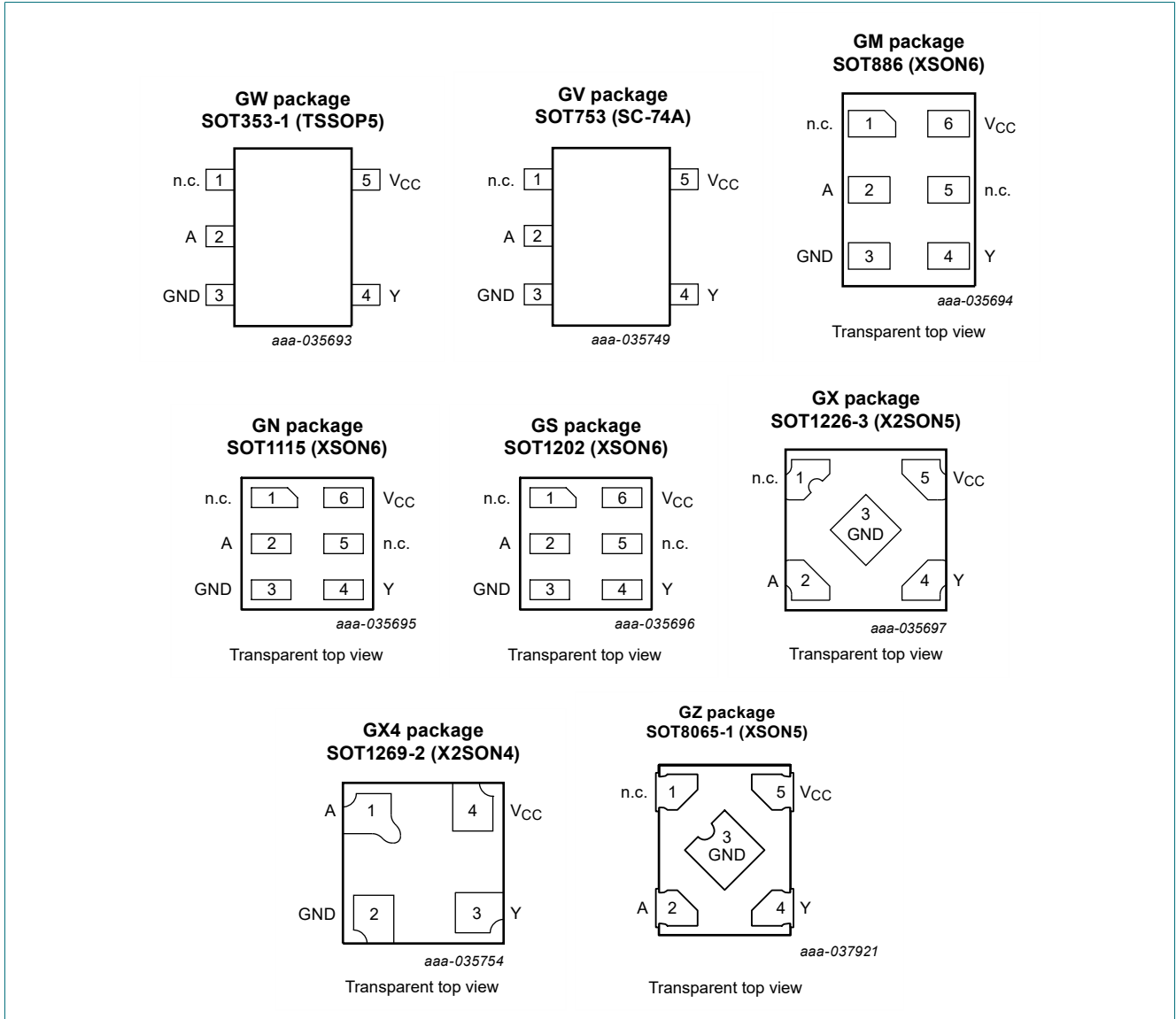


Fig. 3. Logic diagram

## 6. Pinning information

### 6.1. Pinning



### 6.2. Pin description

Table 3. Pin description

Symbol	Pin			Description
	TSSOP5, SC-74A, XSON5 and X2SON5	XSON6	X2SON4	
n.c.	1	1, 5	-	not connected
A	2	2	1	data input
GND	3	3	2	ground (0 V)
Y	4	4	3	data output
V <sub>CC</sub>	5	6	4	supply voltage

## 7. Functional description

**Table 4. Function table**

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

Input	Output
A	Y
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	+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	-	$\pm 50$	mA
$V_O$	output voltage	Active mode [1]	-0.5	$V_{CC} + 0.5$	V
		Power-down mode; $V_{CC} = 0$ V [1]	-0.5	+6.5	V
$I_O$	output current	$V_O = 0$ to $V_{CC}$	-	$\pm 50$	mA
$I_{CC}$	supply current		-	100	mA
$I_{GND}$	ground current		-100	-	mA
$T_{stg}$	storage temperature		-65	+150	°C
$P_{tot}$	total power dissipation	$T_{amb} = -40$ °C to $+125$ °C			
		SOT353-1 (TSSOP5) [2] SOT753 (SC-74A) SOT886 (XSON6) SOT1115 (XSON6) SOT1202 (XSON6) SOT1226-3 (X2SON5) SOT8065-1 (XSON5)	-	250	mW
		SOT1269-2 (X2SON4) [3]	-	150	mW

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

[2] For SOT353-1 (TSSOP5) package:  $P_{tot}$  derates linearly with 3.3 mW/K above 74 °C.

For SOT753 (SC-74A) package:  $P_{tot}$  derates linearly with 3.8 mW/K above 85 °C.

For SOT886 (XSON6) package:  $P_{tot}$  derates linearly with 3.3 mW/K above 74 °C.

For SOT1115 (XSON6) package:  $P_{tot}$  derates linearly with 3.2 mW/K above 71 °C.

For SOT1202 (XSON6) package:  $P_{tot}$  derates linearly with 3.3 mW/K above 74 °C.

For SOT1226-3 (X2SON5) package:  $P_{tot}$  derates linearly with 3.0 mW/K above 67 °C.

For SOT8065-1 (XSON5) package:  $P_{tot}$  derates linearly with 3.2 mW/K above 72 °C.

[3] For SOT1269-2 (X2SON4) package:  $P_{tot}$  derates linearly with 1.7 mW/K above 57 °C.

## 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	-	$V_{CC}$	$V_O$
		Power-down mode; $V_{CC} = 0$ V	0	-	5.5	$V_O$
$T_{amb}$	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	Min	Typ[1]	Max	Unit
<b><math>T_{amb} = -40</math> °C to <math>+85</math> °C</b>						
$V_{IH}$	HIGH-level input voltage	$V_{CC} = 1.65$ V to 1.95 V	$0.65 \times V_{CC}$	-	-	V
		$V_{CC} = 2.3$ V to 2.7 V	1.7	-	-	V
		$V_{CC} = 2.7$ V to 3.6 V	2.0	-	-	V
		$V_{CC} = 4.5$ V to 5.5 V	$0.7 \times V_{CC}$	-	-	V
$V_{IL}$	LOW-level input voltage	$V_{CC} = 1.65$ V to 1.95 V	-	-	$0.35 \times V_{CC}$	V
		$V_{CC} = 2.3$ V to 2.7 V	-	-	0.7	V
		$V_{CC} = 2.7$ V to 3.6 V	-	-	0.8	V
		$V_{CC} = 4.5$ V to 5.5 V	-	-	$0.3 \times V_{CC}$	V
$V_{OH}$	HIGH-level output voltage	$V_I = V_{IH}$ or $V_{IL}$				
		$I_O = -100$ $\mu$ A; $V_{CC} = 1.65$ V to 5.5 V	$V_{CC} - 0.1$	-	-	V
		$I_O = -4$ mA; $V_{CC} = 1.65$ V	1.2	-	-	V
		$I_O = -8$ mA; $V_{CC} = 2.3$ V	1.9	-	-	V
		$I_O = -12$ mA; $V_{CC} = 2.7$ V	2.2	-	-	V
		$I_O = -24$ mA; $V_{CC} = 3.0$ V	2.3	-	-	V
$V_{OL}$	LOW-level output voltage	$V_I = V_{IH}$ or $V_{IL}$				
		$I_O = 100$ $\mu$ A; $V_{CC} = 1.65$ V to 5.5 V	-	-	0.1	V
		$I_O = 4$ mA; $V_{CC} = 1.65$ V	-	-	0.45	V
		$I_O = 8$ mA; $V_{CC} = 2.3$ V	-	-	0.3	V
		$I_O = 12$ mA; $V_{CC} = 2.7$ V	-	-	0.4	V
		$I_O = 24$ mA; $V_{CC} = 3.0$ V	-	-	0.55	V
$I_I$	input leakage current	$V_{CC} = 0$ V to 5.5 V; $V_I = 5.5$ V or GND	-	$\pm 0.1$	$\pm 1$	$\mu$ A
		$V_{CC} = 0$ V; $V_I$ or $V_O = 5.5$ V	-	$\pm 0.1$	$\pm 2$	$\mu$ A
$I_{CC}$	supply current	$V_I = 5.5$ V or GND; $V_{CC} = 1.65$ V to 5.5 V; $I_O = 0$ A	-	0.1	4	$\mu$ A

Symbol	Parameter	Conditions	Min	Typ[1]	Max	Unit
$\Delta I_{CC}$	additional supply current	per pin; $V_{CC} = 2.3 \text{ V to } 5.5 \text{ V}$ ; $V_I = V_{CC} - 0.6 \text{ V}$ ; $I_O = 0 \text{ A}$	-	5	500	$\mu\text{A}$
$C_I$	input capacitance	$V_{CC} = 3.3 \text{ V}$ ; $V_I = \text{GND to } V_{CC}$	-	5	-	pF
<b><math>T_{\text{amb}} = -40 \text{ }^\circ\text{C to } +125 \text{ }^\circ\text{C}</math></b>						
$V_{IH}$	HIGH-level input voltage	$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$	$0.65 \times V_{CC}$	-	-	V
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	1.7	-	-	V
		$V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$	2.0	-	-	V
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$	$0.7 \times V_{CC}$	-	-	V
$V_{IL}$	LOW-level input voltage	$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$	-	-	$0.35 \times V_{CC}$	V
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	-	-	0.7	V
		$V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$	-	-	0.8	V
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$	-	-	$0.3 \times V_{CC}$	V
$V_{OH}$	HIGH-level output voltage	$V_I = V_{IH} \text{ or } V_{IL}$				
		$I_O = -100 \mu\text{A}$ ; $V_{CC} = 1.65 \text{ V to } 5.5 \text{ V}$	$V_{CC} - 0.1$	-	-	V
		$I_O = -4 \text{ mA}$ ; $V_{CC} = 1.65 \text{ V}$	0.95	-	-	V
		$I_O = -8 \text{ mA}$ ; $V_{CC} = 2.3 \text{ V}$	1.7	-	-	V
		$I_O = -12 \text{ mA}$ ; $V_{CC} = 2.7 \text{ V}$	1.9	-	-	V
		$I_O = -24 \text{ mA}$ ; $V_{CC} = 3.0 \text{ V}$	2.0	-	-	V
		$I_O = -32 \text{ mA}$ ; $V_{CC} = 4.5 \text{ V}$	3.4	-	-	V
$V_{OL}$	LOW-level output voltage	$V_I = V_{IH} \text{ or } V_{IL}$				
		$I_O = 100 \mu\text{A}$ ; $V_{CC} = 1.65 \text{ V to } 5.5 \text{ V}$	-	-	0.1	V
		$I_O = 4 \text{ mA}$ ; $V_{CC} = 1.65 \text{ V}$	-	-	0.70	V
		$I_O = 8 \text{ mA}$ ; $V_{CC} = 2.3 \text{ V}$	-	-	0.45	V
		$I_O = 12 \text{ mA}$ ; $V_{CC} = 2.7 \text{ V}$	-	-	0.60	V
		$I_O = 24 \text{ mA}$ ; $V_{CC} = 3.0 \text{ V}$	-	-	0.80	V
		$I_O = 32 \text{ mA}$ ; $V_{CC} = 4.5 \text{ V}$	-	-	0.80	V
$I_I$	input leakage current	$V_{CC} = 0 \text{ V to } 5.5 \text{ V}$ ; $V_I = 5.5 \text{ V or GND}$	-	-	$\pm 1$	$\mu\text{A}$
$I_{OFF}$	power-off leakage current	$V_{CC} = 0 \text{ V}$ ; $V_I \text{ or } V_O = 5.5 \text{ V}$	-	-	$\pm 2$	$\mu\text{A}$
$I_{CC}$	supply current	$V_I = 5.5 \text{ V or GND}$ ; $V_{CC} = 1.65 \text{ V to } 5.5 \text{ V}$ ; $I_O = 0 \text{ A}$	-	-	4	$\mu\text{A}$
$\Delta I_{CC}$	additional supply current	per pin; $V_{CC} = 2.3 \text{ V to } 5.5 \text{ V}$ ; $V_I = V_{CC} - 0.6 \text{ V}$ ; $I_O = 0 \text{ A}$	-	-	500	$\mu\text{A}$

[1] All typical values are measured at  $V_{CC} = 3.3 \text{ V}$  and  $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ .

## 11. Dynamic characteristics

**Table 8. Dynamic characteristics**

Voltages are referenced to GND (ground = 0 V). For test circuit see Fig. 5.

Symbol	Parameter	Conditions	-40 °C to +85 °C			-40 °C to +125 °C		Unit
			Min	Typ[1]	Max	Min	Max	
t <sub>pd</sub>	propagation delay	A to Y; see Fig. 4 [2]						
		V <sub>CC</sub> = 1.65 V to 1.95 V	1.0	3.0	7.5	1.0	9.5	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	0.5	2.0	5.0	0.5	6.5	ns
		V <sub>CC</sub> = 2.7 V	0.5	2.3	5.2	0.5	7.0	ns
		V <sub>CC</sub> = 3.0 V to 3.6 V	0.5	2.0	4.2	0.5	5.5	ns
		V <sub>CC</sub> = 4.5 V to 5.5 V	0.5	1.6	3.7	0.5	5.0	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 [3]	-	14	-	-	-	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>PLH</sub> and t<sub>PHL</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;

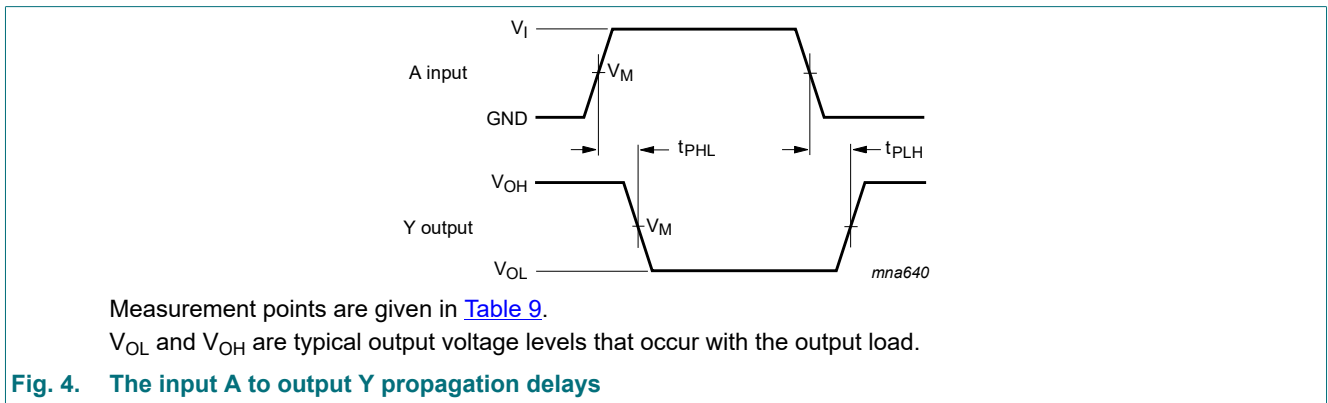
C<sub>L</sub> = output load capacitance in pF;

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

N = number of inputs switching;

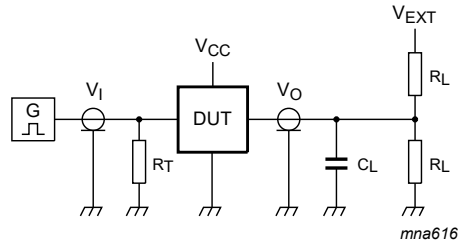
$\sum(C_L \times V_{CC}^2 \times f_o)$  = sum of outputs.

### 11.1. Waveform and test circuit



**Table 9. Measurement points**

Supply voltage	Input	Output
V <sub>CC</sub>	V <sub>M</sub>	V <sub>M</sub>
1.65 V to 1.95 V	0.5 × V <sub>CC</sub>	0.5 × V <sub>CC</sub>
2.3 V to 2.7 V	0.5 × V <sub>CC</sub>	0.5 × V <sub>CC</sub>
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 <sub>CC</sub>	0.5 × V <sub>CC</sub>



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. 5. Test circuit for measuring 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



## 12. Package outline

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

SOT353-1

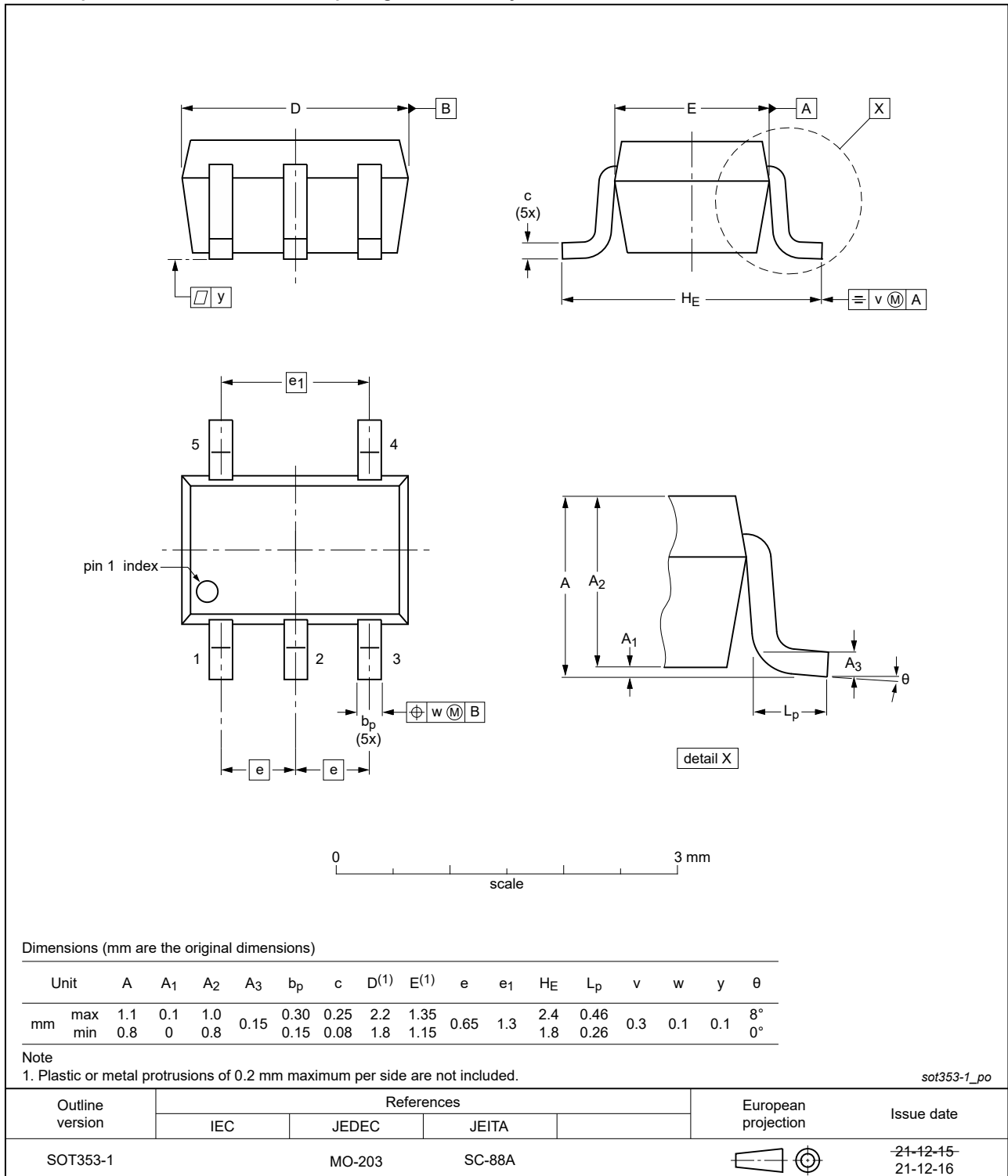


Fig. 6. Package outline SOT353-1 (TSSOP5)

Plastic surface-mounted package; 5 leads

SOT753

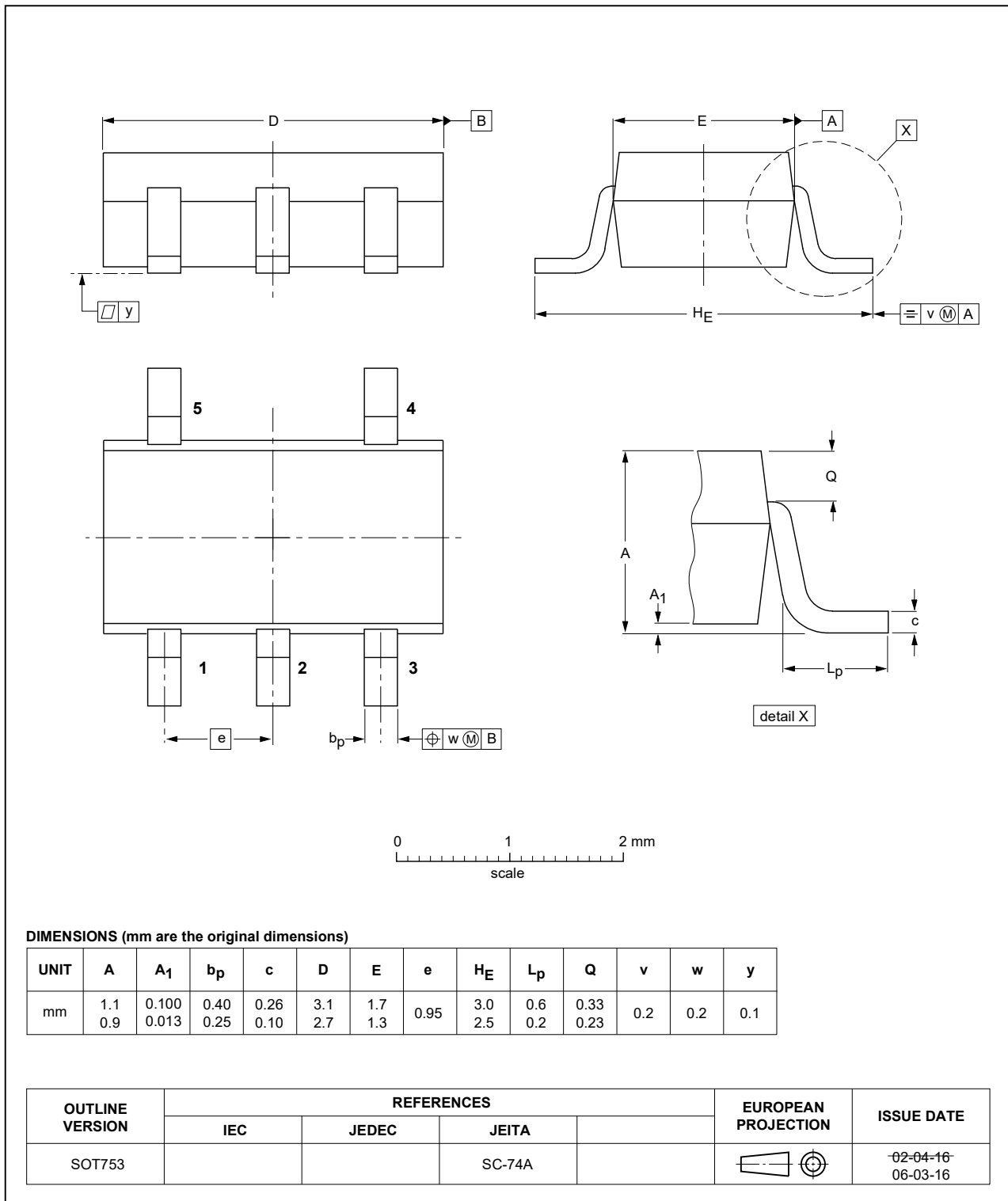


Fig. 7. Package outline SOT753 (SC-74A)

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

SOT886

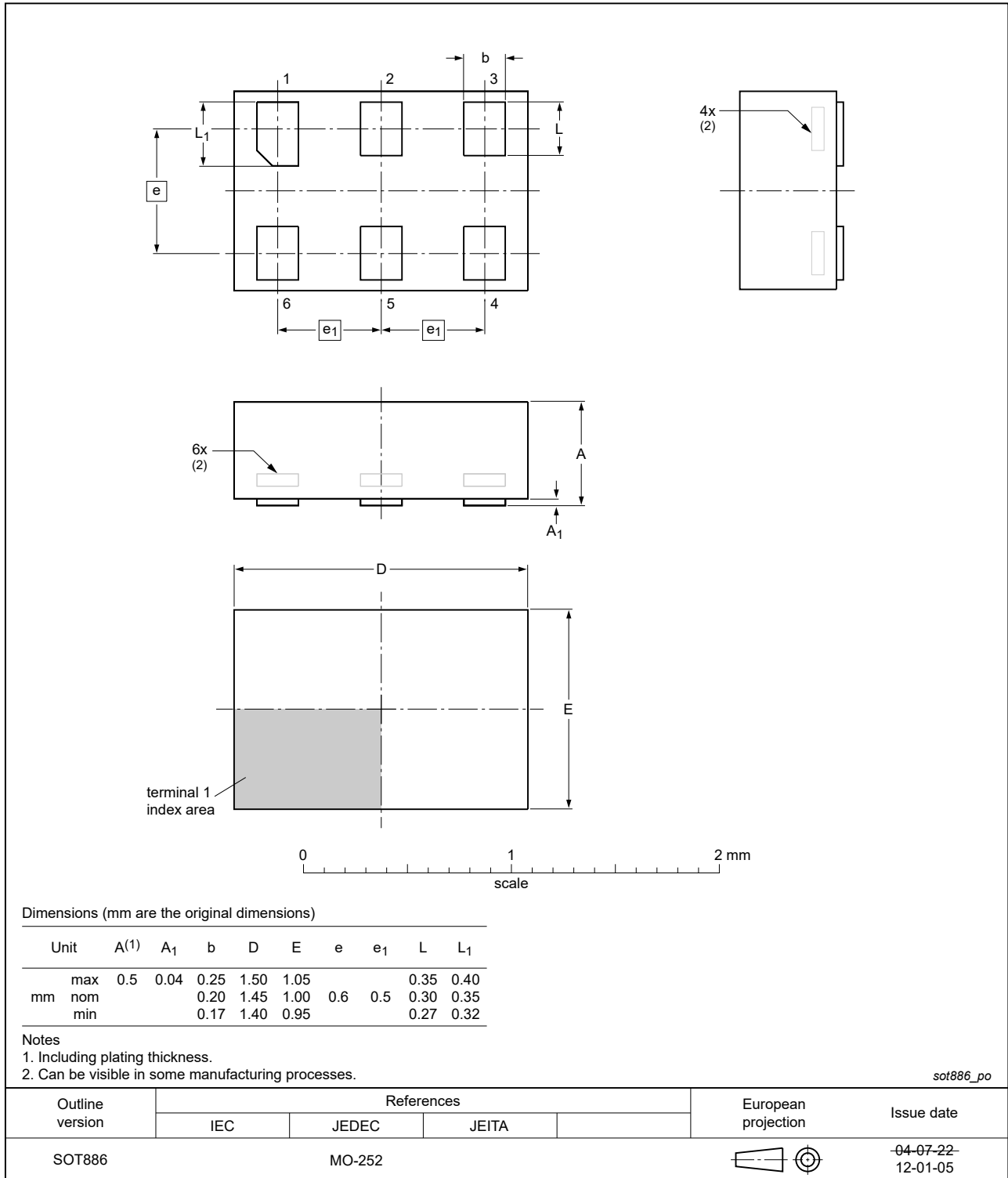


Fig. 8. Package outline SOT886 (XSON6)

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

SOT1115



Fig. 9. 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

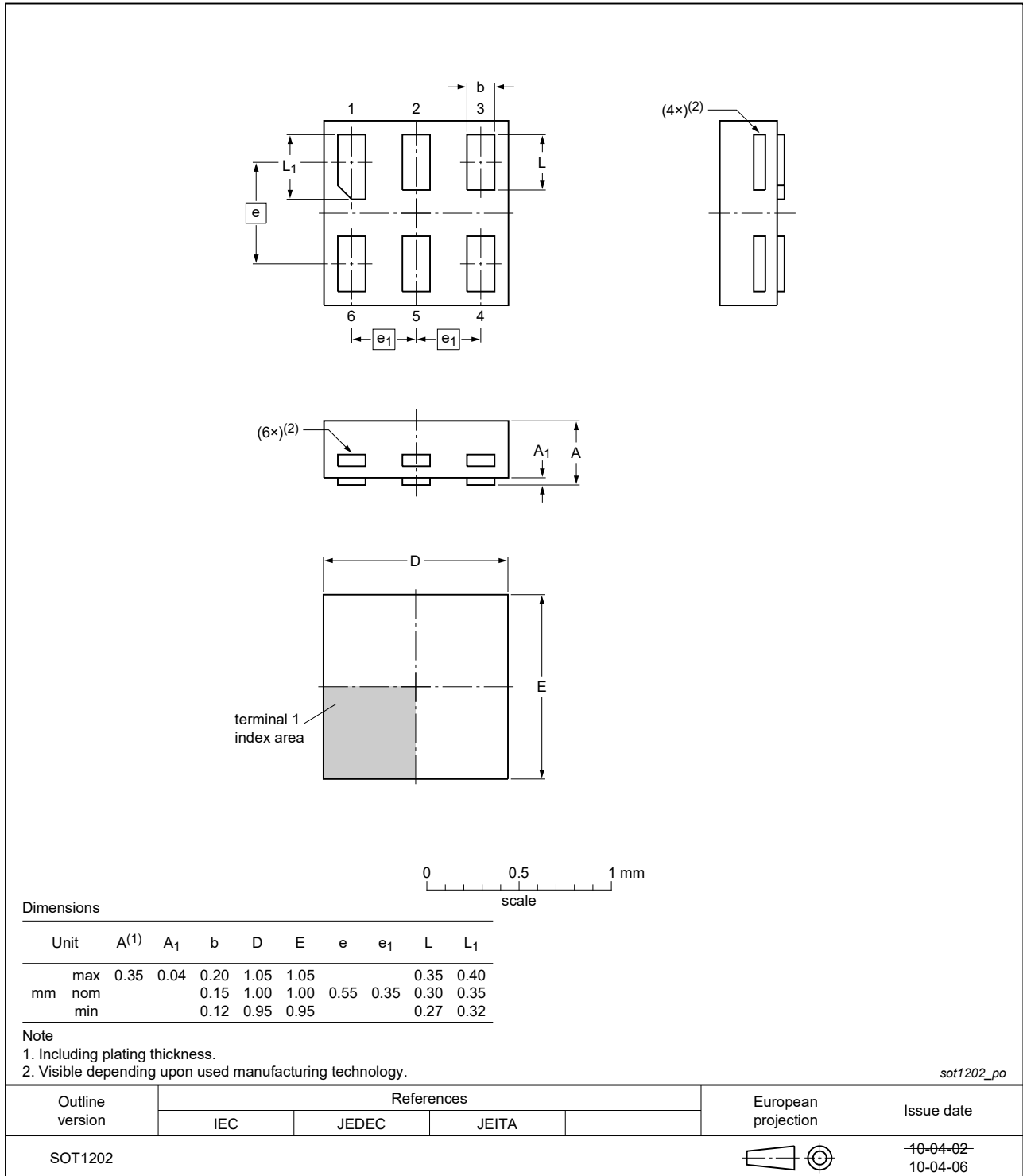


Fig. 10. Package outline SOT1202 (XSON6)

X2SON5: plastic thermal enhanced extremely thin small outline package; no leads; 5 terminals; body 0.8 x 0.8 x 0.32 mm

SOT1226-3

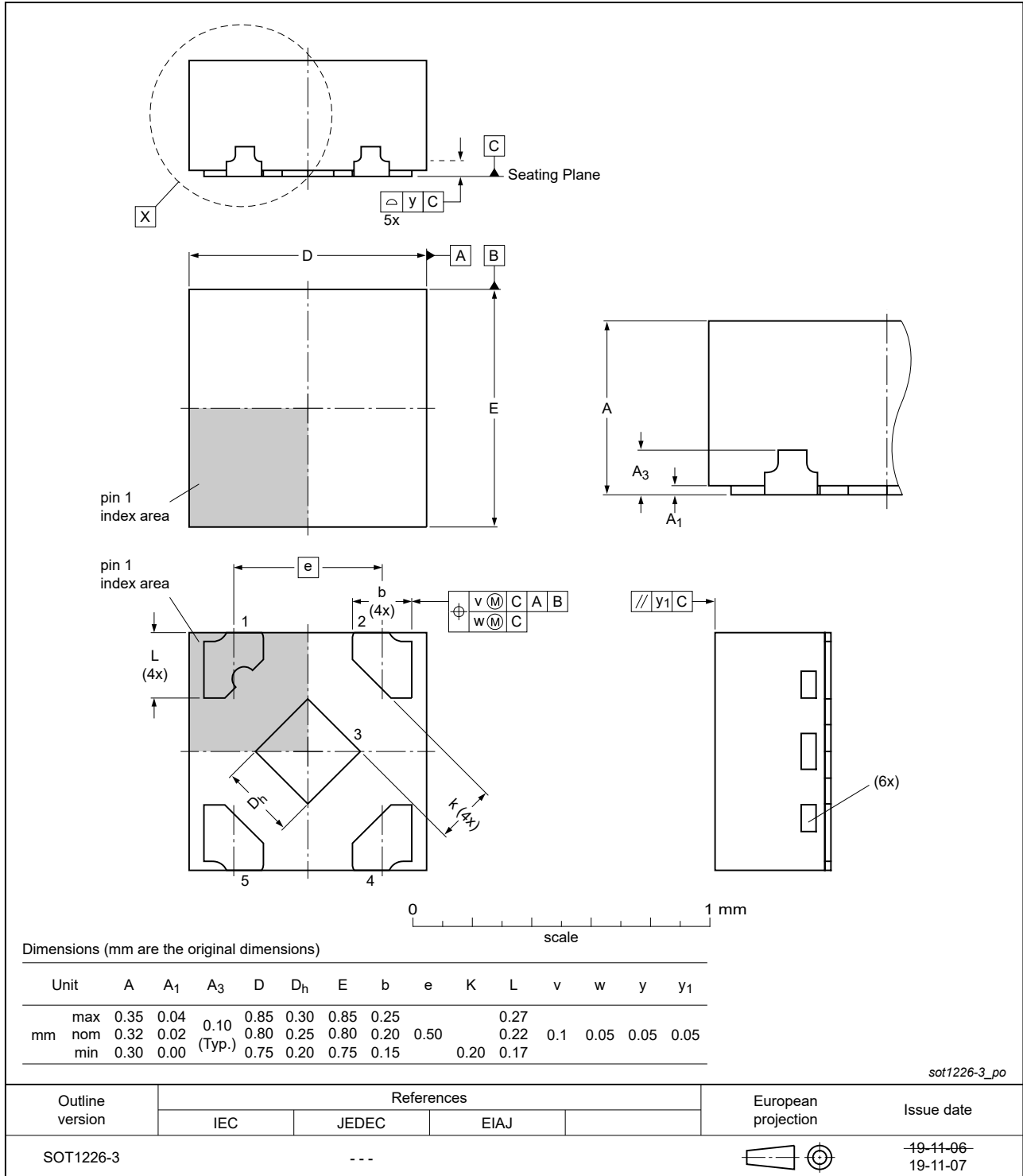


Fig. 11. Package outline SOT1226-3 (X2SON5)

X2SON4: plastic thermal enhanced extremely thin small outline package; no leads; 4 terminals; body 0.6 x 0.6 x 0.32 mm

SOT1269-2

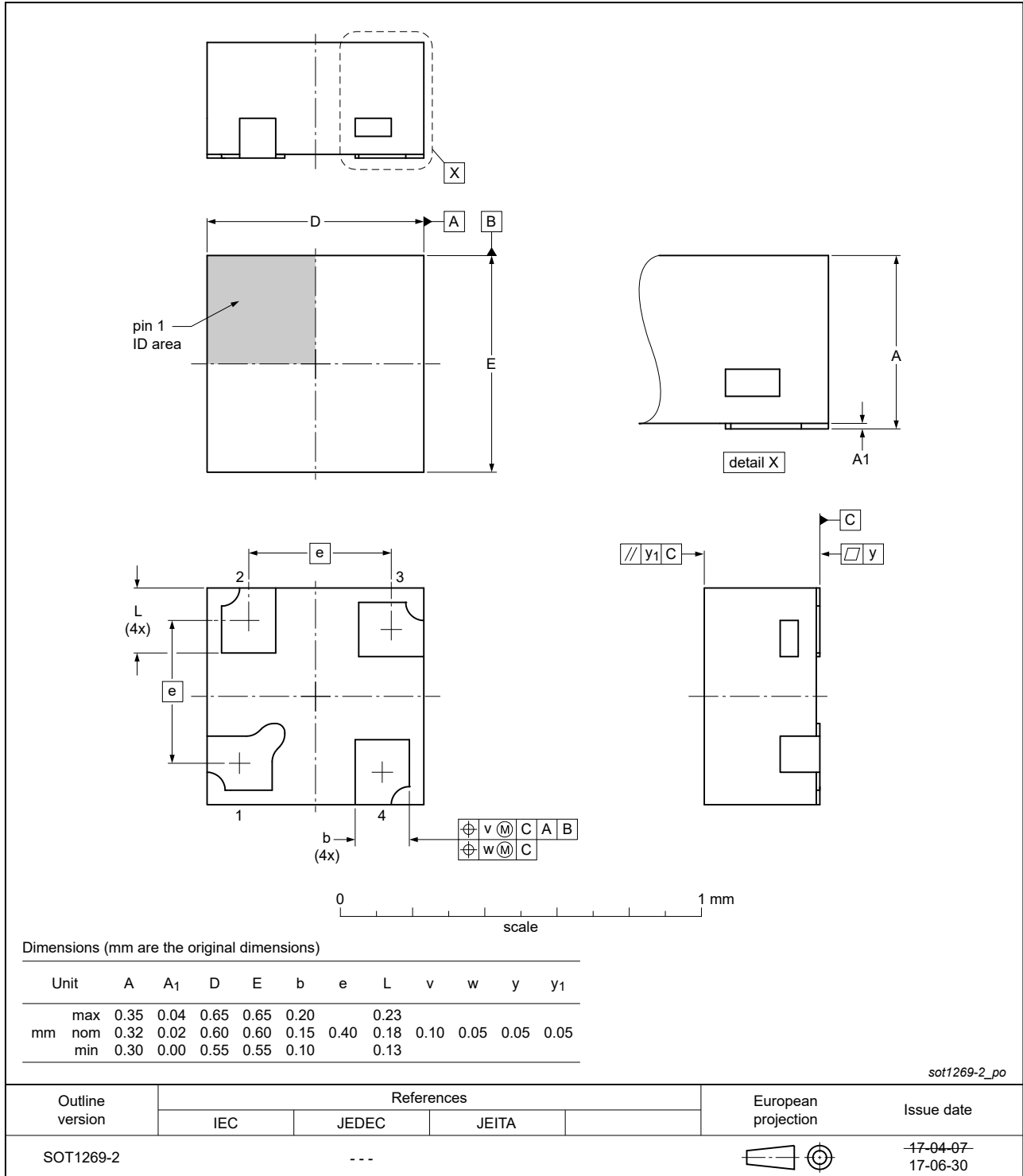


Fig. 12. Package outline SOT1269-2 (X2SON4)

**XSON5: Plastic thermal enhanced extremely thin small outline package with side-wettable flanks (SWF); no leads; 5 terminals; body 1.1 × 0.85 × 0.5 mm**

SOT8065-1

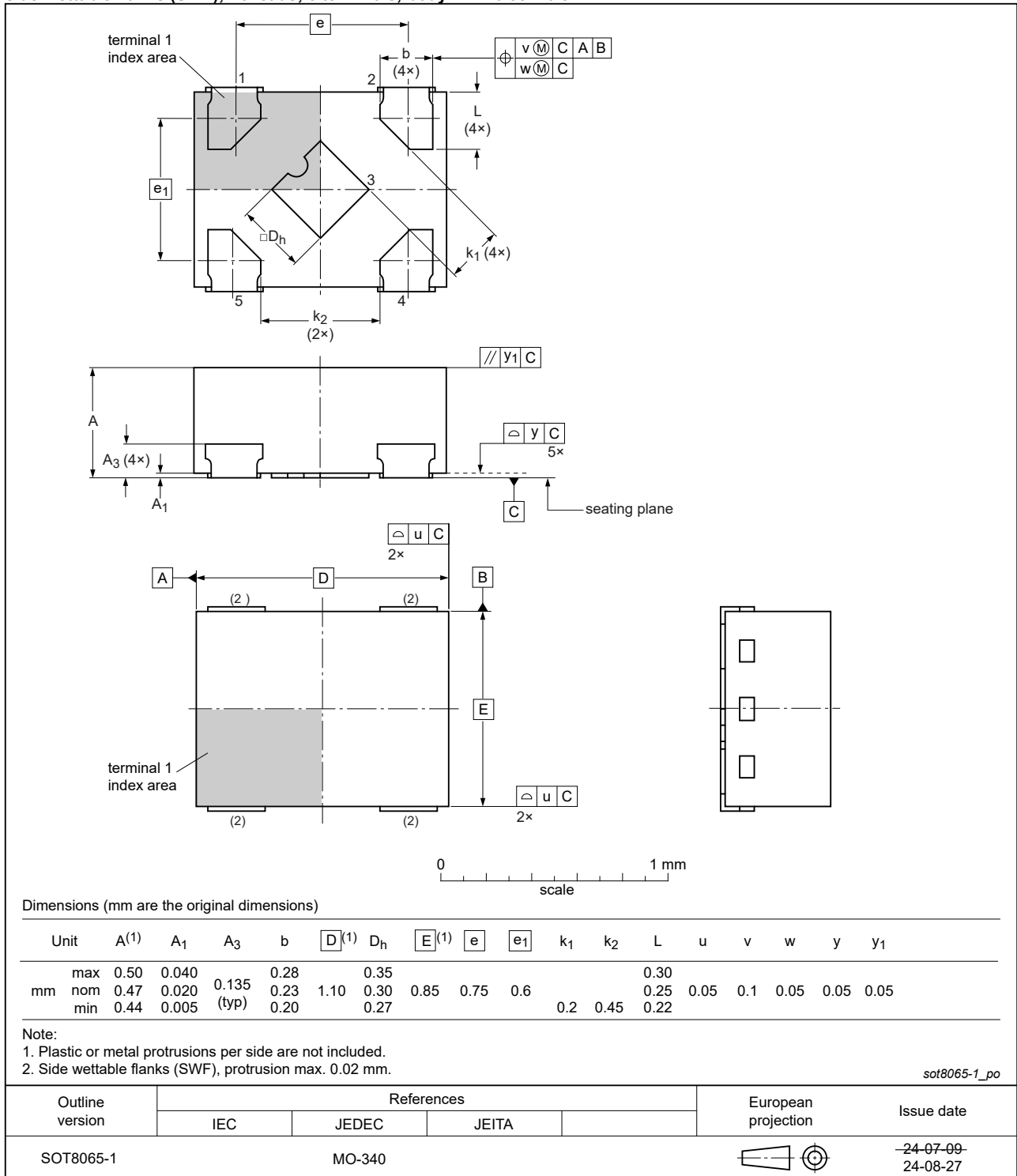


Fig. 13. Package outline SOT8065-1 (XSON5)



## 13. Abbreviations

Table 11. Abbreviations

Acronym	Description
ANSI	American National Standards Institute
CMOS	Complementary Metal Oxide Semiconductor
DUT	Device Under Test
ESD	ElectroStatic Discharge
ESDA	ElectroStatic Discharge Association
HBM	Human Body Model
JEDEC	Joint Electron Device Engineering Council
TTL	Transistor-Transistor Logic

## 14. Revision history

Table 12. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74LVC1G04 v.18.1	20240902	Product data sheet	-	74LVC1G04 v.18
Modifications:	<ul style="list-style-type: none"> <li><a href="#">Fig. 13</a>: Added JEDEC reference MO-340 to SOT8065-1 package outline drawing.</li> </ul>			
74LVC1G04 v.18	20240711	Product data sheet	-	74LVC1G04 v.17
Modifications:	<ul style="list-style-type: none"> <li>Type number 74LVC1G04GZ (SOT8065-1/XSON5) added.</li> </ul>			
74LVC1G04 v.17	20230804	Product data sheet	-	74LVC1G04 v.16
Modifications:	<ul style="list-style-type: none"> <li><a href="#">Section 2</a>: ESD specification updated according to the latest JEDEC standard.</li> </ul>			
74LVC1G04 v.16	20220209	Product data sheet	-	74LVC1G04 v.15
Modifications:	<ul style="list-style-type: none"> <li>SOT1226 (X2SON5) package changed to SOT1226-3 (X2SON5) package.</li> <li><a href="#">Fig. 6</a>: Package outline drawing for SOT353-1 (TSSOP5) package has changed.</li> <li>Type number 74LVC1G04GF (SOT891/XSON6) removed.</li> <li><a href="#">Table 5</a>: Derating values for <math>P_{tot}</math> total power dissipation updated.</li> <li><a href="#">Section 1</a> and <a href="#">Section 2</a> updated.</li> </ul>			
74LVC1G04 v.15	20180608	Product data sheet	-	74LVC1G04 v.14
Modifications:	<ul style="list-style-type: none"> <li>Added type number 74LVC1G04GX4 (SOT1269-2)</li> </ul>			
74LVC1G04 v.14	20171101	Product data sheet	-	74LVC1G04 v.13
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> </ul>			
74LVC1G04 v.13	20161128	Product data sheet	-	74LVC1G04 v.12
Modifications:	<ul style="list-style-type: none"> <li><a href="#">Table 7</a>: The maximum limits for leakage current and supply current have changed.</li> </ul>			
74LVC1G04 v.12	20120806	Product data sheet	-	74LVC1G04 v.11
Modifications:	<ul style="list-style-type: none"> <li>Package outline drawing of SOT1226 modified.</li> </ul>			
74LVC1G04 v.11	20120412	Product data sheet	-	74LVC1G04 v.10
Modifications:	<ul style="list-style-type: none"> <li>Added type number 74LVC1G04GX (SOT1226)</li> <li>Package outline drawing of SOT886 (<a href="#">Fig. 8</a>) modified.</li> </ul>			
74LVC1G04 v.10	20111207	Product data sheet	-	74LVC1G04 v.9
Modifications:	<ul style="list-style-type: none"> <li>Legal pages updated.</li> </ul>			

## 15. 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.

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- [2] The term 'short data sheet' is explained in section "Definitions".
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