74LVC1G14GM,115 Datasheet

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DiGi Electronics Part Number	74LVC1G14GM,115-DG
Manufacturer	Nexperia USA Inc.
Manufacturer Product Number	74LVC1G14GM,115
Description	IC INVERT SCHMITT 1CH 1INP 6XSON
Detailed Description	Inverter IC 1 Channel Schmitt Trigger 6-XSON, SOT886 (1.45x1)

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
74LVC1G14GM,115	Nexperia USA Inc.
Series:	Product Status:
74LVC	Active
Logic Type:	Number of Circuits:
Inverter	1
Number of Inputs:	Features:
1	Schmitt Trigger
Voltage - Supply:	Current - Quiescent (Max):
1.65V ~ 5.5V	4 µA
Current - Output High, Low:	Input Logic Level - Low:
32mA, 32mA	0.46V ~ 1.58V
Input Logic Level - High:	Max Propagation Delay @ V, Max CL:
1.14V ~ 2.79V	6.5ns @ 5V, 50pF
Operating Temperature:	Mounting Type:
-40°C ~ 125°C (TA)	Surface Mount
Supplier Device Package:	Package / Case:
6-XSON, SOT886 (1.45x1)	6-XFDFN
Base Product Number:	
74LVC1G14	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8542.39.0001	

74LVC1G14

Single Schmitt-trigger inverter

Rev. 19.1 — 3 September 2024 **Product data sheet**

1. General description

The 74LVC1G14 is a single inverter with Schmitt-trigger inputs. 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. This device is fully specified for partial power down applications using I_{OFF}. The I_{OFF} circuitry disables the output, preventing the potentially 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
- Overvoltage tolerant inputs to 5.5 V
- High noise immunity
- CMOS low power dissipation
- I_{OFF} circuitry provides partial Power-down mode operation
- ±24 mA output drive (V_{CC} = 3.0 V)
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- Unlimited rise and fall times
- 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. Applications

- Wave and pulse shaper
- Astable multivibrator
- Monostable multivibrator

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4. Ordering information

Table 1. Ordering information

Type number	Package			
	Temperature range	**Name**	**Description**	**Version**
74LVC1G14GW	-40 °C to +125 °C	TSSOP5	plastic thin shrink small outline package; 5 leads; body width 1.25 mm	SOT353-1
74LVC1G14GV	-40 °C to +125 °C	SC-74A	plastic surface-mounted package; 5 leads	SOT753
74LVC1G14GM	-40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm	SOT886
74LVC1G14GN	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm	SOT1115
74LVC1G14GS	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm	SOT1202
74LVC1G14GX	-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	SOT1226-3
74LVC1G14GX4	-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	SOT1269-2
74LVC1G14GZ	-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	SOT8065-1

5. Marking

Table 2. Marking

Type number	Marking code[1]
74LVC1G14GW	VF
74LVC1G14GV	V14
74LVC1G14GM	VF
74LVC1G14GN	VF
74LVC1G14GS	VF
74LVC1G14GX	VF
74LVC1G14GX4	VF
74LVC1G14GZ	VF

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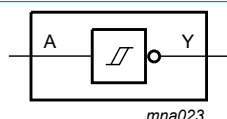
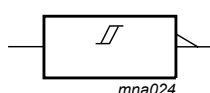## 6. Functional diagram

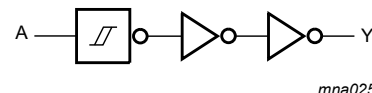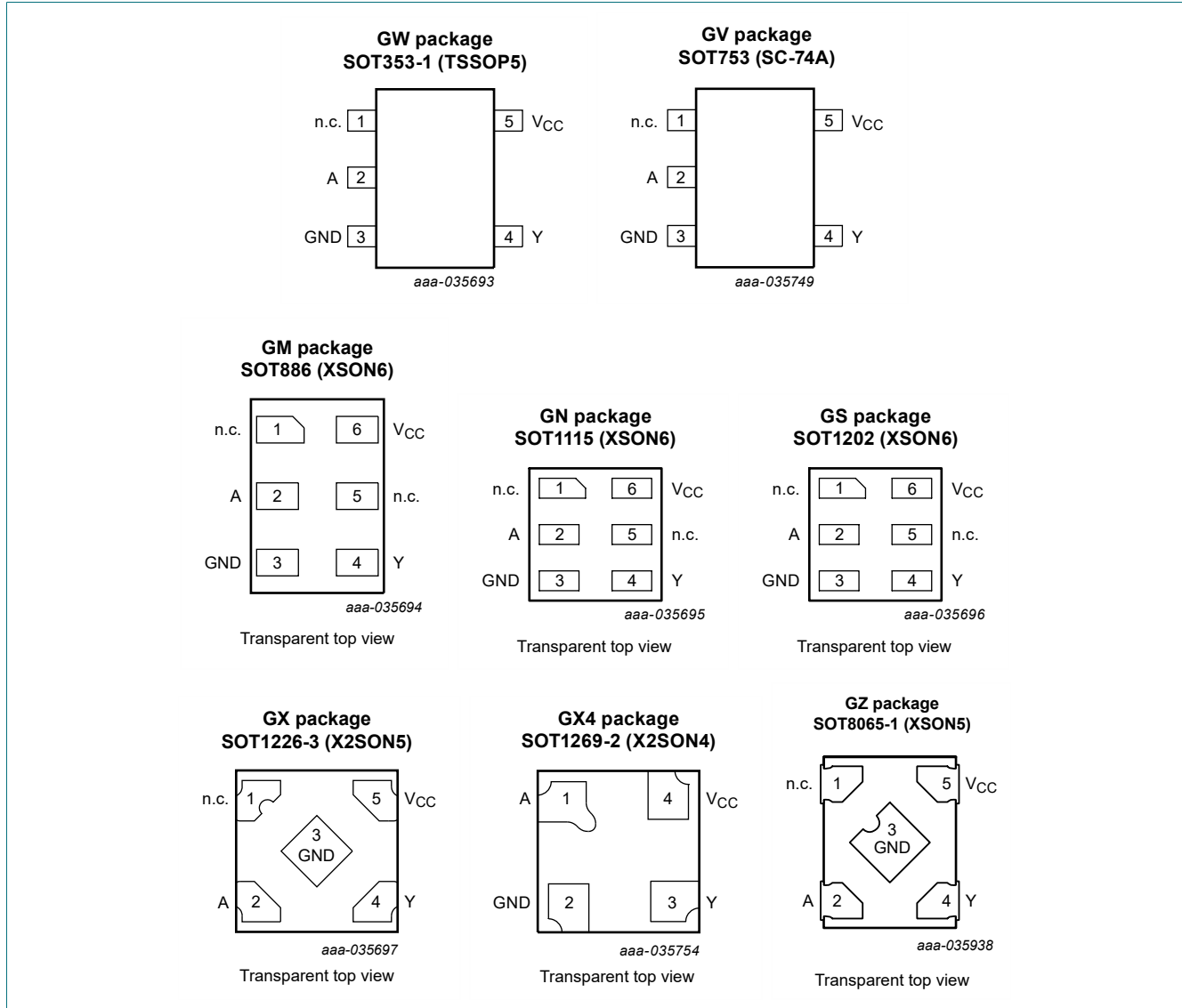Fig. 1. Logic symbol

Fig. 2. IEC logic symbol

Fig. 3. Logic diagram

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7. Pinning information

7.1. Pinning

GW package
SOT353-1 (TSSOP5)

n.c. [1] ... [5] V$_{CC}$
A [2] ... [4] Y
GND [3] ... [4] Y

aaa-035693

GV package
SOT753 (SC-74A)

n.c. [1] ... [5] V$_{CC}$
A [2]
GND [3] ... [4] Y

aaa-035749

GM package
SOT886 (XSON6)

n.c. [1] [6] V$_{CC}$
A [2] [5] n.c.
GND [3] [4] Y

aaa-035694

Transparent top view

GN package
SOT1115 (XSON6)

n.c. [1] [6] V$_{CC}$
A [2] [5] n.c.
GND [3] [4] Y

aaa-035695

Transparent top view

GS package
SOT1202 (XSON6)

n.c. [1] [6] V$_{CC}$
A [2] [5] n.c.
GND [3] [4] Y

aaa-035696

Transparent top view

GX package
SOT1226-3 (X2SON5)

n.c. [1] [5] V$_{CC}$
[3] GND
A [2] [4] Y

aaa-035697

Transparent top view

GX4 package
SOT1269-2 (X2SON4)

A [1] [4] V$_{CC}$
GND [2] [3] Y

aaa-035754

Transparent top view

GZ package
SOT8065-1 (XSON5)

n.c. [1] [5] V$_{CC}$
[3] GND
A [2] [4] Y

aaa-035938

Transparent top view

7.2. 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$_{CC}$	5	6	4	supply voltage

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8. Functional description

Table 4. Function table

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

Input	Output
A	Y
L	H
H	L

9. 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
V_I	input voltage		[1]	-0.5	+6.5	V
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_{IK}	input clamping current	V_I < 0 V		-50	-	mA
I_{OK}	output clamping current	V_O > V_{CC} or V_O < 0 V		-	±50	mA
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
T_{stg}	storage temperature			-65	+150	°C
P_{tot}	total power dissipation	T_{amb} = -40 °C to +125 °C				
		SOT353-1 (TSSOP5) SOT753 (SC-74A) SOT886 (XSON6) SOT1115 (XSON6) SOT1202 (XSON6) SOT1226-3 (X2SON5) SOT8065-1 (XSON5)	[2]	-	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.

10. 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

11. 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[1]	Max	Min	Max	
V_{OH}	HIGH-level output voltage	V_I = V_{T+} or V_{T-}						
		I_O = -100 µA; 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	1.54	-	0.95	-	V
		I_O = -8 mA; V_{CC} = 2.3 V	1.9	2.15	-	1.7	-	V
		I_O = -12 mA; V_{CC} = 2.7 V	2.2	2.50	-	1.9	-	V
		I_O = -24 mA; V_{CC} = 3.0 V	2.3	2.62	-	2.0	-	V
		I_O = -32 mA; V_{CC} = 4.5 V	3.8	4.11	-	3.4	-	V
V_{OL}	LOW-level output voltage	V_I = V_{T+} or V_{T-}						
		I_O = 100 µA; V_{CC} = 1.65 V to 5.5 V	-	-	0.10	-	0.10	V
		I_O = 4 mA; V_{CC} = 1.65 V	-	0.07	0.45	-	0.70	V
		I_O = 8 mA; V_{CC} = 2.3 V	-	0.12	0.30	-	0.45	V
		I_O = 12 mA; V_{CC} = 2.7 V	-	0.17	0.40	-	0.60	V
		I_O = 24 mA; V_{CC} = 3.0 V	-	0.33	0.55	-	0.80	V
		I_O = 32 mA; V_{CC} = 4.5 V	-	0.39	0.55	-	0.80	V
I_I	input leakage current	V_I = 5.5 V or GND; V_{CC} = 0 V to 5.5 V	-	±0.1	±1	-	±1	µA
I_{OFF}	power-off leakage current	V_I or V_O = 5.5 V; V_{CC} = 0 V	-	±0.1	±2	-	±2	µA
I_{CC}	supply current	V_I = 5.5 V or GND; I_O = 0 A; V_{CC} = 1.65 V to 5.5 V	-	0.1	4	-	4	µA
ΔI_{CC}	additional supply current	V_I = V_{CC} - 0.6 V; I_O = 0 A; V_{CC} = 2.3 V to 5.5 V	-	5	500	-	500	µA
C_I	input capacitance	V_{CC} = 3.3 V; V_I = GND to V_{CC}	-	5.0	-	-	-	pF

[1] All typical values are measured at maximum V_{CC} and T_{amb} = 25 °C.

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11.1. Transfer characteristics

Table 8. Transfer characteristics

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

Symbol	Parameter	Conditions	-40 °C to +85 °C			-40 °C to +125 °C		Unit
			Min	Typ[1]	Max	Min	Max	
V_{T+}	positive-going threshold voltage	see Fig. 4 and Fig. 5						
		V_{CC} = 1.8 V	0.82	1.0	1.14	0.79	1.14	V
		V_{CC} = 2.3 V	1.03	1.2	1.40	1.00	1.40	V
		V_{CC} = 3.0 V	1.29	1.5	1.71	1.26	1.71	V
		V_{CC} = 4.5 V	1.84	2.1	2.36	1.81	2.36	V
		V_{CC} = 5.5 V	2.19	2.5	2.79	2.16	2.79	V
V_{T-}	negative-going threshold voltage	see Fig. 4 and Fig. 5						
		V_{CC} = 1.8 V	0.46	0.6	0.75	0.46	0.78	V
		V_{CC} = 2.3 V	0.65	0.8	0.96	0.65	0.99	V
		V_{CC} = 3.0 V	0.88	1.0	1.24	0.88	1.27	V
		V_{CC} = 4.5 V	1.32	1.5	1.84	1.32	1.87	V
		V_{CC} = 5.5 V	1.58	1.8	2.24	1.58	2.27	V
V_H	hysteresis voltage	$(V_{T+} - V_{T-})$; see Fig. 4, Fig. 5 and Fig. 6						
		V_{CC} = 1.8 V	0.26	0.4	0.51	0.19	0.51	V
		V_{CC} = 2.3 V	0.28	0.4	0.57	0.22	0.57	V
		V_{CC} = 3.0 V	0.31	0.5	0.64	0.25	0.64	V
		V_{CC} = 4.5 V	0.40	0.6	0.77	0.34	0.77	V
		V_{CC} = 5.5 V	0.47	0.6	0.88	0.41	0.88	V

[1] Typical values are measured at T_{amb} = 25 °C.
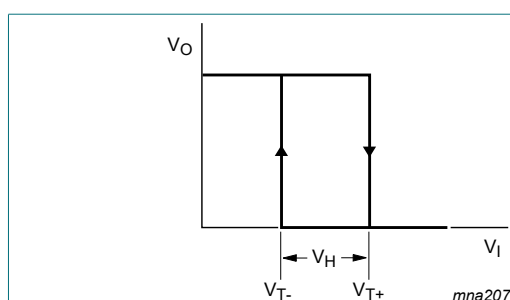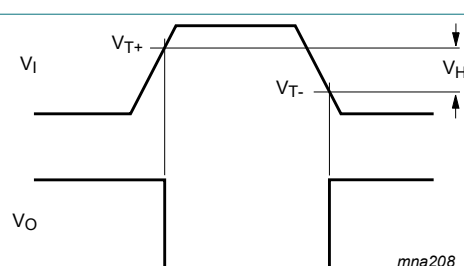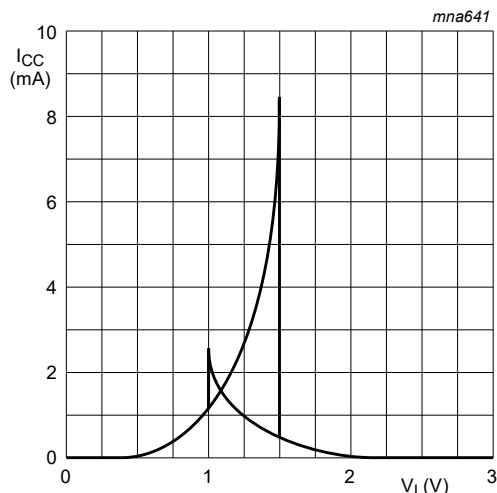
11.2. Waveforms transfer characteristics

Fig. 4. Transfer characteristic

V_{T+} and V_{T-} limits at 70 % and 20 %.

Fig. 5. Definition of V_{T+}, V_{T-} and V_H

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V_{CC} = 3.0 V.

Fig. 6.   Typical transfer characteristics

12. Dynamic characteristics

Table 9. Dynamic characteristics

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

Symbol	Parameter	Conditions		-40 °C to +85 °C			-40 °C to +125 °C		Unit
				Min	Typ[1]	Max	Min	Max	
t_{pd}	propagation delay	A to Y; see Fig. 7 [2]							
		V_{CC} = 1.65 V to 1.95 V		1.0	4.1	11.0	1.0	14.0	ns
		V_{CC} = 2.3 V to 2.7 V		0.7	2.8	6.5	0.7	8.5	ns
		V_{CC} = 2.7 V		0.7	3.2	6.5	0.7	8.5	ns
		V_{CC} = 3.0 V to 3.6 V		0.7	3.0	5.5	0.7	7.0	ns
		V_{CC} = 4.5 V to 5.5 V		0.7	2.2	5.0	0.7	6.5	ns
C_{PD}	power dissipation capacitance	V_{CC} = 3.3 V; V_I = GND to V_{CC} [3]		-	15.4	-	-	-	pF

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

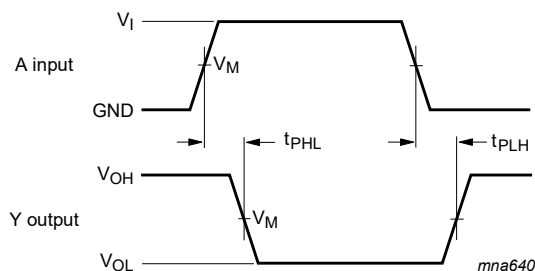$P_D = C_{PD} \times V_{CC}^2 \times f_i + (C_L \times V_{CC}^2 \times f_o)$ where:

f_i = input frequency in MHz;

f_o = output frequency in MHz;

C_L = output load capacitance in pF;

V_{CC} = supply voltage in V.

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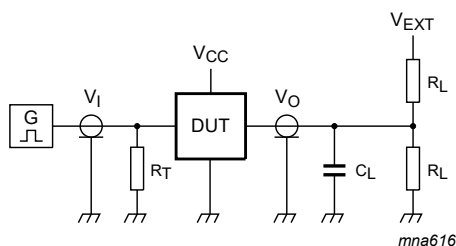
12.1. Waveform and test circuit

Measurement points are given in Table 10.

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

Fig. 7. The data input (A) to output (Y) propagation delays

Table 10. 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 11.

Definitions for test circuit:

R_L = Load resistance;

C_L = Load capacitance including jig and probe capacitance;

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

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

Fig. 8. Test circuit for measuring switching times

Table 11. 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}	≤ 2.0 ns	30 pF	1 kΩ	open
2.3 V to 2.7 V	V_{CC}	≤ 2.0 ns	30 pF	500 Ω	open
2.7 V	2.7 V	≤ 2.5 ns	50 pF	500 Ω	open
3.0 V to 3.6 V	2.7 V	≤ 2.5 ns	50 pF	500 Ω	open
4.5 V to 5.5 V	V_{CC}	≤ 2.5 ns	50 pF	500 Ω	open

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13. Application information

The slow input rise and fall times cause additional power dissipation, this can be calculated using the following formula:

$P_{add} = f_i \times (t_r \times \Delta I_{CC(AV)} + t_f \times \Delta I_{CC(AV)}) \times V_{CC}$ where:

- P_{add} = additional power dissipation (μW);
- f_i = input frequency (MHz);
- t_r = input rise time (ns); 10 % to 90 %;
- t_f = input fall time (ns); 90 % to 10 %;
- $\Delta I_{CC(AV)}$ = average additional supply current (μA).

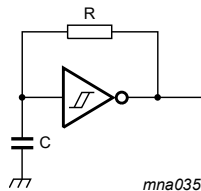Average $\Delta I_{CC(AV)}$ differs with positive or negative input transitions, as shown in Fig. 9.

An example of a relaxation circuit using the 74LVC1G14 is shown in Fig. 10.
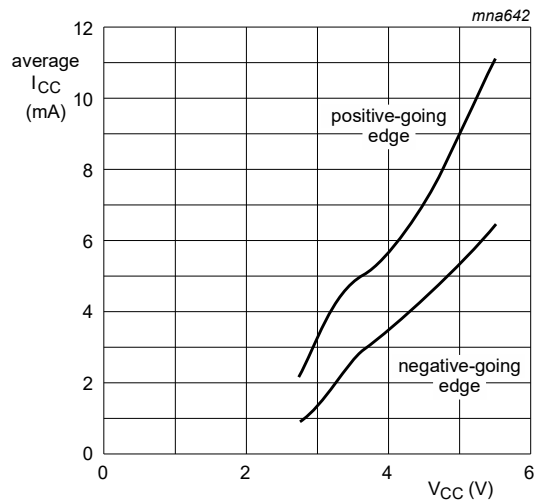
Linear change of V_I between 0.8 V to 2.0 V.
All values given are typical unless otherwise specified.

Fig. 9. Average additional supply current as a function of supply voltage

$f = \dfrac{1}{T} \approx \dfrac{1}{K \times RC}$
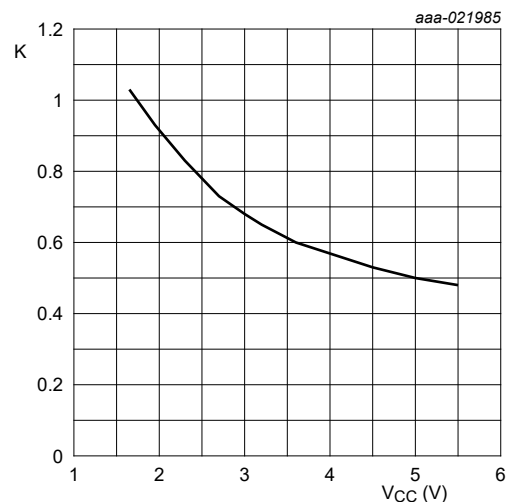For K-factor, see Fig. 11.

Fig. 10. Relaxation oscillator

Fig. 11. Typical K-factor for relaxation oscillator

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14. Package outline

TSSOP5: plastic thin shrink small outline package; 5 leads; body width 1.25 mm   **SOT353-1**

Dimensions (mm are the original dimensions)

Unit		A	A₁	A₂	A₃	b_p	c	D(1)	E(1)	e	e₁	H_E	L_p	v	w	y	θ
mm	max	1.1	0.1	1.0	0.15	0.30	0.25	2.2	1.35	0.65	1.3	2.4	0.46	0.3	0.1	0.1	8°
	min	0.8	0	0.8		0.15	0.08	1.8	1.15			1.8	0.26				0°

Note
1. Plastic or metal protrusions of 0.2 mm maximum per side are not included.

sot353-1_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT353-1		MO-203	SC-88A			~~21-12-15~~ 21-12-16
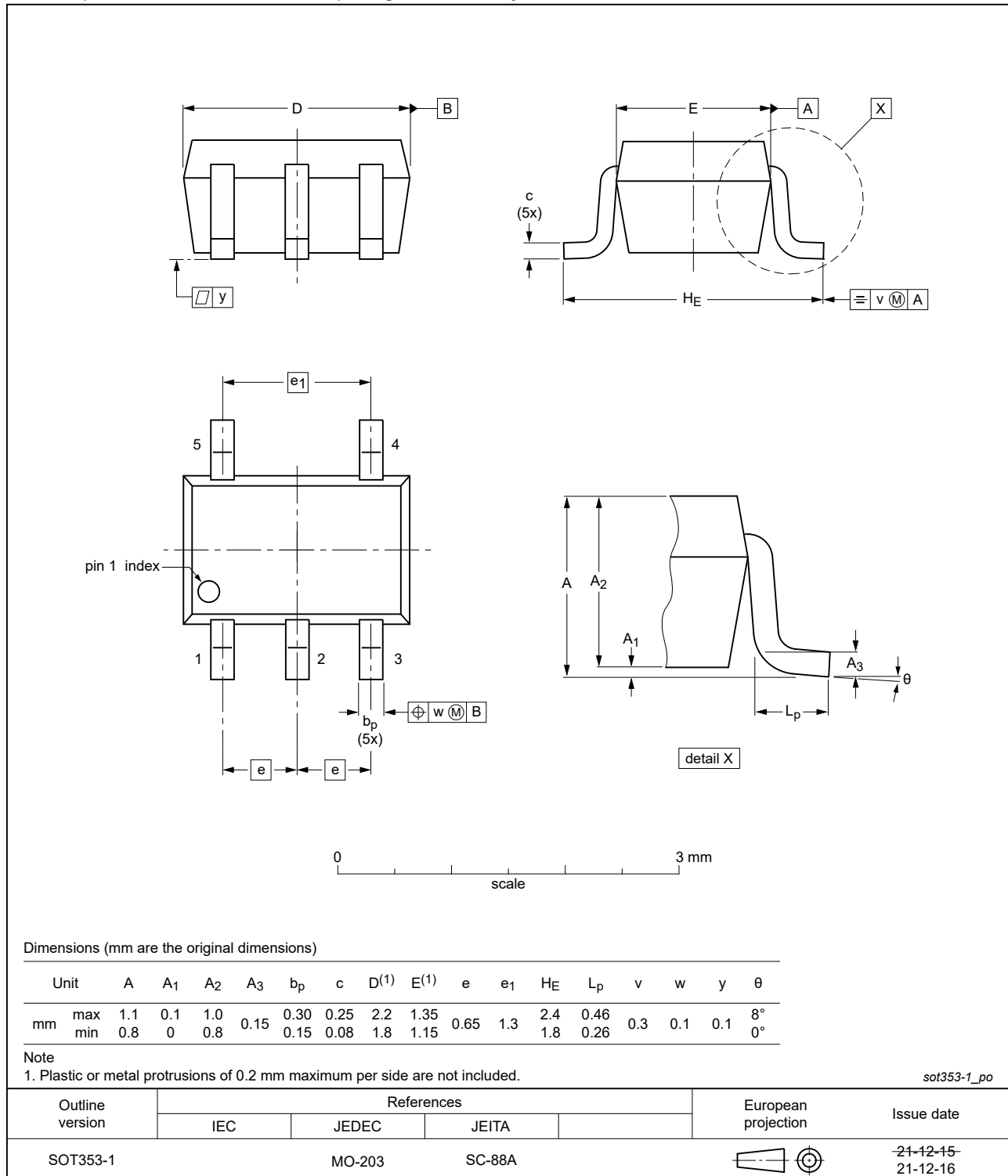
Fig. 12. Package outline SOT353-1 (TSSOP5)

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Plastic surface-mounted package; 5 leads

SOT753

DIMENSIONS (mm are the original dimensions)

UNIT	A	A₁	b$_p$	c	D	E	e	H$_E$	L$_p$	Q	v	w	y
mm	1.1 0.9	0.100 0.013	0.40 0.25	0.26 0.10	3.1 2.7	1.7 1.3	0.95	3.0 2.5	0.6 0.2	0.33 0.23	0.2	0.2	0.1

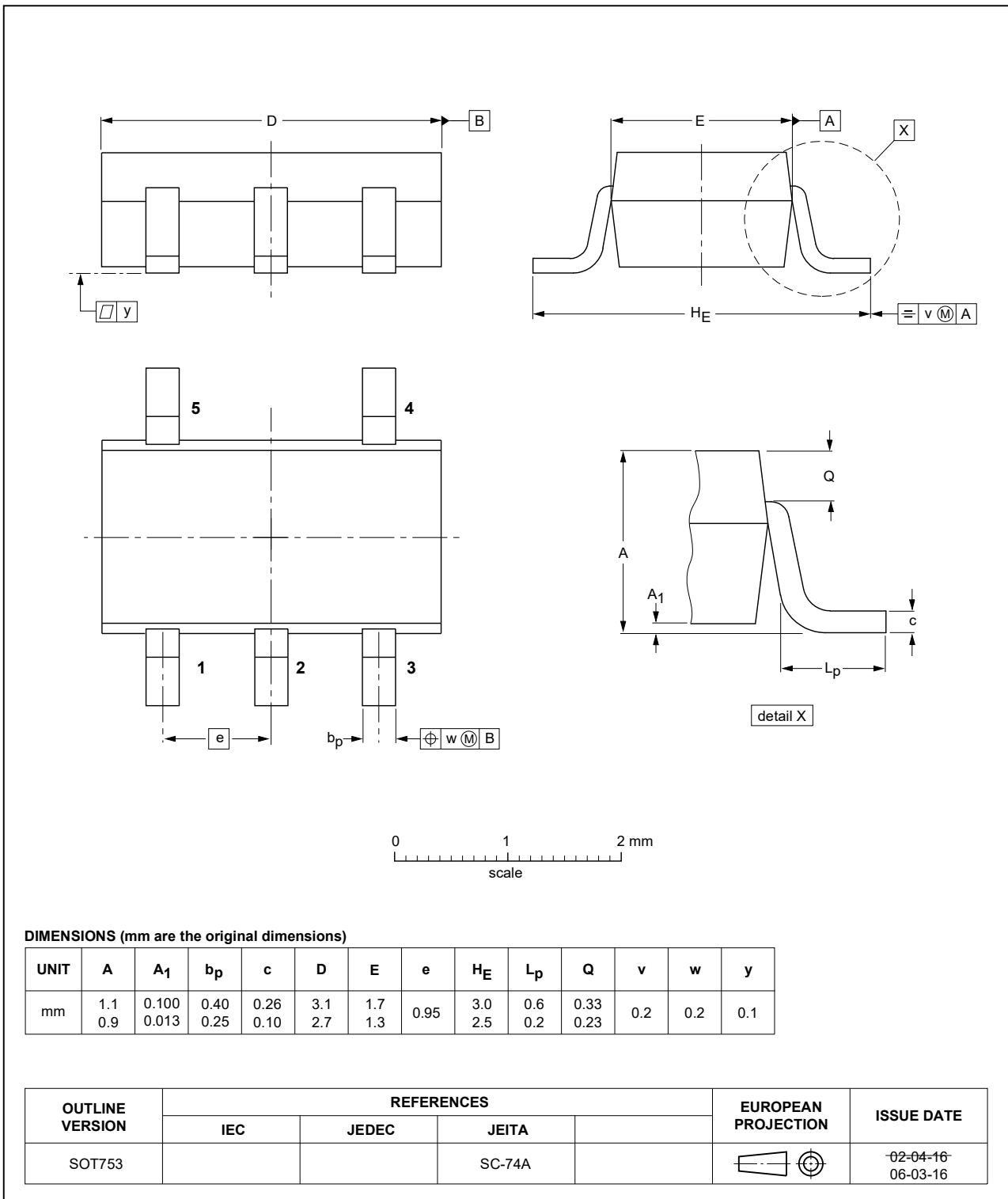| OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT753			SC-74A			~~02-04-16~~ 06-03-16

Fig. 13.   Package outline SOT753 (SC-74A)

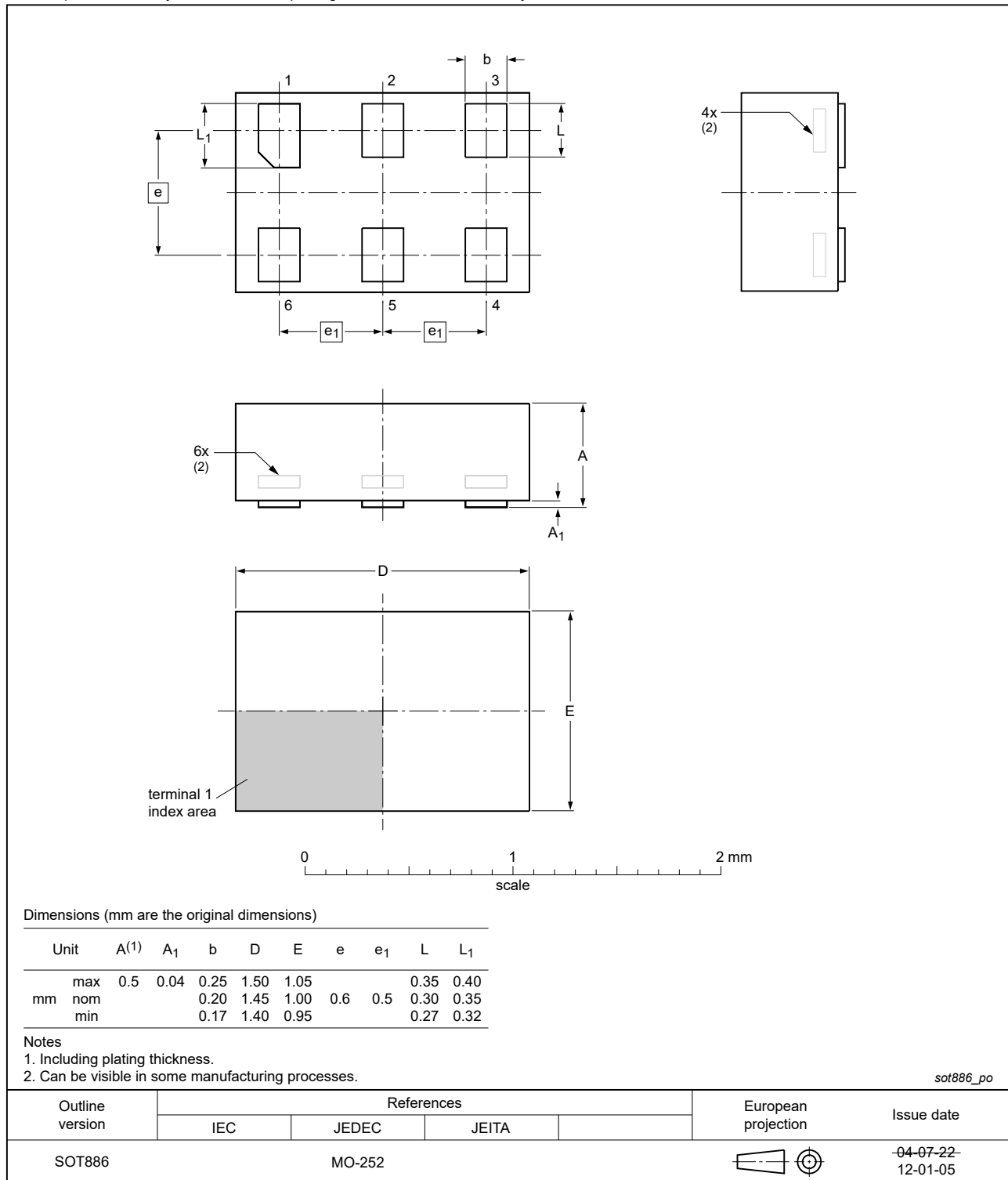XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm   SOT886

Dimensions (mm are the original dimensions)

Unit		A[(1)]	A₁	b	D	E	e	e₁	L	L₁
mm	max	0.5	0.04	0.25	1.50	1.05			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
1. Including plating thickness.
2. 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)

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XSON6: extremely thin small outline package; no leads;
6 terminals; body 0.9 x 1.0 x 0.35 mm   **SOT1115**
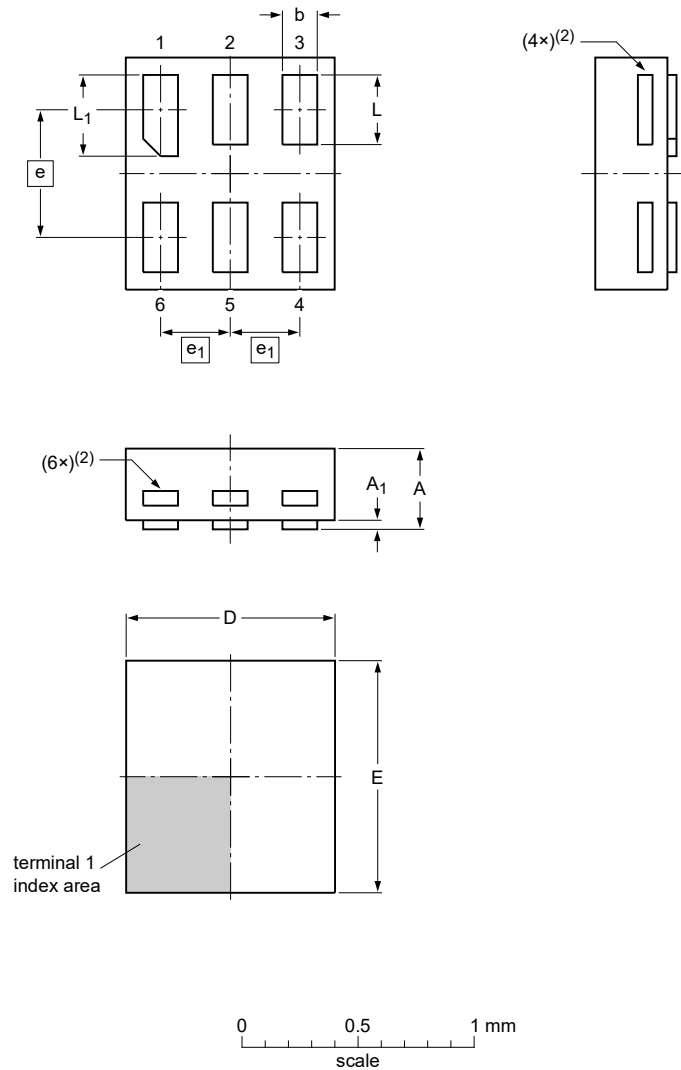
Dimensions										
Unit	$A^{(1)}$	A_1	b	D	E	e	e_1	L	L_1	
mm max	0.35	0.04	0.20	0.95	1.05			0.35	0.40	
nom			0.15	0.90	1.00	0.55	0.3	0.30	0.35	
min			0.12	0.85	0.95			0.27	0.32	

Note
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~~ 10-04-07

Fig. 15. Package outline SOT1115 (XSON6)

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

SOT1202
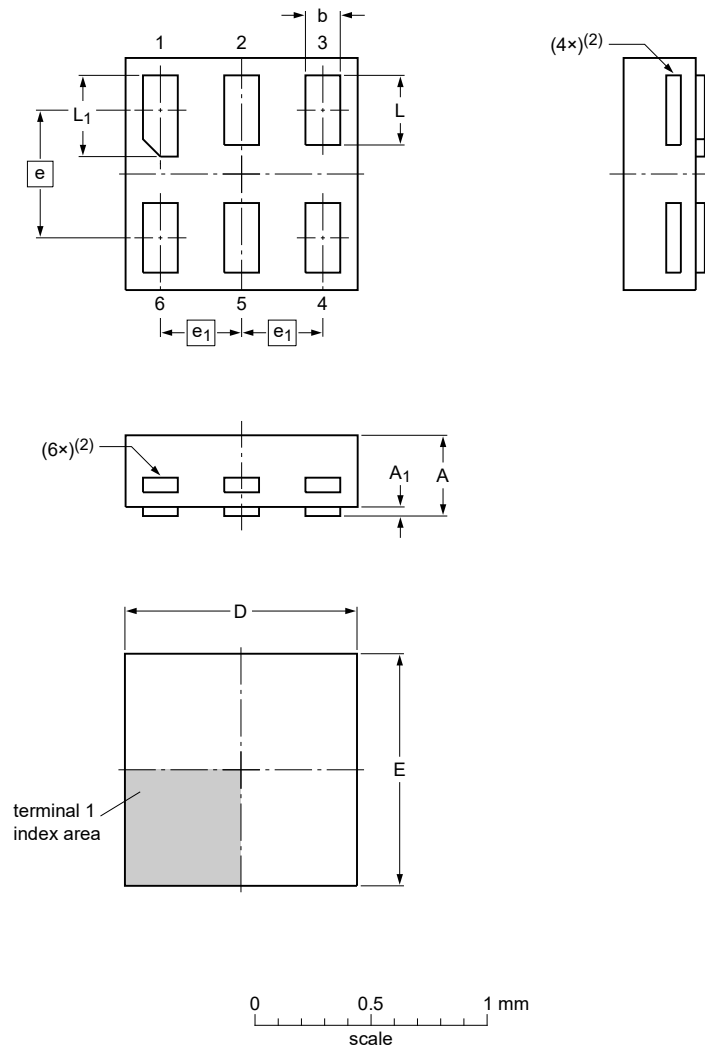
Dimensions

	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
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~~ 10-04-06

Fig. 16. Package outline SOT1202 (XSON6)

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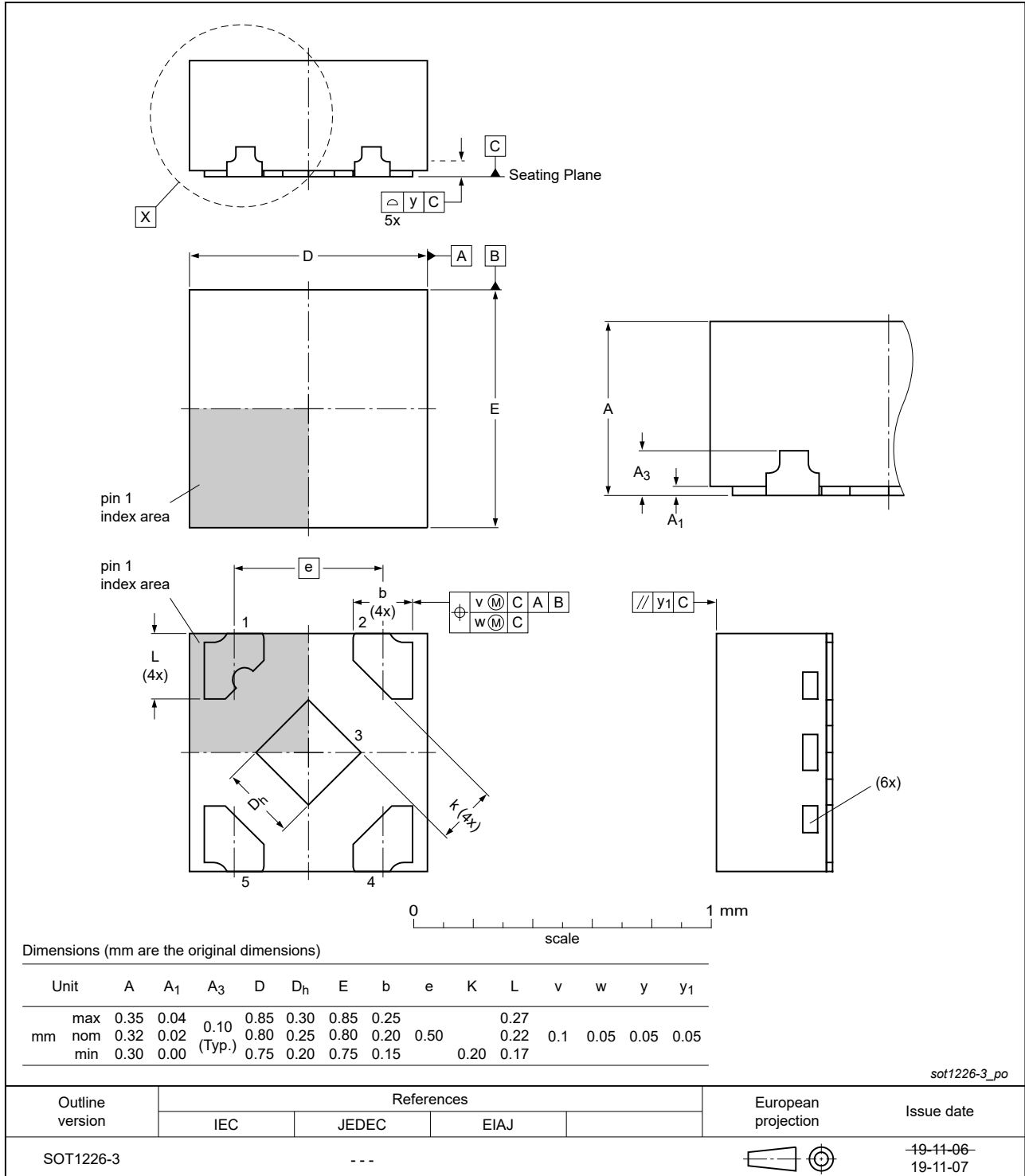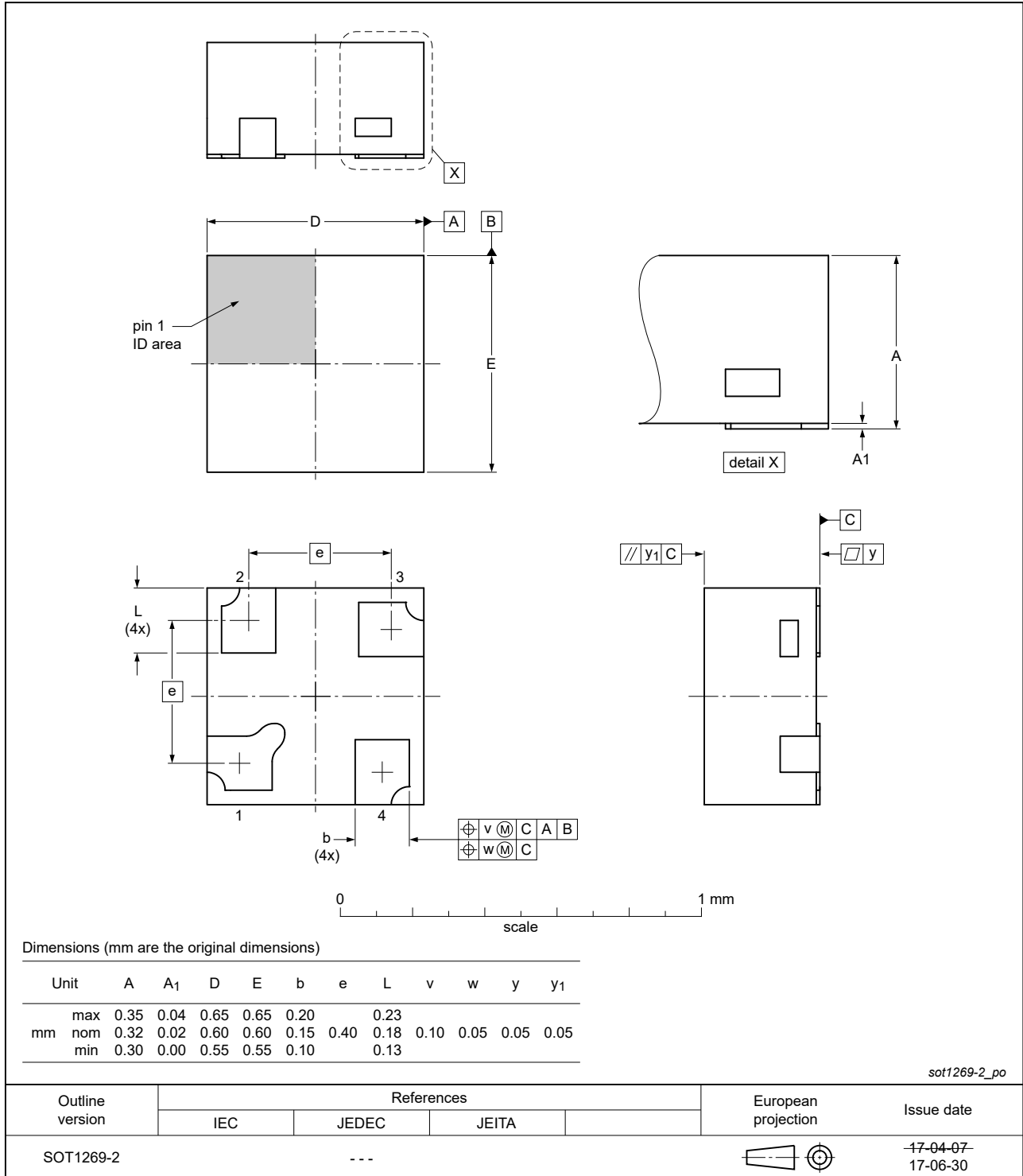5 terminals; body 0.8 x 0.8 x 0.32 mm**

SOT1226-3

Dimensions (mm are the original dimensions)

Unit		A	A₁	A₃	D	Dₕ	E	b	e	K	L	v	w	y	y₁
mm	max	0.35	0.04	0.10 (Typ.)	0.85	0.30	0.85	0.25			0.27				
	nom	0.32	0.02		0.80	0.25	0.80	0.20	0.50		0.22	0.1	0.05	0.05	0.05
	min	0.30	0.00		0.75	0.20	0.75	0.15		0.20	0.17				

sot1226-3_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	EIAJ			
SOT1226-3		- - -				~~19-11-06~~ 19-11-07

Fig. 17. Package outline SOT1226-3 (X2SON5)

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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

Dimensions (mm are the original dimensions)

Unit		A	A$_1$	D	E	b	e	L	v	w	y	y$_1$
mm	max	0.35	0.04	0.65	0.65	0.20		0.23				
	nom	0.32	0.02	0.60	0.60	0.15	0.40	0.18	0.10	0.05	0.05	0.05
	min	0.30	0.00	0.55	0.55	0.10		0.13				

sot1269-2_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1269-2		- - -				~~17-04-07~~ 17-06-30

Fig. 18. Package outline SOT1269-2 (X2SON4)

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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

Dimensions (mm are the original dimensions)

Unit		A[(1)]	A_1	A_3	b	D[(1)]	D_h	E[(1)]	e	e_1	k_1	k_2	L	u	v	w	y	y_1
mm	max	0.50	0.040	0.135 (typ)	0.28	1.10	0.35	0.85	0.75	0.6			0.30	0.05	0.1	0.05	0.05	0.05
	nom	0.47	0.020		0.23		0.30						0.25					
	min	0.44	0.005		0.20		0.27				0.2	0.45	0.22					

Note:
1. Plastic or metal protrusions per side are not included.
2. Side wettable flanks (SWF), protrusion max. 0.02 mm.

sot8065-1_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT8065-1		MO-340				~~24-07-09~~ 24-08-27
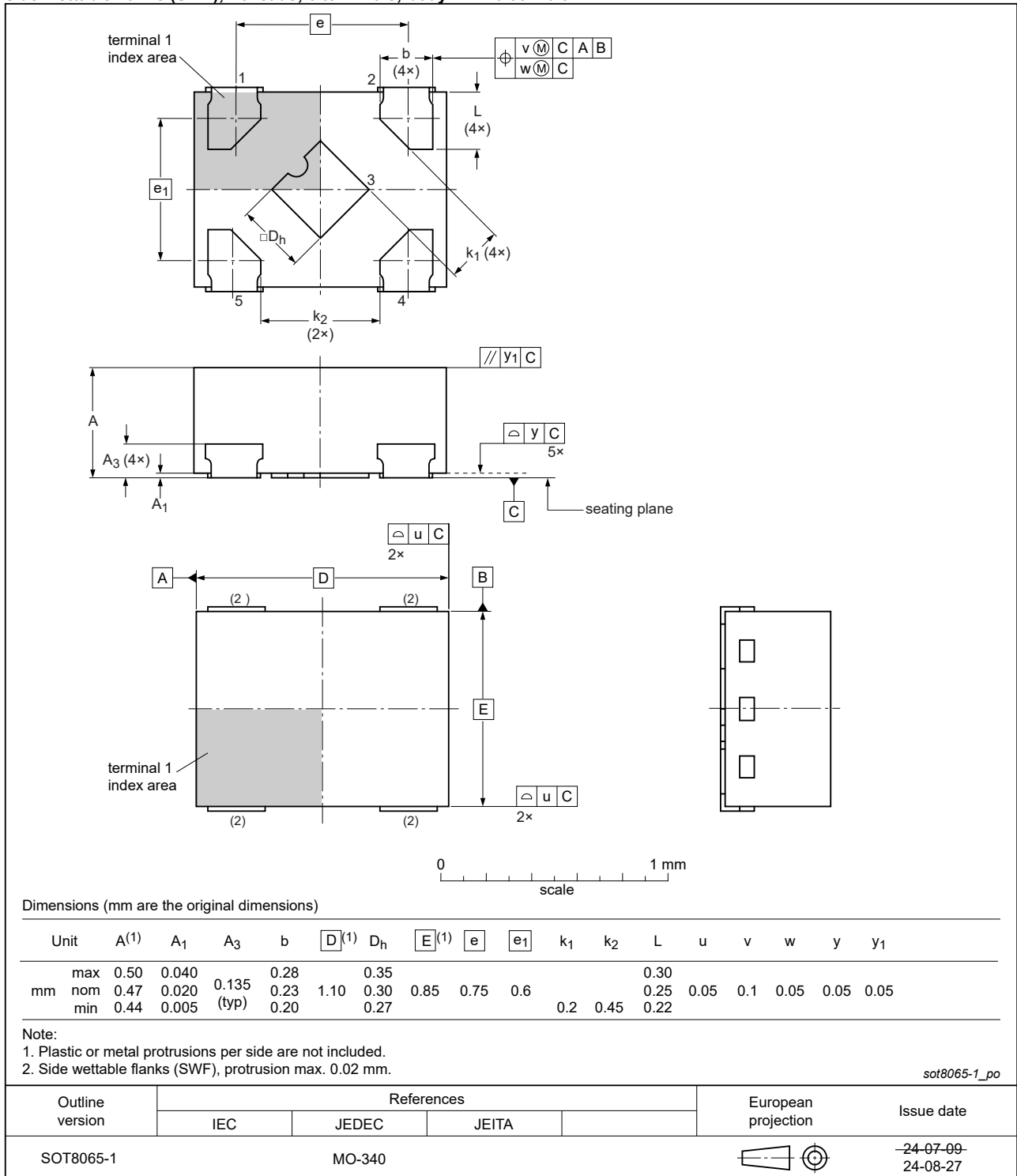
Fig. 19. Package outline SOT8065-1 (XSON5)

15. Abbreviations

Table 12. Abbreviations

Acronym	Description
ANSI	American National Standards Institute
CDM	Charged Device Model
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

16. Revision history

Table 13. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74LVC1G14 v.19.1	20240903	Product data sheet	-	74LVC1G14 v.19
Modifications:	• Fig. 19: Added JEDEC reference MO-340 to SOT8065-1 package outline drawing.			
74LVC1G14 v.19	20240712	Product data sheet	-	74LVC1G14 v.18
Modifications:	• Type number 74LVC1G14GZ (SOT8065-1/XSON5) added.			
74LVC1G14 v.18	20230815	Product data sheet	-	74LVC1G14 v.17
Modifications:	• Section 2: ESD specification updated according to the latest JEDEC standard.			
74LVC1G14 v.17	20220120	Product data sheet	-	74LVC1G14 v.16
Modifications:	• Fig. 12: Package outline drawing SOT353-1 (TSSOP5) has changed.			
74LVC1G14 v.16	20210504	Product data sheet	-	74LVC1G14 v.15
Modifications:	• Section 1 and Section 2 updated. • SOT1226 (X2SON5) package changed to SOT1226-3 (X2SON5) package. • Type number 74LVC1G14GF (SOT891/XSON6) removed. • Table 5: Derating values for P_{tot} total power dissipation updated.			
74LVC1G14 v.15	20180608	Product data sheet	-	74LVC1G14 v.14
Modifications:	• 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. • Added type number 74LVC1G14GX4 (SOT1269-2).			
74LVC1G14 v.14	20161202	Product data sheet	-	74LVC1G14 v.13
Modifications:	• Table 7: The maximum limits for leakage current and supply current have changed.			
74LVC1G14 v.13	20160315	Product data sheet	-	74LVC1G14 v.12
Modifications:	• Fig. 11 added (typical K-factor for relaxation oscillator).			
74LVC1G14 v.12	20120806	Product data sheet	-	74LVC1G14 v.11
Modifications:	• Package outline drawing of SOT1226 modified.			

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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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