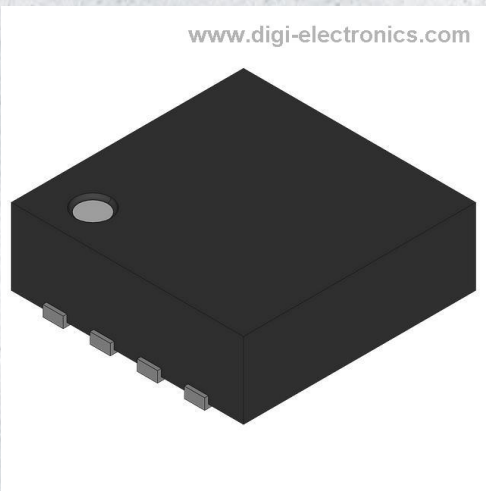
74LVC2G08GM,125 Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	74LVC2G08GM,125-DG
Manufacturer	NXP Semiconductors
Manufacturer Product Number	74LVC2G08GM,125
Description	IC GATE AND
Detailed Description	IC Channel

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
74LVC2G08GM,125	NXP Semiconductors
Series:	Product Status:
74LVC	Active
Base Product Number:	
74LVC2G08	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
Vendor Undefined	REACH Unaffected

74LVC2G08

Dual 2-input AND gate

Rev. 20 — 12 August 2024 Product data sheet

1. General description

The 74LVC2G08 is a dual 2-input AND gate. 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_{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
- 5 V tolerant outputs for interfacing with 5 V logic
- Overvoltage tolerant inputs to 5.5 V
- I_{OFF} circuitry provides partial Power-down mode operation
- High noise immunity
- ±24 mA output drive (V_{CC} = 3.0 V)
- CMOS low power dissipation
- 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)
- Latch-up performance exceeds 250 mA
- Direct interface with TTL levels
- 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
74LVC2G08DP	-40 °C to +125 °C	TSSOP8	plastic thin shrink small outline package; 8 leads; body width 3 mm; lead length 0.5 mm	SOT505-2
74LVC2G08DC	-40 °C to +125 °C	VSSOP8	plastic very thin shrink small outline package; 8 leads; body width 2.3 mm	SOT765-1
74LVC2G08GT	-40 °C to +125 °C	XSON8	plastic extremely thin small outline package; no leads; 8 terminals; body 1 × 1.95 × 0.5 mm	SOT833-1
74LVC2G08GN	-40 °C to +125 °C	XSON8	extremely thin small outline package; no leads; 8 terminals; body 1.2 × 1.0 × 0.35 mm	SOT1116
74LVC2G08GS	-40 °C to +125 °C	XSON8	extremely thin small outline package; no leads; 8 terminals; body 1.35 × 1.0 × 0.35 mm	SOT1203
74LVC2G08GX	-40 °C to +125 °C	X2SON8	plastic thermal enhanced extremely thin small outline package; no leads; 8 terminals; body 1.35 × 0.8 × 0.32 mm	SOT1233-2

4. Marking

Table 2. Marking codes

Type number	Marking code[1]
74LVC2G08DP	V08
74LVC2G08DC	V08
74LVC2G08GT	V08
74LVC2G08GN	VE
74LVC2G08GS	VE
74LVC2G08GX	VE

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

5. Functional diagram

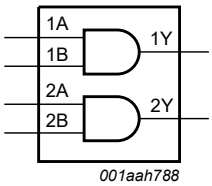


Fig. 1. Logic symbol

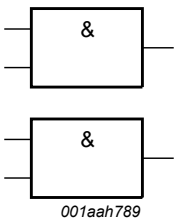


Fig. 2. IEC logic symbol

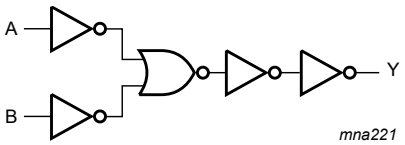
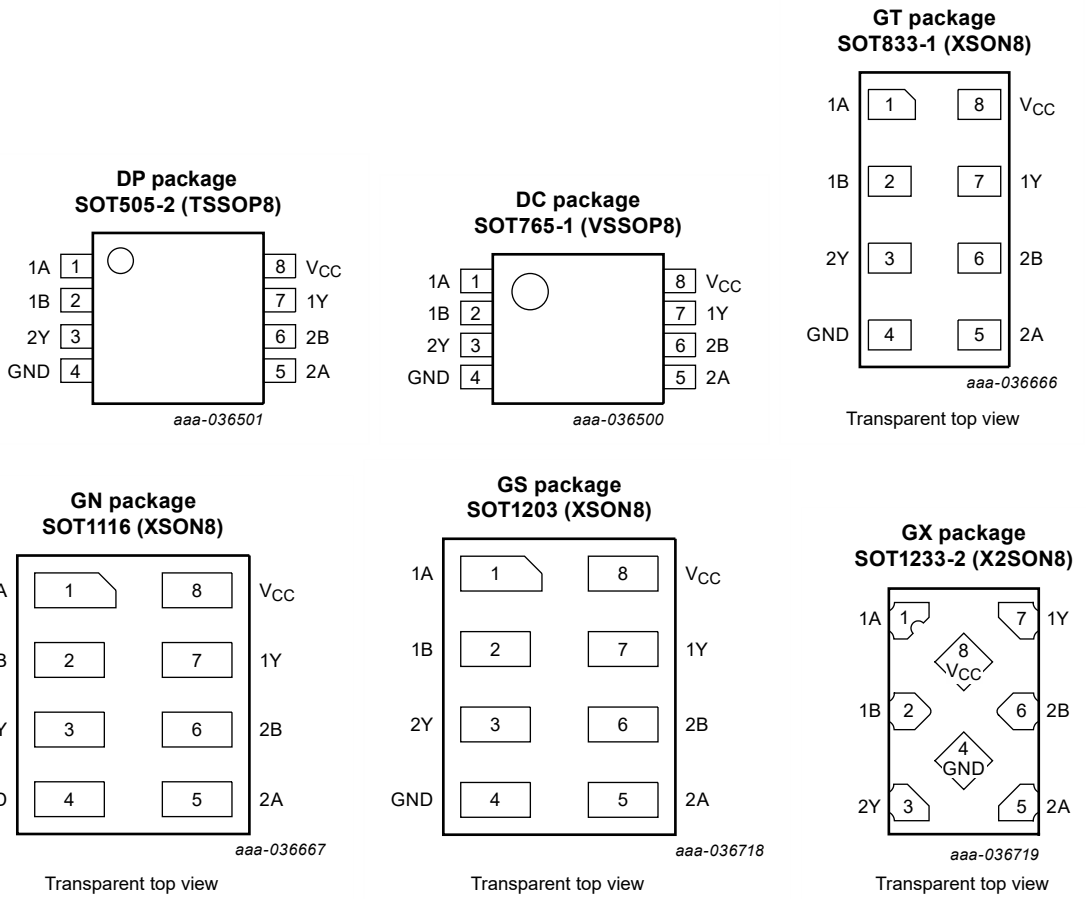


Fig. 3. Logic diagram (one gate)

6. Pinning information

6.1. Pinning



6.2. Pin description

Table 3. Pin description

Symbol	Pin	Description
1A	1	data input
1B	2	data input
2Y	3	data output
GND	4	ground (0 V)
2A	5	data input
2B	6	data input
1Y	7	data output
V_{CC}	8	supply voltage

7. Functional description

Table 4. Function table

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

Input		Output
nA	**nB**	**nY**
L	X	L
X	L	L
H	H	H

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
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 < 0 V or V_O > V_{CC}		-	±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				
		SOT505-2 (TSSOP8) SOT765-1 (VSSOP8) SOT833-1 (XSON8) SOT1116 (XSON8) SOT1203 (XSON8)	[2]	-	250	mW
		SOT1233-2 package	[3]	-	300	mW

[1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.
[2] For SOT505-2 (TSSOP8) package: P_{tot} derates linearly with 4.6 mW/K above 96 °C.
For SOT765-1 (VSSOP8) package: P_{tot} derates linearly with 4.9 mW/K above 99 °C.
For SOT833-1 (XSON8) package: P_{tot} derates linearly with 3.1 mW/K above 68 °C.
For SOT1116 (XSON8) package: P_{tot} derates linearly with 4.2 mW/K above 90 °C.
For SOT1203 (XSON8) package: P_{tot} derates linearly with 3.6 mW/K above 81 °C.
[3] For SOT1233-2 (X2SON8) package: P_{tot} derates linearly with 7.7 mW/K above 118 °C.

9. Recommended operating conditions

Table 6. Operating conditions

Symbol	Parameter	Conditions	Min	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
Δt/ΔV	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
T_{amb} = -40 °C to +85 °C						
V_{IH}	HIGH-level input voltage	V_{CC} = 1.65 V to 1.95 V	0.65 × 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 × V_{CC}	-	-	V
V_{IL}	LOW-level input voltage	V_{CC} = 1.65 V to 1.95 V	-	-	0.35 × 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 × V_{CC}	V
V_{OH}	HIGH-level output voltage	V_I = V_{IH} or V_{IL}				
		I_O = -100 µA; 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	1.53	-	V
		I_O = -8 mA; V_{CC} = 2.3 V	1.9	2.13	-	V
		I_O = -12 mA; V_{CC} = 2.7 V	2.2	2.50	-	V
		I_O = -24 mA; V_{CC} = 3.0 V	2.3	2.60	-	V
		I_O = -32 mA; V_{CC} = 4.5 V	3.8	4.10	-	V
V_{OL}	LOW-level output voltage	V_I = V_{IH} or V_{IL}				
		I_O = 100 µA; V_{CC} = 1.65 V to 5.5 V	-	-	0.1	V
		I_O = 4 mA; V_{CC} = 1.65 V	-	0.08	0.45	V
		I_O = 8 mA; V_{CC} = 2.3 V	-	0.14	0.3	V
		I_O = 12 mA; V_{CC} = 2.7 V	-	0.19	0.4	V
		I_O = 24 mA; V_{CC} = 3.0 V	-	0.37	0.55	V
		I_O = 32 mA; V_{CC} = 4.5 V	-	0.43	0.55	V

Symbol	Parameter	Conditions	Min	Typ[1]	Max	Unit
I_I	input leakage current	V_I = 5.5 V or GND; V_{CC} = 0 V to 5.5 V	-	±0.1	±1	µA
I_{OFF}	power-off leakage current	V_I or V_O = 5.5 V; V_{CC} = 0 V	-	±0.1	±2	µA
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	µA
ΔI_{CC}	additional supply current	per pin; V_I = V_{CC} - 0.6 V; I_O = 0 A; V_{CC} = 2.3 V to 5.5 V	-	5	500	µA
C_i	input capacitance		-	2.5	-	pF
T_{amb} = -40 °C to +125 °C						
V_{IH}	HIGH-level input voltage	V_{CC} = 1.65 V to 1.95 V	0.65 × 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 × V_{CC}	-	-	V
V_{IL}	LOW-level input voltage	V_{CC} = 1.65 V to 1.95 V	-	-	0.35 × 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 × V_{CC}	V
V_{OH}	HIGH-level output voltage	V_I = V_{IH} or V_{IL}				
		I_O = -100 µA; V_{CC} = 1.65 V to 5.5 V	V_{CC} - 0.1	-	-	V
		I_O = -4 mA; V_{CC} = 1.65 V	0.95	-	-	V
		I_O = -8 mA; V_{CC} = 2.3 V	1.7	-	-	V
		I_O = -12 mA; V_{CC} = 2.7 V	1.9	-	-	V
		I_O = -24 mA; V_{CC} = 3.0 V	2.0	-	-	V
		I_O = -32 mA; V_{CC} = 4.5 V	3.4	-	-	V
V_{OL}	LOW-level output voltage	V_I = V_{IH} or V_{IL}				
		I_O = 100 µA; V_{CC} = 1.65 V to 5.5 V	-	-	0.1	V
		I_O = 4 mA; V_{CC} = 1.65 V	-	-	0.70	V
		I_O = 8 mA; V_{CC} = 2.3 V	-	-	0.45	V
		I_O = 12 mA; V_{CC} = 2.7 V	-	-	0.60	V
		I_O = 24 mA; V_{CC} = 3.0 V	-	-	0.80	V
		I_O = 32 mA; V_{CC} = 4.5 V	-	-	0.80	V
I_I	input leakage current	V_I = 5.5 V or GND; V_{CC} = 0 V to 5.5 V	-	-	±1	µA
I_{OFF}	power-off leakage current	V_I or V_O = 5.5 V; V_{CC} = 0 V	-	-	±2	µA
I_{CC}	supply current	V_I = 5.5 V or GND; V_{CC} = 1.65 V to 5.5 V; I_O = 0 A	-	-	4	µA
ΔI_{CC}	additional supply current	per pin; V_I = V_{CC} - 0.6 V; I_O = 0 A; V_{CC} = 2.3 V to 5.5 V	-	-	500	µA

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

11. Dynamic characteristics

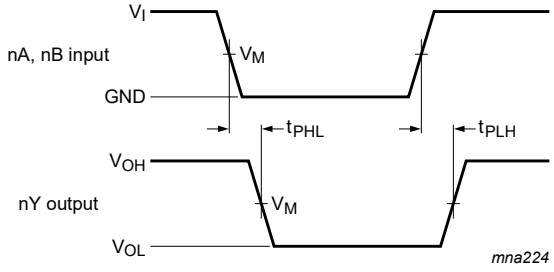
Table 8. Dynamic characteristics

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_{pd}	propagation delay	nA, nB to nY; see Fig. 4 [2]						
		V_{CC} = 1.65 V to 1.95 V	1.0	3.2	9.0	1.0	11.3	ns
		V_{CC} = 2.3 V to 2.7 V	0.5	2.2	5.1	0.5	6.4	ns
		V_{CC} = 2.7 V	1.0	2.5	5.3	1.0	6.7	ns
		V_{CC} = 3.0 V to 3.6 V	0.5	2.1	4.7	0.5	5.9	ns
		V_{CC} = 4.5 V to 5.5 V	0.5	1.7	3.8	0.5	4.8	ns
C_{PD}	power dissipation capacitance	per gate; V_I = GND to V_{CC} [3]	-	14.4	-	-	-	pF

[1] Typical values are measured at nominal V_{CC} and at T_{amb} = 25 °C.
[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).
$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \sum(C_L \times V_{CC}^2 \times f_o)$ 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;
N = number of inputs switching;
$\sum(C_L \times V_{CC}^2 \times f_o)$ = sum of outputs.

11.1. Waveforms and test circuit

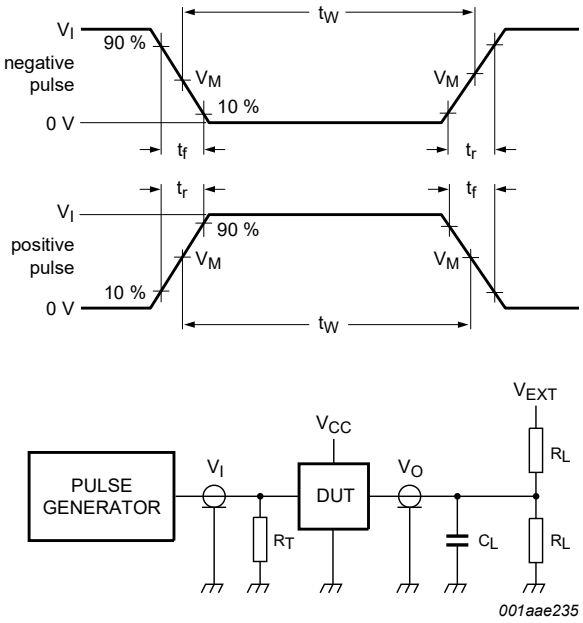


Measurement points are given in Table 9.
V_{OL} and V_{OH} are typical output voltage levels that occur with the output load.

Fig. 4. Input (nA, nB) to output (nY) 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 output impedance Z_o of the pulse generator;

V_{EXT} = Test voltage for switching times.

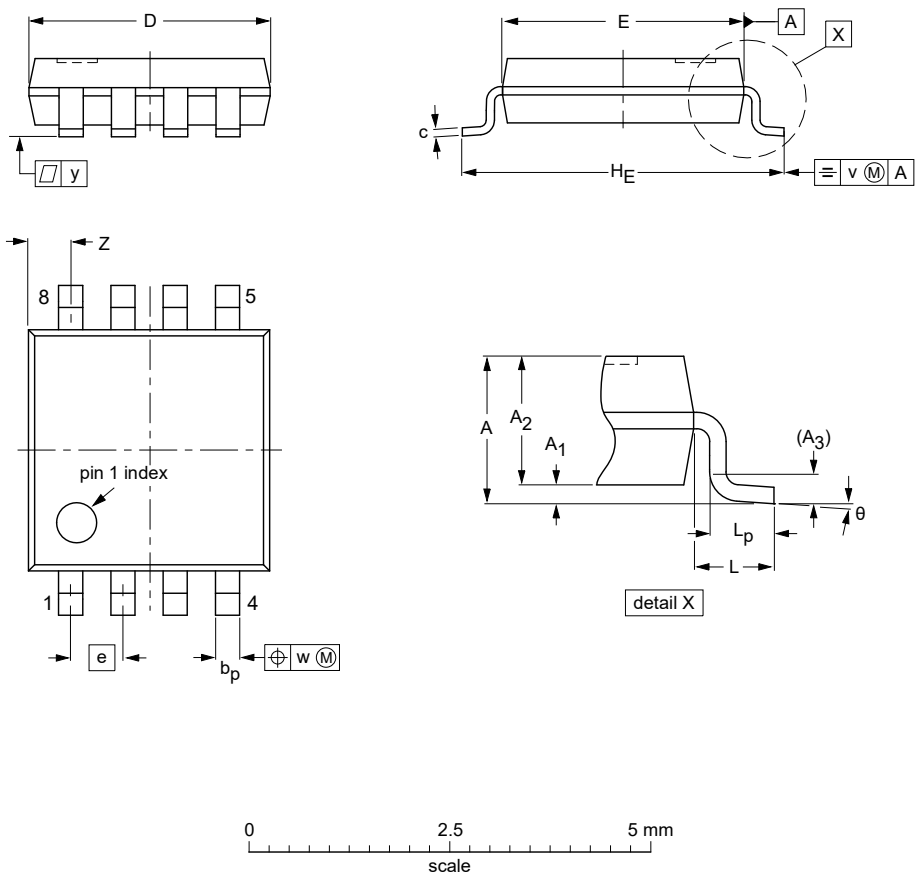
Fig. 5. Test circuit for measuring switching times

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}	≤ 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

12. Package outline

TSSOP8: plastic thin shrink small outline package; 8 leads; body width 3 mm; lead length 0.5 mm SOT505-2



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A_1	A_2	A_3	b_p	c	D(1)	E(1)	e	H_E	L	L_p	v	w	y	Z(1)	θ
mm	1.1	0.15 0.00	0.95 0.75	0.25	0.38 0.22	0.18 0.08	3.1 2.9	3.1 2.9	0.65	4.1 3.9	0.5	0.47 0.33	0.2	0.13	0.1	0.70 0.35	8° 0°

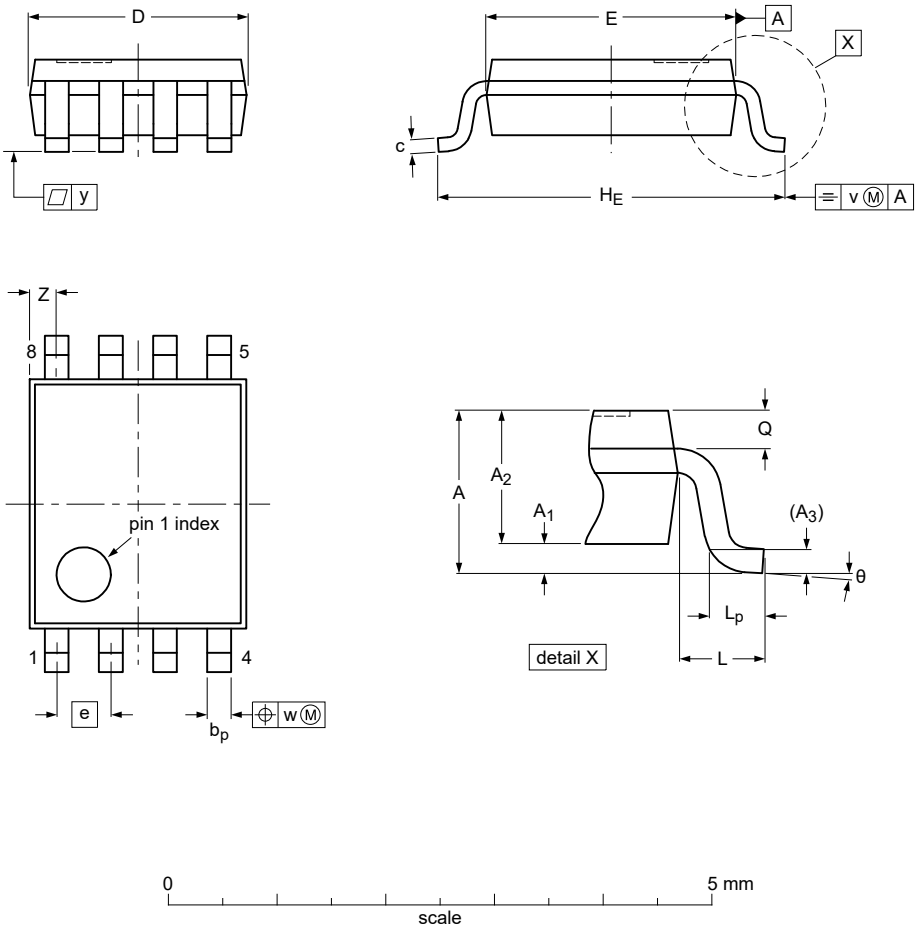
Note

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

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT505-2		- - -				02-01-16

Fig. 6. Package outline SOT505-2 (TSSOP8)

VSSOP8: plastic very thin shrink small outline package; 8 leads; body width 2.3 mm **SOT765-1**



Dimensions (mm are the original dimensions)

Unit		A max.	A_1	A_2	A_3	b_p	c	$D^{(1)}$	$E^{(2)}$	e	H_E	L	L_p	Q	v	w	y	$Z^{(1)}$	θ
mm	max	1	0.15	0.85	0.12	0.27	0.23	2.1	2.4	0.5	3.2	0.4	0.40	0.21	0.2	0.08	0.1	0.4	8°
	nom																		
	min		0.00	0.60		0.17	0.08	1.9	2.2		3.0		0.15	0.19				0.1	0°

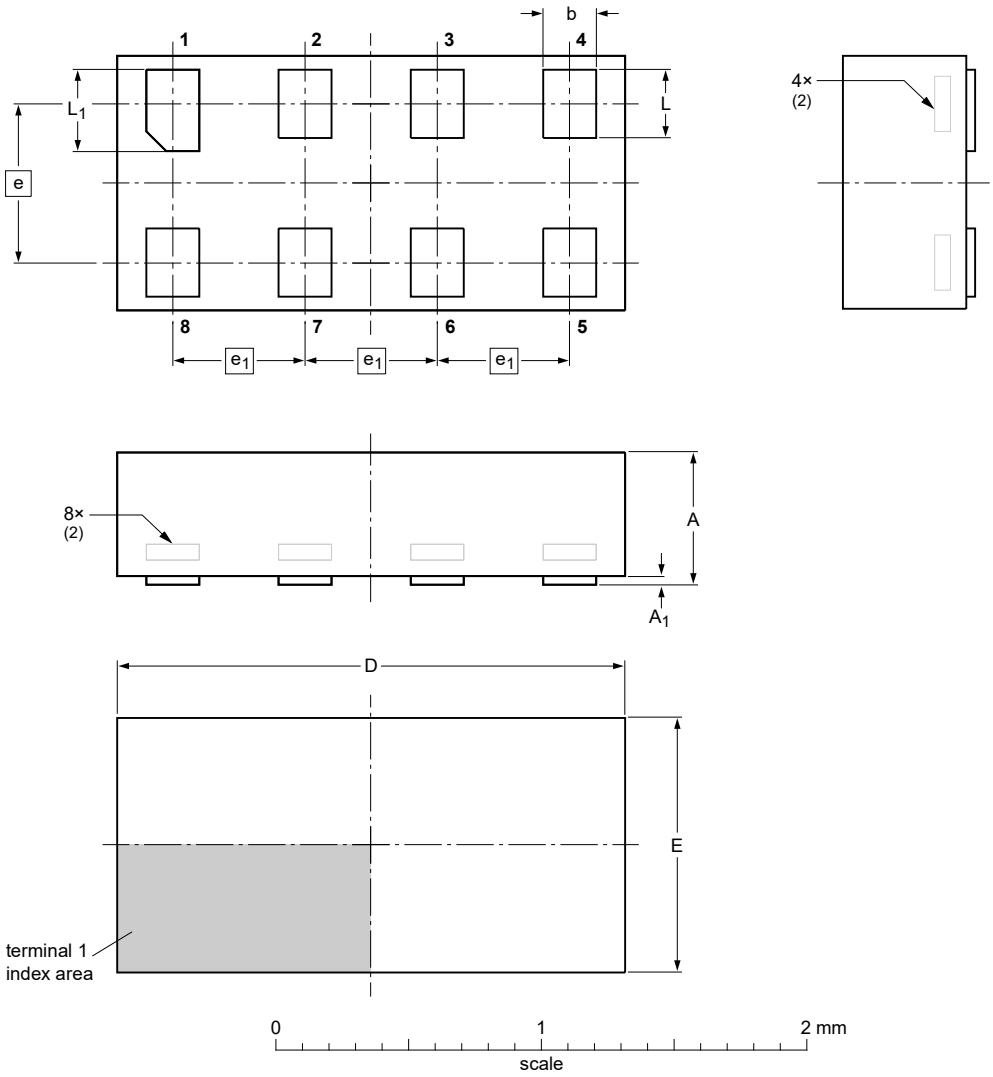
Note
1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.
2. Plastic or metal protrusions of 0.25 mm maximum per side are not included.

sot765-1_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT765-1		MO-187				~~07-06-02~~ 16-05-31

Fig. 7. Package outline SOT765-1 (VSSOP8)

XSON8: plastic extremely thin small outline package; no leads; 8 terminals; body 1 x 1.95 x 0.5 mm **SOT833-1**



DIMENSIONS (mm are the original dimensions)

UNIT	A(1) max	A_1 max	b	D	E	e	e_1	L	L_1
mm	0.5	0.04	0.25 0.17	2.0 1.9	1.05 0.95	0.6	0.5	0.35 0.27	0.40 0.32

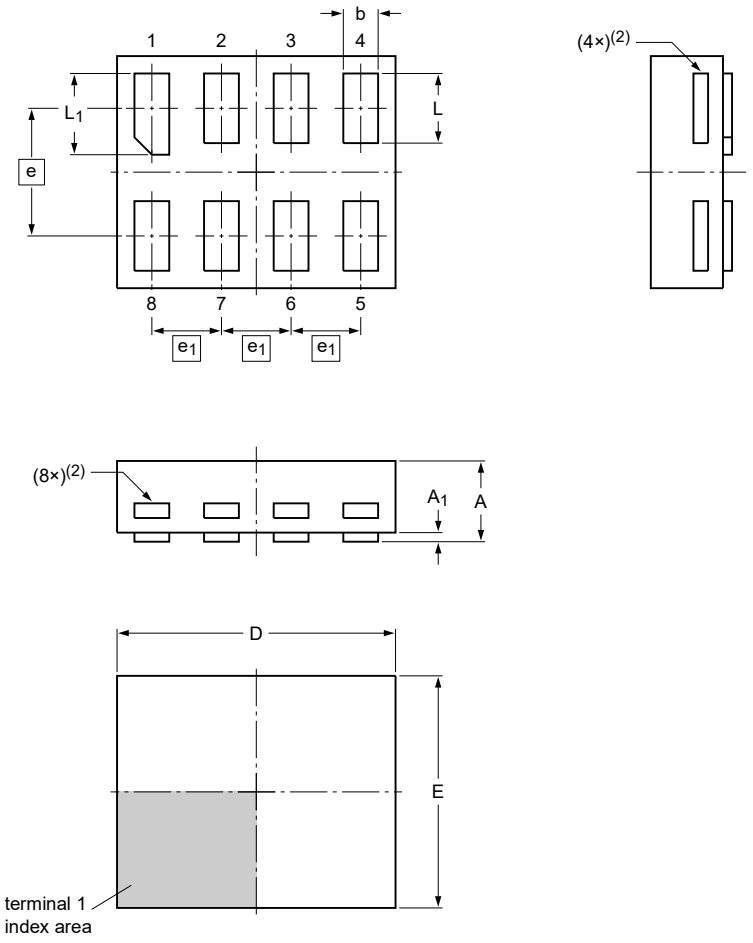
Notes

1. Including plating thickness.
2. Can be visible in some manufacturing processes.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT833-1	- - -	MO-252	- - -			~~07-11-14~~ 07-12-07

Fig. 8. Package outline SOT833-1 (XSON8)

XSON8: extremely thin small outline package; no leads;
8 terminals; body 1.2 x 1.0 x 0.35 mm **SOT1116**



Dimensions

Unit		$A^{(1)}$	A_1	b	D	E	e	e_1	L	L_1
mm	max	0.35	0.04	0.20	1.25	1.05			0.35	0.40
	nom			0.15	1.20	1.00	0.55	0.3	0.30	0.35
	min			0.12	1.15	0.95			0.27	0.32

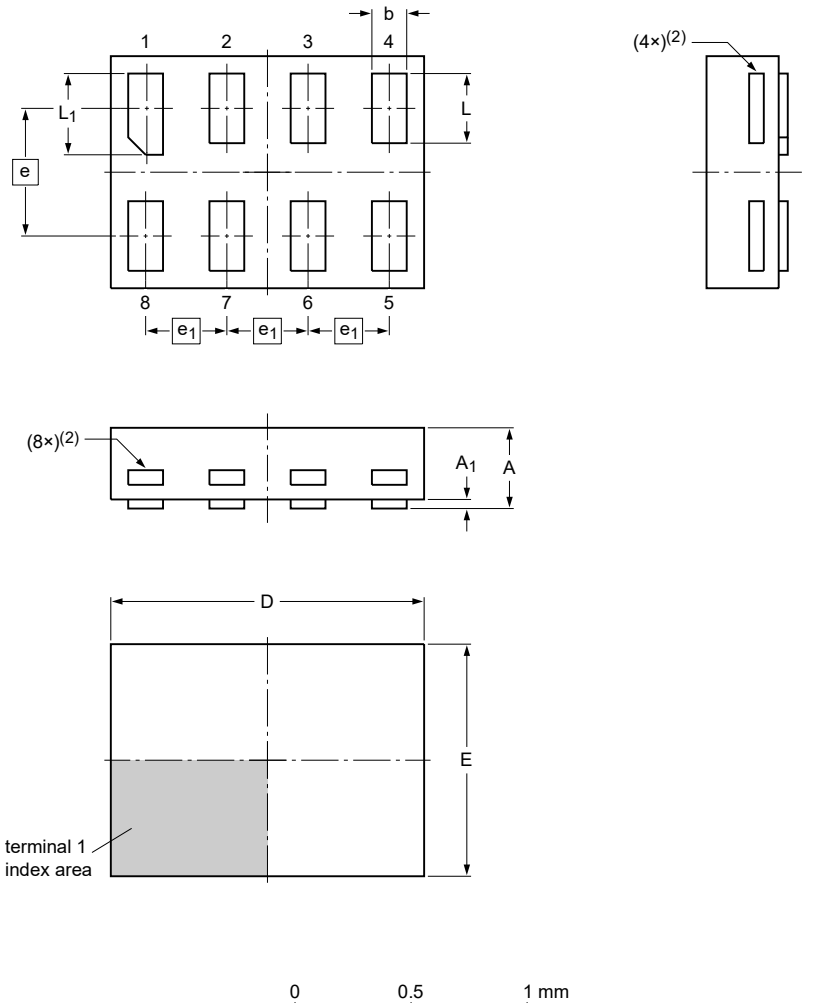
Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

sot1116_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1116						~~10-04-02~~ 10-04-07

Fig. 9. Package outline SOT1116 (XSON8)

XSON8: extremely thin small outline package; no leads;
8 terminals; body 1.35 x 1.0 x 0.35 mm **SOT1203**



Dimensions

Unit		A(1)	A1	b	D	E	e	e1	L	L1
mm	max	0.35	0.04	0.20	1.40	1.05			0.35	0.40
	nom			0.15	1.35	1.00	0.55	0.35	0.30	0.35
	min			0.12	1.30	0.95			0.27	0.32

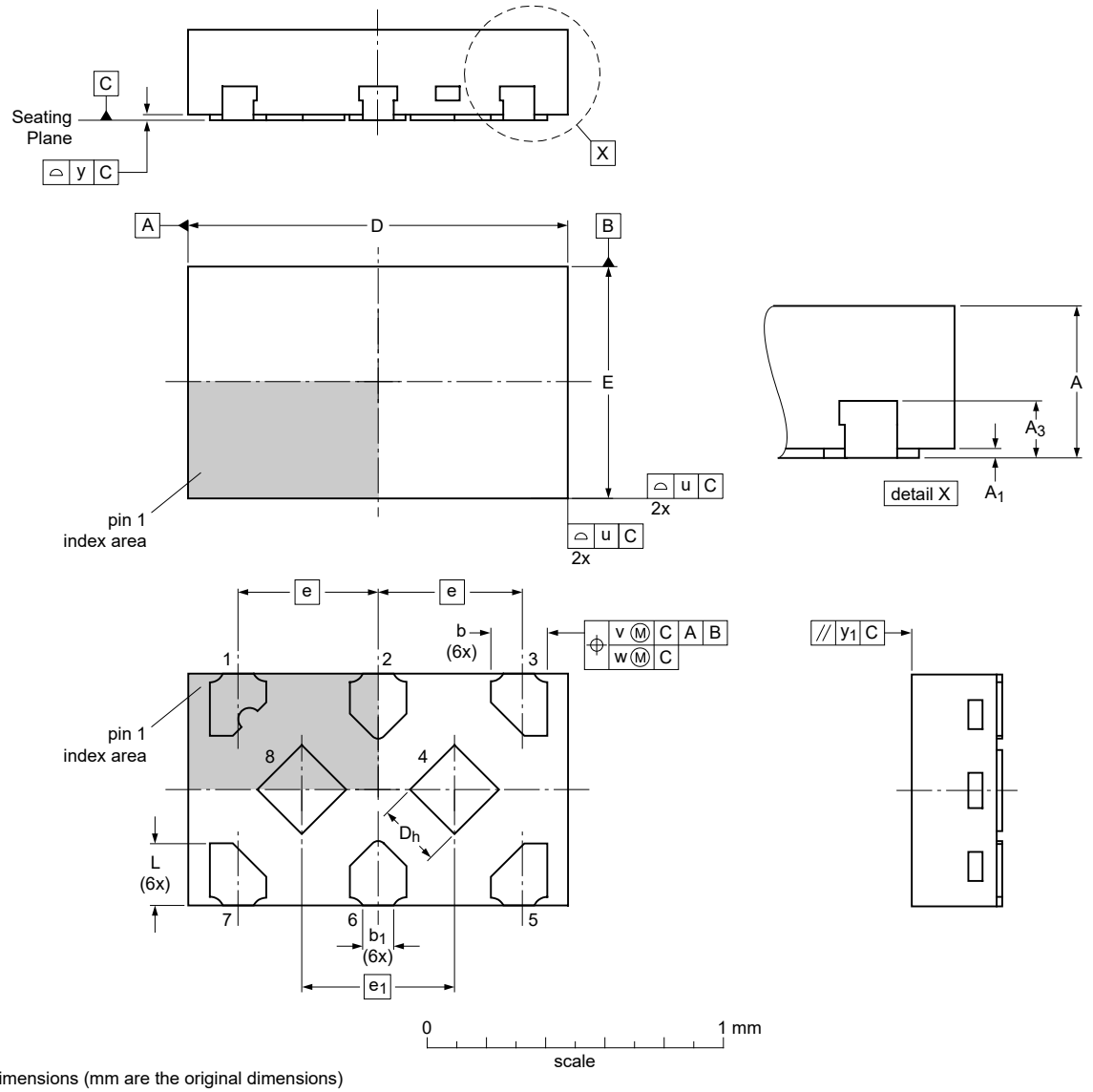
Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

sot1203_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1203						~~10-04-02~~ 10-04-06

Fig. 10. Package outline SOT1203 (XSON8)

X2SON8: plastic thermal enhanced extremely thin small outline package; no leads; 8 terminals; body 1.35 x 0.8 x 0.32 mm **SOT1233-2**



Dimensions (mm are the original dimensions)

Unit		A	A_1	A_3	b	b_1	D	D_h	E	e	e_1	L	u	v	w	y	y_1
mm	max	0.35	0.04	0.10 (Typ.)	0.25	0.11 (ref)	1.35	0.27	0.80	0.50	0.54	0.27	0.05	0.10	0.05	0.05	0.05
	nom	0.32	0.02		0.20			0.22				0.22					
	min	0.30	0.00		0.15			0.17				0.17					

sot1233-2_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1233-2		---				19-11-12

Fig. 11. Package outline SOT1233-2 (X2SON8)

13. Abbreviations

Table 11. 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

14. Revision history

Table 12. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74LVC2G08 v.20	20240812	Product data sheet	-	74LVC2G08 v.19
Modifications:	• Type number 74LVC2G08GF (SOT1089/XSON8) removed.			
74LVC2G08 v.19	20230816	Product data sheet	-	74LVC2G08 v.18
Modifications:	• Section 2: ESD specification updated according to the latest JEDEC standard.			
74LVC2G08 v.18	20230123	Product data sheet	-	74LVC2G08 v.17
Modifications:	• Type number 74LVC2G08GM (SOT902-2/XQFN8) removed.			
74LVC2G08 v.17	20220620	Product data sheet	-	74LVC2G08 v.16
Modifications:	• SOT1233 (X2SON8) package changed to SOT1233-2 (X2SON8) package. • Section 1 and Section 2 updated.			
74LVC2G08 v.16	20190729	Product data sheet	-	74LVC2G08 v.15
Modifications:	• Type number 74LVC2G08GD (SOT996-2/XSON8) removed. • Table 5: P_{tot} total power dissipation and derating values updated.			
74LVC2G08 v.15	20170703	Product data sheet	-	74LVC2G08 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. • Fig. 11: Package outline drawing for SOT1233 has changed.			
74LVC2G08 v.14	20161214	Product data sheet	-	74LVC2G08 v.13
Modifications:	• Table 7: The maximum limits for leakage current and supply current have changed.			
74LVC2G08 v.13	20161028	Product data sheet	-	74LVC2G08 v.12
Modifications:	• Added type number 74LVC2G08GX (SOT1233/X2SON8)			
74LVC2G08 v.12	20130402	Product data sheet	-	74LVC2G08 v.11
Modifications:	• For type number 74LVC2G08GD XSON8U has changed to XSON8.			
74LVC2G08 v.11	20120622	Product data sheet	-	74LVC2G08 v.10
Modifications:	• For type number 74LVC2G08GM the SOT code has changed to SOT902-2.			
74LVC2G08 v.10	20111201	Product data sheet	-	74LVC2G08 v.9

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.

[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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