Dual Buffer/Line Driver; 3-state

CJ74LVC2G126 Logic

1 Introduction

The CJ74LVC2G126 is a dual non-inverting buffer/line driver with 3-state outputs. Each 3-state output is controlled by an output enable input (pin nOE). A LOW-level at pin nOE causes the output to assume a high-impedance OFF-state.

Inputs can be driven from either 3.3V or 5V devices. This feature allows the use of the CJ74LVC2G126 as a translator in a mixed 3.3V and 5V environment.

2 Available Packages

PART NUMBER	PACKAGE
CJ74LVC2G126	TSSOP8(3x3)
	VSSOP8

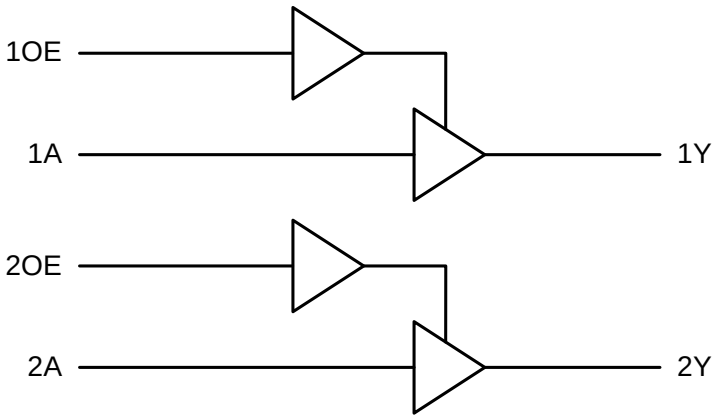
Note: For all available packages, please refer to the part Orderable Information.

3 Features

- Wide supply voltage range from 1.65V to 5.5V
- 5V tolerant input/output for interfacing with 5V logic
- ±24mA output drive (V_{CC}=3.0V)
- CMOS low power consumption
- Specified from -40°C to +125°C

4 Applications

- Cable Modem Termination Systems
- High-Speed Data Acquisition and Generation
- Military: Radars and Sonars
- Motor Controls: High-Voltage
- Power Line Communication Modems
- SSDs: Internal or External
- Video Broadcasting and Infrastructure: Scalable
- Platforms
- Video Broadcasting: IP-Based Multi-Format
- Transcoders
- Video Communication Systems



Simplified schematic

5 Orderable Information

DEVICE	PACKAGE	OP TEMP	ECO PLAN	MSL	PACKING OPTION	SORT
CJ74LVC2G126BAN	TSSOP8(3x3)	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 3000 Units/Reel	Active
CJ74LVC2G126VAN	VSSOP8	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 3000 Units/Reel	Active

Note:

ECO PLAN: For the RoHS and Green certification standards of this product, please refer to the official report provided by JSCJ.

MSL: Moisture Sensitivity Level. Determined according to JEDEC industry standard classification.

SORT: Specifically defined as follows:
Active: Recommended for new products;
Customized: Products manufactured to meet the specific needs of customers;
Preview: The device has been released and has not been fully mass produced. The sample may or may not be available;
NoRD: It is not recommended to use the device for new design. The device is only produced for the needs of existing customers;
Obsolete: The device has been discontinued.

6 Pin Configuration and Marking Information

6.1 Pin Configuration

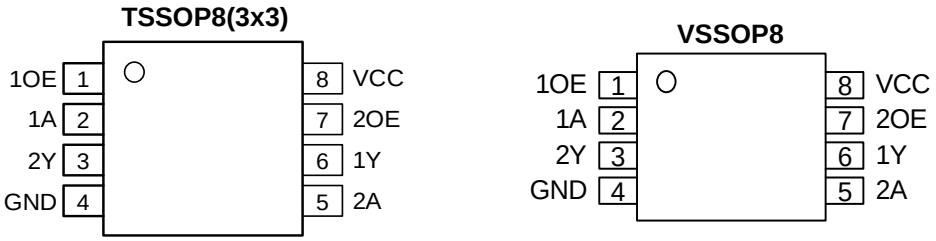


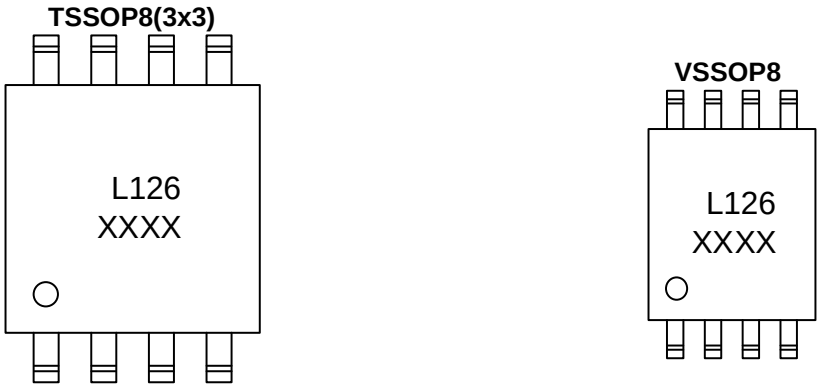
Figure 6-1 Pin configuration

6.2 Pin Function

PIN		I/O(1)	DESCRIPTION
No.	NAME		
1	1OE	I	Output enable input (active HIGH)
2	1A	I	Data input
3	2Y	O	Data output
4	GND	G	Ground (0V)
5	2A	I	Data input
6	1Y	O	Data output
7	2OE	I	Output enable input (active HIGH)
8	VCC	P	Supply voltage

(1) I-Input, O-Output, P-Power, G-Ground

6.3 Marking Information



XXXX: Code, indicates weekly record information.

7 Specifications

7.1 Absolute Maximum Ratings

Voltages are referenced to GND(ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CC}	Supply voltage	-	-0.5	+6.5	V
I_{IK}	Input clamping current	V_I < 0V	-50	-	mA
V_I	Input voltage	-	-0.5	+6.5	V
I_{OK}	Output clamping current	V_O > V_{CC} or V_O < 0V	-	±50	mA
V_O	Output voltage	Active mode	-0.5	V_{CC}+0.5	V
		Power-down mode	-0.5	+6.5	V
I_O	Output current	V_O=0V 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	-	-	300	mW
T_L	Soldering temperature	10s	-	260	°C

Note: When V_{CC}=0V (Power-down mode), the output voltage can be 5.5V in normal operation.

7.2 Recommended Operating Conditions

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CC}	Supply voltage	-	1.65	-	5.5	V
V_I	Input voltage	-	0	-	5.5	V
V_O	Output voltage	Active mode	0	-	V_{CC}	V
		V_{CC}=0V; Power-down mode	0	-	5.5	V
T_{amb}	Ambient temperature	-	-40	-	+125	°C

7.3 Electrical Characteristics

7.3.1 DC Characteristics 1

T_{amb}=-40°C to +85°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
V_{IH}	HIGH-level input voltage	V_{CC}=1.65V to 1.95V		0.65xV_{CC}	-	-	V
		V_{CC}=2.3V to 2.7V		1.7	-	-	V
		V_{CC}=2.7V to 3.6V		2.0	-	-	V
		V_{CC}=4.5V to 5.5V		0.7xV_{CC}	-	-	V
V_{IL}	LOW-level input voltage	V_{CC}=1.65V to 1.95V		-	-	0.35xV_{CC}	V
		V_{CC}=2.3V to 2.7V		-	-	0.7	V
		V_{CC}=2.7V to 3.6V		-	-	0.8	V
		V_{CC}=4.5V to 5.5V		-	-	0.3xV_{CC}	V
V_{OH}	HIGH-level output voltage	V_I = V_{IH} or V_{IL}	I_O=-100uA; V_{CC}=1.65V to 5.5V	V_{CC}-0.1	-	-	V
			I_O=-4mA;V_{CC}=1.65V	1.2	-	-	V
			I_O=-8mA; V_{CC}=2.3V	1.9	-	-	V
			I_O=-12mA;V_{CC}=2.7V	2.2	-	-	V
			I_O=-24mA;V_{CC}=3.0V	2.3	-	-	V
			I_O=-32mA;V_{CC}=4.5V	3.8	-	-	V
V_{OL}	LOW-level output voltage	V_I = V_{IH} or V_{IL}	I_O=100uA; V_{CC}=1.65V to 5.5V	-	-	0.10	V
			I_O=4mA; V_{CC}=1.65V	-	-	0.45	V
			I_O=8mA; V_{CC}=2.3V	-	-	0.30	V
			I_O=12mA; V_{CC}=2.7V	-	-	0.40	V
			I_O=24mA; V_{CC}=3.0V	-	-	0.55	V
			I_O=32mA; V_{CC}=4.5V	-	-	0.55	V
I_I	Input leakage current	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	±1	uA
I_{OZ}	OFF-state output current	V_I=V_{IH} or V_{IL}; V_O=5.5V or GND; V_{CC}=3.6V		-	-	±2	uA
I_{OFF}	Power-off leakage current	V_I or V_O=5.5V; V_{CC}=0V		-	-	±2	uA
I_{CC}	Supply current	V_I=5.5V or GND; V_{CC}=1.65V to 5.5V; I_O=0A		-	-	4	uA
ΔI_{CC}	Additional supply current	Per pin; V_I=V_{CC}-0.6V; I_O=0A; V_{CC}=2.3V to 5.5V		-	-	500	uA
C_I	Input capacitance	-		-	2	-	pF

Note: All typical values are measured at V_{CC}=3.3V and T_{amb}=25°C.

7.3.2 DC Characteristics 2

T_{amb}=-40°C to +125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
V_{IH}	HIGH-level input voltage	V_{CC}=1.65V to 1.95V		0.65xV_{CC}	-	-	V
		V_{CC}=2.3V to 2.7V		1.7	-	-	V
		V_{CC}=2.7V to 3.6V		2.0	-	-	V
		V_{CC}=4.5V to 5.5V		0.7xV_{CC}	-	-	V
V_{IL}	LOW-level input voltage	V_{CC}=1.65V to 1.95V		-	-	0.35xV_{CC}	V
		V_{CC}=2.3V to 2.7V		-	-	0.7	V
		V_{CC}=2.7V to 3.6V		-	-	0.8	V
		V_{CC}=4.5V to 5.5V		-	-	0.3xV_{CC}	V
V_{OH}	HIGH-level output voltage	V_I = V_{IH} or V_{IL}	I_O=-100uA; V_{CC}=1.65V to 5.5V	V_{CC}-0.1	-	-	V
			I_O=-4mA;V_{CC}=1.65V	0.95	-	-	V
			I_O=-8mA; V_{CC}=2.3V	1.7	-	-	V
			I_O=-12mA;V_{CC}=2.7V	1.9	-	-	V
			I_O=-24mA;V_{CC}=3.0V	2.0	-	-	V
			I_O=-32mA;V_{CC}=4.5V	3.4	-	-	V
V_{OL}	LOW-level output voltage	V_I = V_{IH} or V_{IL}	I_O=100uA; V_{CC}=1.65V to 5.5V	-	-	0.10	V
			I_O=4mA; V_{CC}=1.65V	-	-	0.70	V
			I_O=8mA; V_{CC}=2.3V	-	-	0.45	V
			I_O=12mA; V_{CC}=2.7V	-	-	0.60	V
			I_O=24mA; V_{CC}=3.0V	-	-	0.80	V
			I_O=32mA; V_{CC}=4.5V	-	-	0.80	V
I_I	Input leakage current	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	±1	uA
I_{OZ}	OFF-state output current	V_I=V_{IH} or V_{IL}; V_O=5.5V or GND; V_{CC}=3.6V		-	-	±2	uA
I_{OFF}	Power-off leakage current	V_I or V_O=5.5V; V_{CC}=0V		-	-	±2	uA
I_{CC}	Supply current	V_I=5.5V or GND; V_{CC}=1.65V to 5.5V; I_O=0A		-	-	4	uA
ΔI_{CC}	Additional supply current	Per pin; V_I=V_{CC}-0.6V; I_O=0A; V_{CC}=2.3V to 5.5V		-	-	500	uA

7.3.3 AC Characteristics 1

T_{amb}=-40°C to +85°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.(1)	MAX.	UNIT
t_{PLH}, t_{PHL}	nA to nY propagation delay	See Figure 8-4	V_{CC}=1.65V to 1.95V	-	11.7	17.6	ns
			V_{CC}=2.3V to 2.7V	-	7.8	11.7	ns
			V_{CC}=2.7V	-	8.4	12.6	ns
			V_{CC}=3.0V to 3.6V	-	7.2	10.8	ns
			V_{CC}=4.5V to 5.5V	-	5.7	8.6	ns
t_{PZH}, t_{PZL}	nOE to nY enable time	See Figure 8-5	V_{CC}=1.65V to 1.95V	-	12.3	18.5	ns
			V_{CC}=2.3V to 2.7V	-	7.8	11.7	ns
			V_{CC}=2.7V	-	8.4	12.6	ns
			V_{CC}=3.0V to 3.6V	-	7.2	10.8	ns
			V_{CC}=4.5V to 5.5V	-	5.4	8.1	ns
t_{PLZ}, t_{PHZ}	nOE to nY disable time	See Figure 8-5	V_{CC}=1.65V to 1.95V	-	9.9	14.9	ns
			V_{CC}=2.3V to 2.7V	-	5.7	8.6	ns
			V_{CC}=2.7V	-	9	13.5	ns
			V_{CC}=3.0V to 3.6V	-	7.5	11.3	ns
			V_{CC}=4.5V to 5.5V	-	5.4	8.1	ns

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

7.3.4 AC Characteristics 2

T_{amb}=40°C+125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
t_{pd}	nA to nY propagation delay	See Figure 8-4	V_{CC}=1.65V to 1.95V	-	-	22.0	ns
			V_{CC}=2.3V to 2.7V	-	-	15.0	ns
			V_{CC}=2.7V	-	-	15.8	ns
			V_{CC}=3.0V to 3.6V	-	-	13.6	ns
			V_{CC}=4.5V to 5.5V	-	-	10.7	ns
t_{en}	nOE to nY enable time	See Figure 8-5	V_{CC}=1.65V to 1.95V	-	-	23.1	ns
			V_{CC}=2.3V to 2.7V	-	-	14.7	ns
			V_{CC}=2.7V	-	-	15.8	ns
			V_{CC}=3.0V to 3.6V	-	-	13.4	ns
			V_{CC}=4.5V to 5.5V	-	-	10.2	ns
t_{dis}	nOE to nY disable time	See Figure 8-5	V_{CC}=1.65V to 1.95V	-	-	18.2	ns
			V_{CC}=2.3V to 2.7V	-	-	11.3	ns
			V_{CC}=2.7V	-	-	17.4	ns
			V_{CC}=3.0V to 3.6V	-	-	14.6	ns
			V_{CC}=4.5V to 5.5V	-	-	10.8	ns

8 Detailed Description

8.1 Overview

The CJ74LVC2G126 is a dual non-inverting buffer/line driver with 3-state outputs. Each 3-state output is controlled by an output enable input (pin nOE). A LOW-level at pin nOE causes the output to assume a high-impedance OFF-state.

Inputs can be driven from either 3.3V or 5V devices. This feature allows the use of the CJ74LVC2G126 as a translator in a mixed 3.3V and 5V environment.

8.2 Functional Block Diagram

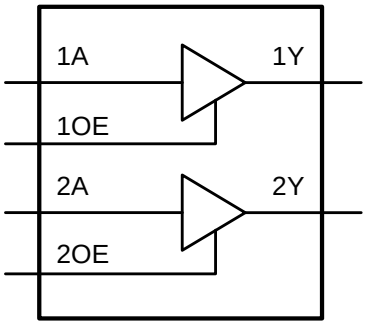


Figure 8-1 Logic symbol

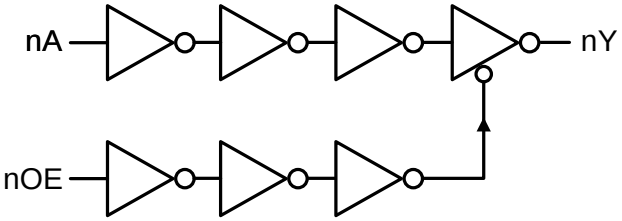


Figure 8-2 Logic diagram (one gate)

8.3 Function Table

INPUT		OUTPUT
nOE	**nA**	**nY**
H	L	L
H	H	H
L	X	Z

Note: H=HIGH voltage level; L=LOW voltage level; X=don't care; Z=high-impedance OFF-state.

8.4 Testing Circuit

8.4.1 AC Testing Circuit

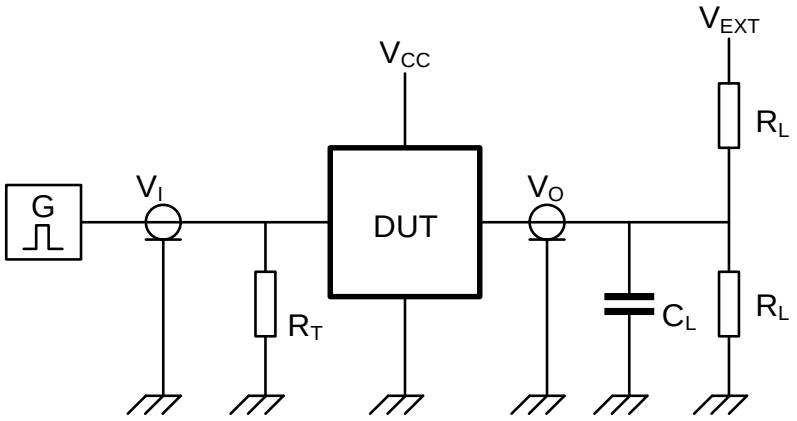


Figure 8-3 Test circuit for measuring switching times

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.

8.4.2 AC Testing Waveforms

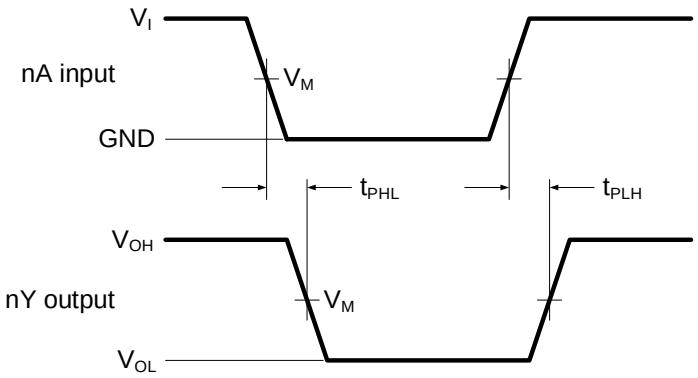


Figure 8-4 The input (nA) to output (nY) propagation delays

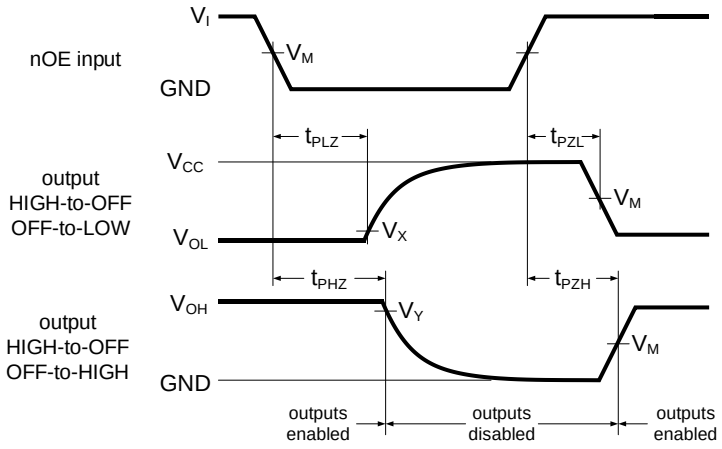


Figure 8-5 3-state enable and disable times

8.4.3 Measurement Points

SUPPLY VOLTAGE	INPUT	OUTPUT		
V_{CC}	V_M	V_M	V_X	V_Y
1.65V to 1.95V	0.5xV_{CC}	0.5xV_{CC}	V_{OL}+0.15V	V_{OH}-0.15V
2.3V to 2.7V	0.5xV_{CC}	0.5xV_{CC}	V_{OL}+0.15V	V_{OH}-0.15V
2.7V	1.5V	1.5V	V_{OL}+0.3V	V_{OH}-0.3V
3.0V to 3.6V	1.5V	1.5V	V_{OL}+0.3V	V_{OH}-0.3V
4.5V to 5.5V	0.5xV_{CC}	0.5xV_{CC}	V_{OL}+0.3V	V_{OH}-0.3V

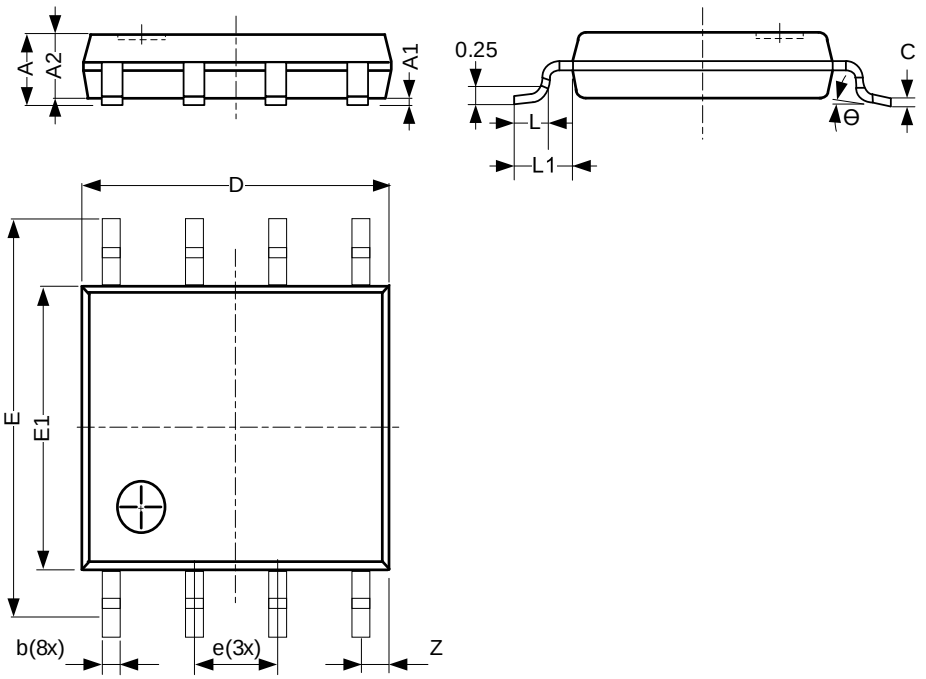
8.4.4 Test Data

SUPPLY VOLTAGE	INPUT		LOAD		V_{EXT}		
V_{CC}	V_I	$t_r = t_f$	C_L	R_L	t_{PLH}, t_{PHL}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}
1.65V to 1.95V	V_{CC}	≤ 3ns	30pF	1kΩ	Open	GND	2xV_{CC}
2.3V to 2.7V	V_{CC}	≤ 3ns	30pF	500Ω	Open	GND	2xV_{CC}
2.7V	2.7V	≤ 3ns	50pF	500Ω	Open	GND	6V
3.0V to 3.6V	2.7V	≤ 3ns	50pF	500Ω	Open	GND	6V
4.5V to 5.5V	V_{CC}	≤ 3ns	50pF	500Ω	Open	GND	2xV_{CC}

9 Mechanical Information

9.1 TSSOP8(3x3) Mechanical Information

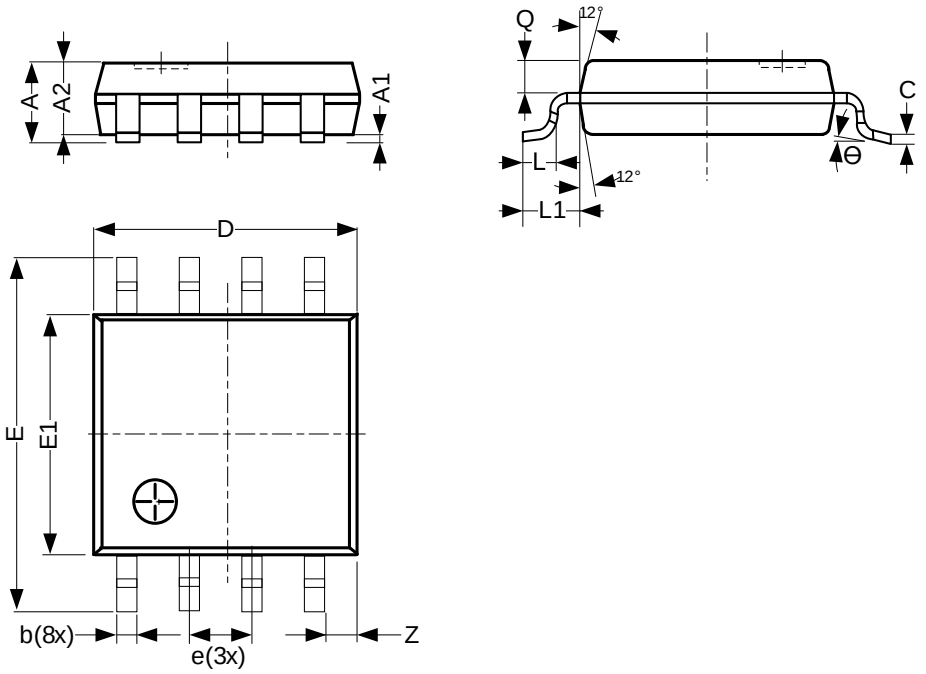
9.1.1 TSSOP8(3x3) Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	-	-	1.10
A1	0	-	0.15
A2	0.75	-	0.95
b	0.22	-	0.38
c	0.08	-	0.18
D	2.90	-	3.10
E	3.90	-	4.10
E1	2.90	-	3.10
e	0.65 BSC		
L	0.33	-	0.47
L1	-	0.50	-
Z	0.35	-	0.70
Θ	0°	-	8°
Unit: mm			

9.2 VSSOP8 Mechanical Information

9.2.1 VSSOP8 Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	-	-	1.00
A1	0	-	0.15
A2	0.60	-	0.85
Q	0.19	-	0.21
b	0.17	-	0.27
c	0.08	-	0.23
D	1.90	-	2.10
E	3.00	-	3.20
E1	2.20	-	2.40
e	0.50 BSC		
L	-	0.40	-
L1	0.15	-	0.40
Z	0.10	-	0.40
Θ	0°	-	8°
Unit: mm			

10 Notes and Revision History

10.1 Associated Product Family and Others

To view other products of the same type or IC products of other types, click the official website of JSCJ -- ***https:www.jscj-elec.com*** for more details.

10.2 Notes

Electrostatic Discharge Caution

This IC may be damaged by ESD. Relevant personnel shall comply with correct installation and use specifications to avoid ESD damage to the IC. If appropriate measures are not taken to prevent ESD damage, the hazards caused by ESD include but are not limited to degradation of integrated circuit performance or complete damage of integrated circuit. For some precision integrated circuits, a very small parameter change may cause the whole device to be inconsistent with its published specifications.

10.3 Revision History

January, 2026: rev -1.1A, Change TSSOP8 marking information.

April, 2026: rev -1.2A, Update package from TSSOP8 to TSSOP8(3x3).

DISCLAIMER

IMPORTANT NOTICE, PLEASE READ CAREFULLY

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Any person who purchases or uses JSCJ products for design shall: 1. Select products suitable for circuit application and design; 2. Design, verify and test the rationality of circuit design; 3. Procedures to ensure that the design complies with relevant laws and regulations and the requirements of such laws and regulations. JSCJ makes no warranty or representation as to the accuracy or completeness of the information contained in this data sheet and assumes no responsibility for the application or use of any of the products described in this data sheet.

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