

## SN74LVC2G126 Dual Bus Buffer Gate With 3-State Outputs

### 1 Features

- Available in the Texas Instruments NanoFree™ Package
- Supports 5-V  $V_{CC}$  Operation
- Inputs Accept Voltages to 5.5 V
- Max  $t_{pd}$  of 4ns at 3.3V
- Low Power Consumption, 10- $\mu$ A Max  $I_{CC}$
- $\pm 24$ -mA Output Drive at 3.3 V
- Typical  $V_{OLP}$  (Output Ground Bounce)  $< 0.8$  V at  $V_{CC} = 3.3$  V,  $T_A = 25^\circ\text{C}$
- Typical  $V_{OHV}$  (Output VOH Undershoot)  $> 2$  V at  $V_{CC} = 3.3$  V,  $T_A = 25^\circ\text{C}$
- $I_{off}$  Supports Live Insertion, Partial-Power-Down Mode, and Back-Drive Protection
- Can Be Used as a Down Translator to Translate Inputs From a Max of 5.5 V Down to the  $V_{CC}$  Level
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II
- ESD Protection Exceeds JESD 22
  - 2000-V Human-Body Model
  - 1000-V Charged-Device Model

### 2 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

### 3 Description

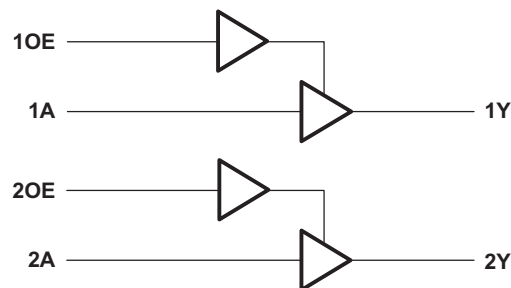
These bus transceivers are designed for 1.65-V to 3.6-V  $V_{CC}$  operation. The SN74LVC2G126 device is a dual line driver with 3-state output. The output is disabled when the output-enable input is low.

#### Device Information<sup>(1)</sup>

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SN74LVC2G126DCT	SM8 (8)	2.95 mm x 2.80 mm
SN74LVC2G126DCU	VSSOP (8)	2.30 mm x 2.00 mm
SN74LVC2G126YZP	DSBGA (8)	1.91 mm x 0.91 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

#### Simplified Schematic



## Table of Contents

<b>1 Features</b> .....	<b>1</b>	8.2 Functional Block Diagram .....	<b>9</b>
<b>2 Applications</b> .....	<b>1</b>	8.3 Feature Description .....	<b>9</b>
<b>3 Description</b> .....	<b>1</b>	8.4 Device Functional Modes .....	<b>9</b>
<b>4 Revision History</b> .....	<b>2</b>	<b>9 Application and Implementation</b> .....	<b>10</b>
<b>5 Pin Configuration and Functions</b> .....	<b>3</b>	9.1 Application Information .....	<b>10</b>
<b>6 Specifications</b> .....	<b>4</b>	9.2 Typical Application .....	<b>10</b>
6.1 Absolute Maximum Ratings .....	<b>4</b>	<b>10 Power Supply Recommendations</b> .....	<b>11</b>
6.2 ESD Ratings .....	<b>4</b>	<b>11 Layout</b> .....	<b>11</b>
6.3 Recommended Operating Conditions .....	<b>5</b>	11.1 Layout Guidelines .....	<b>11</b>
6.4 Thermal Information .....	<b>5</b>	11.2 Layout Example .....	<b>11</b>
6.5 Electrical Characteristics .....	<b>6</b>	<b>12 Device and Documentation Support</b> .....	<b>12</b>
6.6 Switching Characteristics, –40°C to +85°C .....	<b>6</b>	12.1 Receiving Notification of Documentation Updates .....	<b>12</b>
6.7 Switching Characteristics, –40°C to +125°C .....	<b>6</b>	12.2 Community Resources .....	<b>12</b>
6.8 Operating Characteristics .....	<b>7</b>	12.3 Trademarks .....	<b>12</b>
6.9 Typical Characteristics .....	<b>7</b>	12.4 Electrostatic Discharge Caution .....	<b>12</b>
<b>7 Parameter Measurement Information</b> .....	<b>8</b>	12.5 Glossary .....	<b>12</b>
<b>8 Detailed Description</b> .....	<b>9</b>	<b>13 Mechanical, Packaging, and Orderable Information</b> .....	<b>12</b>
8.1 Overview .....	<b>9</b>		

## 4 Revision History

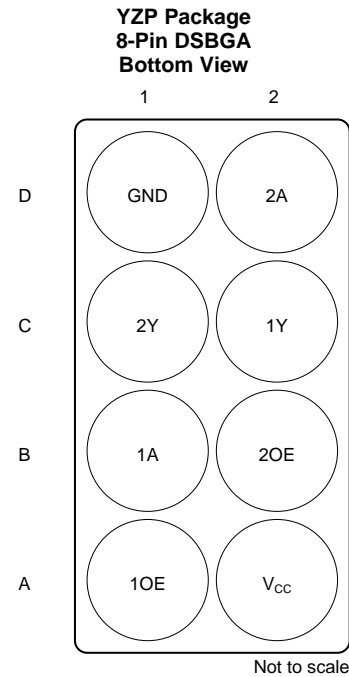
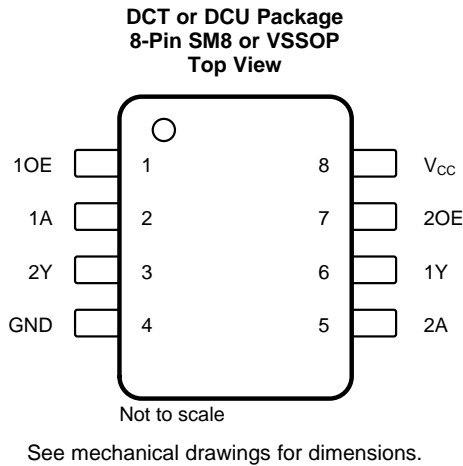
NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

<b>Changes from Revision L (December 2014) to Revision M</b>	<b>Page</b>
• Deleted Machine Model from <i>Features</i> .....	<b>1</b>
• Updated <i>Device Information</i> table .....	<b>1</b>
• Updated pinout images and <i>Pin Functions</i> table .....	<b>3</b>
• Added Operating junction temperature, $T_j$ in <i>Absolute Maximum Ratings</i> .....	<b>4</b>
• Added <i>Receiving Notification of Documentation Updates</i> section and <i>Community Resources</i> section .....	<b>12</b>

<b>Changes from Revision K (November 2013) to Revision L</b>	<b>Page</b>
• Added <i>Applications</i> , <i>Device Information</i> table, <i>ESD Ratings</i> table, <i>Typical Characteristics</i> , <i>Feature Description</i> section, <i>Device Functional Modes</i> , <i>Application and Implementation</i> section, <i>Power Supply Recommendations</i> section, <i>Layout</i> section, <i>Device and Documentation Support</i> section, and <i>Mechanical, Packaging, and Orderable Information</i> section. ....	<b>1</b>
• Updated <i>Features</i> .....	<b>1</b>

<b>Changes from Revision J (January 2007) to Revision K</b>	<b>Page</b>
• Deleted <i>Ordering Information</i> table. ....	<b>1</b>
• Updated operating temperature range .....	<b>5</b>
• Added ESD warning .....	<b>12</b>

## 5 Pin Configuration and Functions



### Pin Functions

NAME	PIN		TYPE	DESCRIPTION
	SM8, VSSOP	DSBGA		
1A	2	B1	I	1A Input
10E	1	A1	I	10E Enable/Input
1Y	6	C2	O	1Y Output
2A	5	D2	I	2A Input
2OE	7	B2	I	2OE Enable/Input
2Y	3	C1	O	2Y Output
GND	4	D1	—	Ground Pin
V <sub>CC</sub>	8	A2	—	Power Pin

## 6 Specifications

### 6.1 Absolute Maximum Ratings

 over operating free-air temperature range (unless otherwise noted)<sup>(1)</sup>

		MIN	MAX	UNIT
V <sub>CC</sub>	Supply voltage	-0.5	6.5	V
V <sub>I</sub>	Input voltage <sup>(2)</sup>	-0.5	6.5	V
V <sub>O</sub>	Voltage range applied to any output in the high-impedance or power-off state <sup>(2)</sup>	-0.5	6.5	V
V <sub>O</sub>	Voltage range applied to any output in the high or low state <sup>(2)(3)</sup>	-0.5	V <sub>CC</sub> + 0.5	V
I <sub>IK</sub>	Input clamp current	V <sub>I</sub> < 0	-50	mA
I <sub>OK</sub>	Output clamp current	V <sub>O</sub> < 0	-50	mA
I <sub>O</sub>	Continuous output current		±50	mA
	Continuous current through V <sub>CC</sub> or GND		±100	mA
T <sub>J</sub>	Operating junction temperature		150	°C
T <sub>stg</sub>	Storage temperature	-65	150	°C

- (1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- (2) The input negative-voltage and output voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
- (3) The value of V<sub>CC</sub> is provided in the *Recommended Operating Conditions* table.

### 6.2 ESD Ratings

		VALUE	UNIT
V <sub>(ESD)</sub>	Electrostatic discharge	Human body model (HBM), per ANSI/ESDA/JEDEC JS-001 <sup>(1)</sup>	2000
		Charged device model (CDM), per JEDEC specification JESD22-C101 <sup>(2)</sup>	1000

- (1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.
- (2) JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

### 6.3 Recommended Operating Conditions

 over operating free-air temperature range (unless otherwise noted)<sup>(1)</sup>

			MIN	MAX	UNIT
V <sub>CC</sub>	Supply voltage	Operating	1.65	5.5	V
		Data retention only	1.5		
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 <sub>CC</sub> = 3 V to 3.6 V	2		
		V <sub>CC</sub> = 4.5 V to 5.5 V	0.7 × V <sub>CC</sub>		
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 <sub>CC</sub> = 3 V to 3.6 V		0.8	
		V <sub>CC</sub> = 4.5 V to 5.5 V		0.3 × V <sub>CC</sub>	
V <sub>I</sub>	Input voltage		0	5.5	V
V <sub>O</sub>	Output voltage	High or low state	0	V <sub>CC</sub>	V
		3-state	0	5.5	
I <sub>OH</sub>	High-level output current	V <sub>CC</sub> = 1.65 V		–4	mA
		V <sub>CC</sub> = 2.3 V		–8	
		V <sub>CC</sub> = 3 V		–16	
				–24	
		V <sub>CC</sub> = 4.5 V		–32	
I <sub>OL</sub>	Low-level output current	V <sub>CC</sub> = 1.65 V		4	mA
		V <sub>CC</sub> = 2.3 V		8	
		V <sub>CC</sub> = 3 V		16	
				24	
		V <sub>CC</sub> = 4.5 V		32	
Δt/Δv	Input transition rise or fall rate	V <sub>CC</sub> = 1.8 V ± 0.15 V, 2.5 V ± 0.2 V		20	ns/V
		V <sub>CC</sub> = 3.3 V ± 0.3 V		10	
		V <sub>CC</sub> = 5 V ± 0.5 V		5	
T <sub>A</sub>	Operating free-air temperature		–40	125	°C

(1) All unused inputs of the device must be held at V<sub>CC</sub> or GND to ensure proper device operation. See *Implications of Slow or Floating CMOS Inputs*, SCBA004.

### 6.4 Thermal Information

THERMAL METRIC <sup>(1)</sup>	SN74LVC2G126			UNIT	
	DCT (SM8)	DCU (VSSOP)	YZP (DSBGA)		
	8 PINS				
R <sub>θJA</sub>	Junction-to-ambient thermal resistance	220	227	102	°C/W

(1) For more information about traditional and new thermal metrics, see the *Semiconductor and IC Package Thermal Metrics* application report.

## 6.5 Electrical Characteristics

over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS	V <sub>CC</sub>	T <sub>A</sub> = 25°C			–40°C to +85°C		–40°C to +125°C		UNIT
			MIN	TYP <sup>(1)</sup>	MAX	MIN	MAX	MIN	MAX	
V <sub>OH</sub>	I <sub>OH</sub> = –100 μA	1.65 V to 5.5 V	V <sub>CC</sub> – 0.1			V <sub>CC</sub> – 0.1		V <sub>CC</sub> – 0.1		V
	I <sub>OH</sub> = –4 mA	1.65 V	1.2			1.2		1.2		
	I <sub>OH</sub> = –8 mA	2.3 V	1.9			1.9		1.9		
	I <sub>OH</sub> = –16 mA	3 V	2.4			2.4		2.4		
	I <sub>OH</sub> = –24 mA		2.3			2.3		2.3		
	I <sub>OH</sub> = –32 mA	4.5 V	3.8			3.8		3.8		
V <sub>OL</sub>	I <sub>OL</sub> = 100 μA	1.65 V to 5.5 V	0.1			0.1		0.1		V
	I <sub>OL</sub> = 4 mA	1.65 V	0.45			0.45		0.45		
	I <sub>OL</sub> = 8 mA	2.3 V	0.3			0.3		0.3		
	I <sub>OL</sub> = 16 mA	3 V	0.4			0.4		0.4		
	I <sub>OL</sub> = 24 mA		0.55			0.55		0.55		
	I <sub>OL</sub> = 32 mA	4.5 V	0.55			0.55		0.75		
I <sub>i</sub>	A or OE inputs	V <sub>I</sub> = 5.5 V or GND	0 to 5.5 V			±5		±5		μA
I <sub>off</sub>		V <sub>I</sub> or V <sub>O</sub> = 5.5 V	0			±10		±10		μA
I <sub>OZ</sub>		V <sub>O</sub> = 0 to 5.5 V	3.6 V			10		10		μA
I <sub>CC</sub>		V <sub>I</sub> = 5.5 V or GND I <sub>O</sub> = 0	1.65 V to 5.5 V			10		10		μA
ΔI <sub>CC</sub>		One input at V <sub>CC</sub> – 0.6 V, Other inputs at V <sub>CC</sub> or GND	3 V to 5.5 V			500		500		μA
C <sub>i</sub>	Data inputs	V <sub>I</sub> = V <sub>CC</sub> or GND	3.3 V			3.5				pF
	Control inputs					4				
C <sub>o</sub>		V <sub>O</sub> = V <sub>CC</sub> or GND	3.3 V			6.5				pF

 (1) All typical values are at V<sub>CC</sub> = 3.3 V, T<sub>A</sub> = 25°C.

## 6.6 Switching Characteristics, –40°C to +85°C

over recommended operating free-air temperature range (unless otherwise noted) (see Figure 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	–40°C to +85°C								UNIT
			V <sub>CC</sub> = 1.8 V ± 0.15 V		V <sub>CC</sub> = 2.5 V ± 0.2 V		V <sub>CC</sub> = 3.3 V ± 0.3 V		V <sub>CC</sub> = 5 V ± 0.5 V		
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
t <sub>pd</sub>	A	Y	3.5	9.8	1.7	4.9	1.4	4	1	3.2	ns
t <sub>en</sub>	OE	Y	3.5	10	1.7	5	1.5	4.1	1	3.1	ns
t <sub>dis</sub>	OE	Y	1.7	12.6	1	5.7	1	4.4	1	3.3	ns

## 6.7 Switching Characteristics, –40°C to +125°C

over recommended operating free-air temperature range (unless otherwise noted) (see Figure 3)

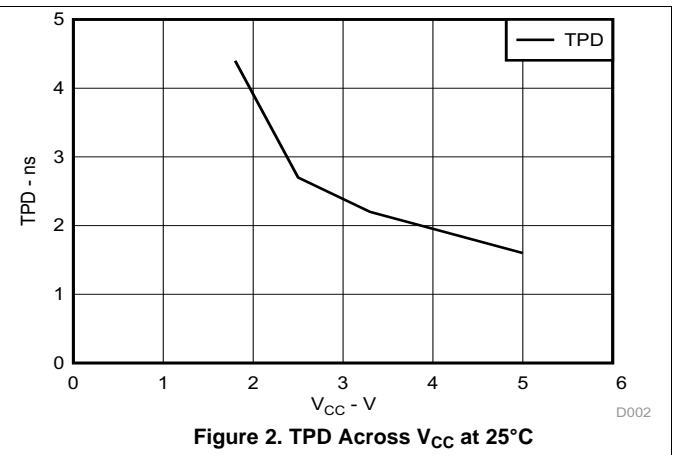
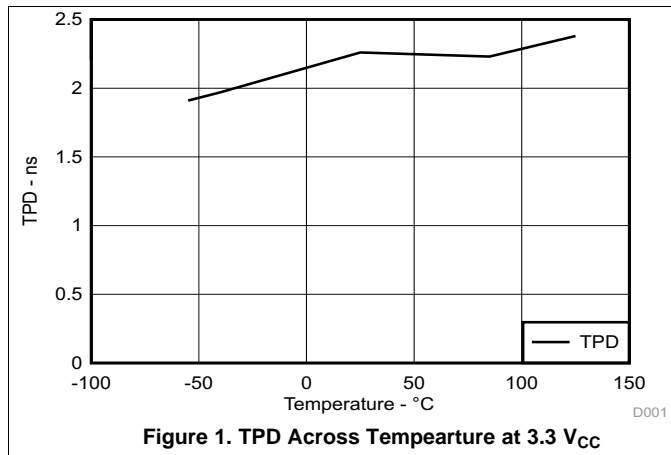
PARAMETER	FROM (INPUT)	TO (OUTPUT)	–40°C to +125°C								UNIT
			V <sub>CC</sub> = 1.8 V ± 0.15 V		V <sub>CC</sub> = 2.5 V ± 0.2 V		V <sub>CC</sub> = 3.3 V ± 0.3 V		V <sub>CC</sub> = 5 V ± 0.5 V		
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
t <sub>pd</sub>	A	Y	3.5	10.8	1.7	5.9	1.4	5	1	3.7	ns
t <sub>en</sub>	OE	Y	3.5	11	1.7	6	1.5	5.1	1	3.6	ns
t <sub>dis</sub>	OE	Y	1.7	13.6	1	6.7	1	5.4	1	3.8	ns

### 6.8 Operating Characteristics

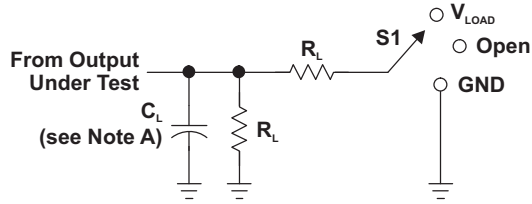
T<sub>A</sub> = 25°

PARAMETER		TEST CONDITIONS	V <sub>CC</sub> = 1.8 V	V <sub>CC</sub> = 2.5 V	V <sub>CC</sub> = 3.3 V	V <sub>CC</sub> = 5 V	UNIT	
			TYP	TYP	TYP	TYP		
C <sub>pd</sub>	Power dissipation capacitance	Outputs enabled	f = 10 MHz	19	19	20	22	pF
		Outputs disabled		2	2	2	3	

### 6.9 Typical Characteristics

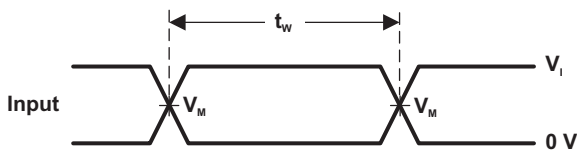
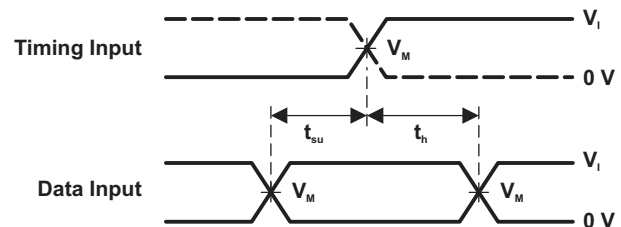
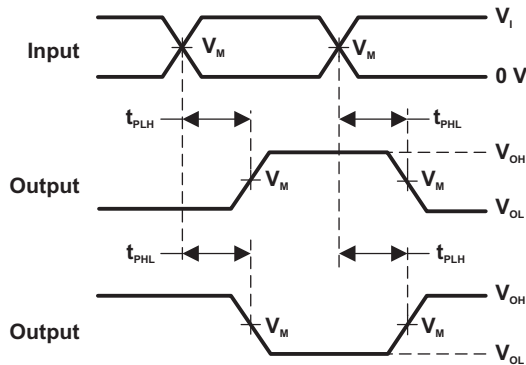
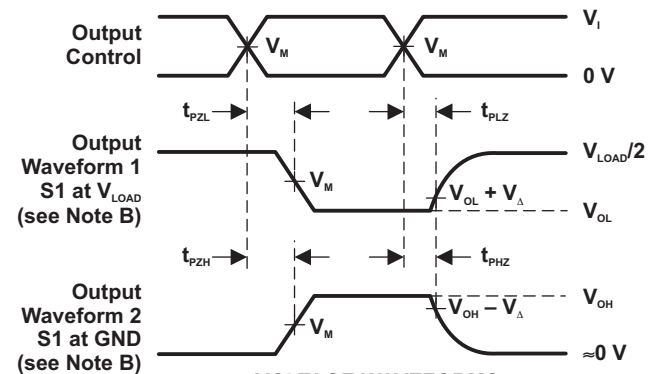


## 7 Parameter Measurement Information


**LOAD CIRCUIT**

TEST	S1
$t_{PLH}/t_{PHL}$	Open
$t_{PLZ}/t_{PZL}$	$V_{LOAD}$
$t_{PHZ}/t_{PZH}$	GND

$V_{CC}$	INPUTS		$V_M$	$V_{LOAD}$	$C_L$	$R_L$	$V_{\Delta}$
	$V_i$	$t_i/t_r$					
$1.8\text{ V} \pm 0.15\text{ V}$	$V_{CC}$	$\leq 2\text{ ns}$	$V_{CC}/2$	$2 \times V_{CC}$	30 pF	1 k $\Omega$	0.15 V
$2.5\text{ V} \pm 0.2\text{ V}$	$V_{CC}$	$\leq 2\text{ ns}$	$V_{CC}/2$	$2 \times V_{CC}$	30 pF	500 $\Omega$	0.15 V
$3.3\text{ V} \pm 0.3\text{ V}$	3 V	$\leq 2.5\text{ ns}$	1.5 V	6 V	50 pF	500 $\Omega$	0.3 V
$5\text{ V} \pm 0.5\text{ V}$	$V_{CC}$	$\leq 2.5\text{ ns}$	$V_{CC}/2$	$2 \times V_{CC}$	50 pF	500 $\Omega$	0.3 V


**VOLTAGE WAVEFORMS  
PULSE DURATION**

**VOLTAGE WAVEFORMS  
SETUP AND HOLD TIMES**

**VOLTAGE WAVEFORMS  
PROPAGATION DELAY TIMES  
INVERTING AND NONINVERTING OUTPUTS**

**VOLTAGE WAVEFORMS  
ENABLE AND DISABLE TIMES  
LOW- AND HIGH-LEVEL ENABLING**

- NOTES:
- $C_L$  includes probe and jig capacitance.
  - Waveform 1 is for an output with internal conditions such that the output is low, except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high, except when disabled by the output control.
  - All input pulses are supplied by generators having the following characteristics:  $PRR \leq 10\text{ MHz}$ ,  $Z_o = 50\ \Omega$ .
  - The outputs are measured one at a time, with one transition per measurement.
  - $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .
  - $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .
  - $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{pd}$ .
  - All parameters and waveforms are not applicable to all devices.

**Figure 3. Load Circuit and Voltage Waveforms**



## 8 Detailed Description

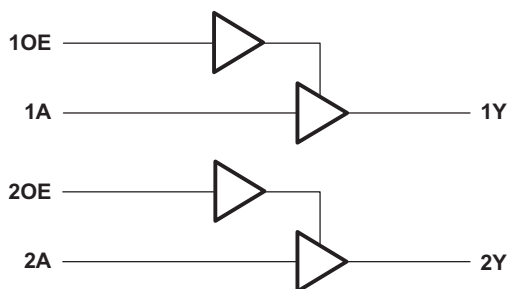
### 8.1 Overview

The SN74LVC2G126 device contains a dual buffer gate with output enable control and performs the Boolean function  $Y = A$ .

This device is fully specified for partial-power-down applications using  $I_{off}$ . The  $I_{off}$  circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

To ensure the high-impedance state during power up or power down, OE should be tied to  $V_{CC}$  through a pulldown resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver.

### 8.2 Functional Block Diagram



### 8.3 Feature Description

- 1.65 V to 5.5 V operating voltage range
- Allows down voltage translation
  - 5 V to 3.3 V
  - 5 V or 3.3 V to 1.8V
- Inputs accept voltages to 5.5 V
  - 5-V tolerance on input pin
- $I_{off}$  feature
  - Allows voltage on the inputs and outputs when  $V_{CC}$  is 0 V
  - Able to prevent leakage when  $V_{CC}$  is 0 V

### 8.4 Device Functional Modes

Table 1 lists the functional modes of SN74LVC2G126.

**Table 1. Function Table**

INPUTS		OUTPUT Y
OE	A	
H	H	H
H	L	L
L	X	Z

## 9 Application and Implementation

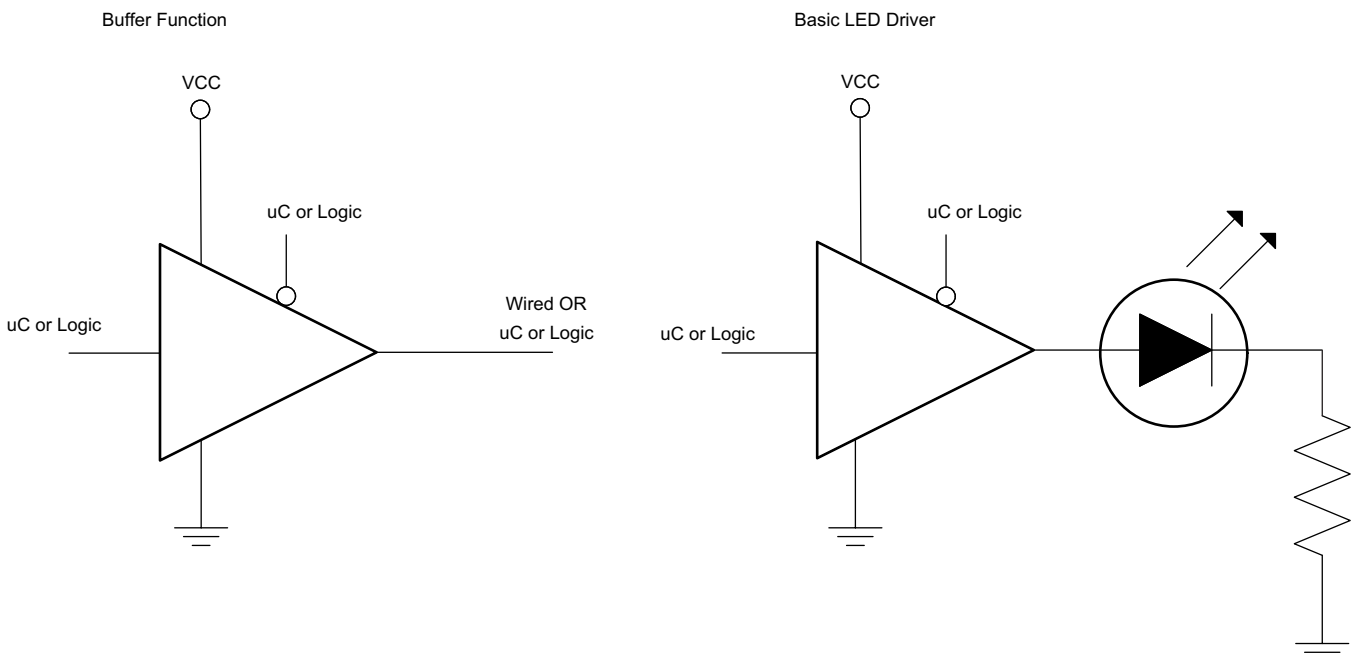
### NOTE

Information in the following applications sections is not part of the TI component specification, and TI does not warrant its accuracy or completeness. TI's customers are responsible for determining suitability of components for their purposes. Customers should validate and test their design implementation to confirm system functionality.

### 9.1 Application Information

The SN74LVC2G126 device is a high-drive CMOS device that can be used as an output enabled buffer with a high output drive, such as an LED application. It can produce 24 mA of drive current at 3.3 V, making it ideal for driving multiple outputs and good for high speed applications up to 100 MHz. The inputs are 5.5-V tolerant allowing it to translate down to  $V_{CC}$ .

### 9.2 Typical Application



**Figure 4. Application Schematic**

#### 9.2.1 Design Requirements

This device uses CMOS technology and has balanced output drive. Take care to avoid bus contention because it can drive currents that would exceed maximum limits. Outputs can be combined to produce higher drive but the high drive also creates faster edges into light loads so routing and load conditions should be considered to prevent ringing.

#### 9.2.2 Detailed Design Procedure

1. Recommended Input Conditions:
  - For rise time and fall time specifications, see  $\Delta t/\Delta V$  in the [Recommended Operating Conditions](#) table.
  - For specified high and low levels, see  $V_{IH}$  and  $V_{IL}$  in the [Recommended Operating Conditions](#) table.
  - Inputs are overvoltage tolerant allowing them to go as high as 5.5 V at any valid  $V_{CC}$ .
2. Recommended Output Conditions:
  - Load currents should not exceed 50 mA per output and 100 mA total for the part.

## Typical Application (continued)

### 9.2.3 Application Curve

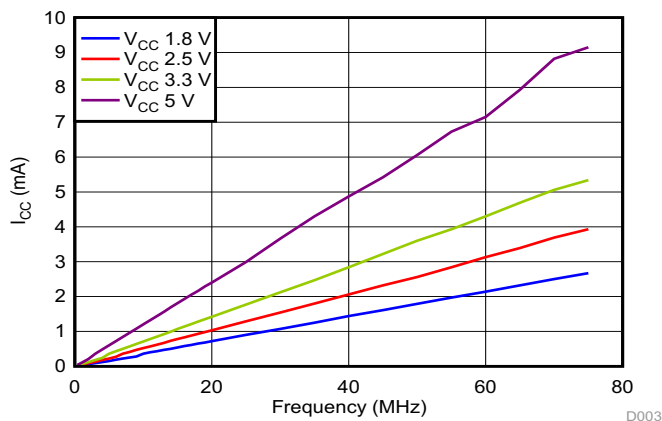


Figure 5.  $I_{CC}$  vs Frequency

## 10 Power Supply Recommendations

The power supply can be any voltage between the MIN and MAX supply voltage rating located in the [Recommended Operating Conditions](#) table.

Each  $V_{CC}$  terminal should have a good bypass capacitor to prevent power disturbance. For devices with a single supply, a 0.1- $\mu$ F capacitor is recommended. If there are multiple  $V_{CC}$  terminals then 0.01- $\mu$ F or 0.022- $\mu$ F capacitors are recommended for each power terminal. It is ok to parallel multiple bypass capacitors to reject different frequencies of noise. Multiple bypass capacitors may be paralleled to reject different frequencies of noise. Install the bypass capacitor as close to the power terminal as possible for the best results.

## 11 Layout

### 11.1 Layout Guidelines

When using multiple bit logic devices, inputs should not float. In many cases, functions or parts of functions of digital logic devices are unused. Some examples are when only two inputs of a triple-input AND gate are used, or when only 3 of the 4-buffer gates are used. Such input pins should not be left unconnected because the undefined voltages at the outside connections result in undefined operational states.

Specified in [Figure 6](#) are rules that must be observed under all circumstances. All unused inputs of digital logic devices must be connected to a high or low bias to prevent them from floating. The logic level that should be applied to any particular unused input depends on the function of the device. Generally they will be tied to GND or  $V_{CC}$ , whichever makes more sense or is more convenient. It is acceptable to float outputs unless the part is a transceiver. If the transceiver has an output enable pin, it will disable the outputs section of the part when asserted. This does not disable the input section of the I/Os so they also cannot float when disabled.

### 11.2 Layout Example

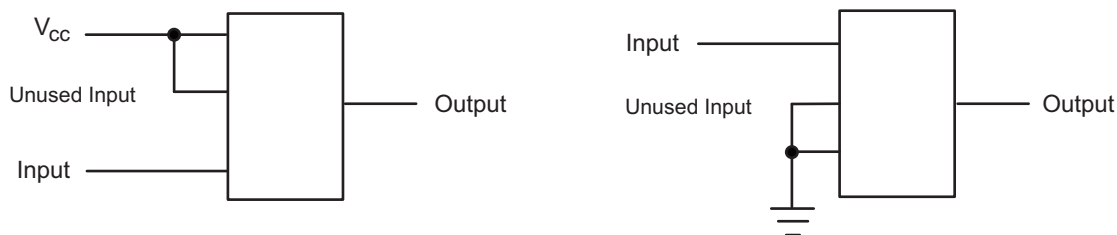


Figure 6. Layout Diagram

## 12 Device and Documentation Support

### 12.1 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on ti.com. In the upper right corner, click on *Alert me* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

### 12.2 Community Resources

The following links connect to TI community resources. Linked contents are provided "AS IS" by the respective contributors. They do not constitute TI specifications and do not necessarily reflect TI's views; see TI's [Terms of Use](#).

**TI E2E™ Online Community** *TI's Engineer-to-Engineer (E2E) Community*. Created to foster collaboration among engineers. At e2e.ti.com, you can ask questions, share knowledge, explore ideas and help solve problems with fellow engineers.

**Design Support** *TI's Design Support* Quickly find helpful E2E forums along with design support tools and contact information for technical support.

### 12.3 Trademarks

E2E is a trademark of Texas Instruments.  
All other trademarks are the property of their respective owners.

### 12.4 Electrostatic Discharge Caution



These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

### 12.5 Glossary

[SLYZ022](#) — *TI Glossary*.

This glossary lists and explains terms, acronyms, and definitions.

## 13 Mechanical, Packaging, and Orderable Information

The following pages include mechanical packaging and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser based versions of this data sheet, refer to the left hand navigation.

**PACKAGING INFORMATION**

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
74LVC2G126DCTRG4	ACTIVE	SM8	DCT	8	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	C26 Z	<a href="#">Samples</a>
74LVC2G126DCUTG4	ACTIVE	VSSOP	DCU	8	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	C26R	<a href="#">Samples</a>
SN74LVC2G126DCTR	ACTIVE	SM8	DCT	8	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	C26 Z	<a href="#">Samples</a>
SN74LVC2G126DCUR	ACTIVE	VSSOP	DCU	8	3000	Green (RoHS & no Sb/Br)	CU NIPDAU   CU SN	Level-1-260C-UNLIM	-40 to 125	(C26Q ~ C26R)	<a href="#">Samples</a>
SN74LVC2G126DCUT	ACTIVE	VSSOP	DCU	8	250	Green (RoHS & no Sb/Br)	CU NIPDAU   CU SN	Level-1-260C-UNLIM	-40 to 125	(C26Q ~ C26R)	<a href="#">Samples</a>
SN74LVC2G126YZPR	ACTIVE	DSBGA	YZP	8	3000	Green (RoHS & no Sb/Br)	SNAGCU	Level-1-260C-UNLIM	-40 to 125	(CN7 ~ CNN)	<a href="#">Samples</a>

(1) The marketing status values are defined as follows:

**ACTIVE:** Product device recommended for new designs.

**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.

**OBSOLETE:** TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

**TBD:** The Pb-Free/Green conversion plan has not been defined.

**Pb-Free (RoHS):** TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

**Pb-Free (RoHS Exempt):** This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

**Green (RoHS & no Sb/Br):** TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

<sup>(6)</sup> Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF SN74LVC2G126 :**

- Enhanced Product: [SN74LVC2G126-EP](#)

NOTE: Qualified Version Definitions:

- Enhanced Product - Supports Defense, Aerospace and Medical Applications

**TAPE AND REEL INFORMATION**

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**


\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
74LVC2G126DCUTG4	VSSOP	DCU	8	250	180.0	8.4	2.25	3.35	1.05	4.0	8.0	Q3
SN74LVC2G126DCTR	SM8	DCT	8	3000	180.0	13.0	3.35	4.5	1.55	4.0	12.0	Q3
SN74LVC2G126DCUR	VSSOP	DCU	8	3000	178.0	9.5	2.25	3.35	1.05	4.0	8.0	Q3
SN74LVC2G126DCUR	VSSOP	DCU	8	3000	180.0	8.4	2.25	3.35	1.05	4.0	8.0	Q3
SN74LVC2G126DCUT	VSSOP	DCU	8	250	178.0	9.5	2.25	3.35	1.05	4.0	8.0	Q3
SN74LVC2G126YZPR	DSBGA	YZP	8	3000	178.0	9.2	1.02	2.02	0.63	4.0	8.0	Q1

**TAPE AND REEL BOX DIMENSIONS**

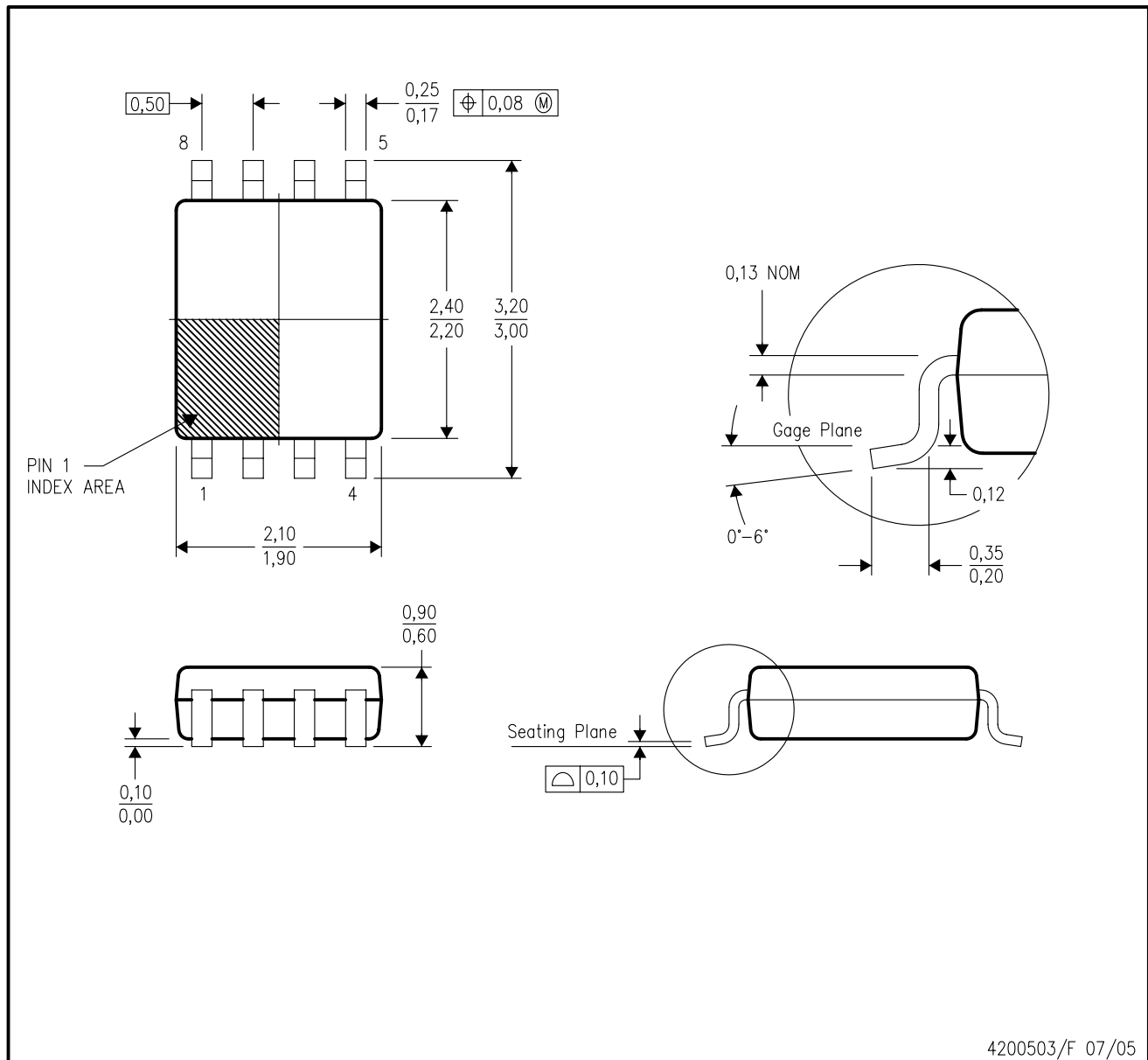

\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
74LVC2G126DCUTG4	VSSOP	DCU	8	250	202.0	201.0	28.0
SN74LVC2G126DCTR	SM8	DCT	8	3000	182.0	182.0	20.0
SN74LVC2G126DCUR	VSSOP	DCU	8	3000	202.0	201.0	28.0
SN74LVC2G126DCUR	VSSOP	DCU	8	3000	202.0	201.0	28.0
SN74LVC2G126DCUT	VSSOP	DCU	8	250	202.0	201.0	28.0
SN74LVC2G126YZPR	DSBGA	YZP	8	3000	220.0	220.0	35.0



DCU (R-PDSO-G8)

PLASTIC SMALL-OUTLINE PACKAGE (DIE DOWN)



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.15 per side.
  - D. Falls within JEDEC MO-187 variation CA.

DCU (S-PDSO-G8)

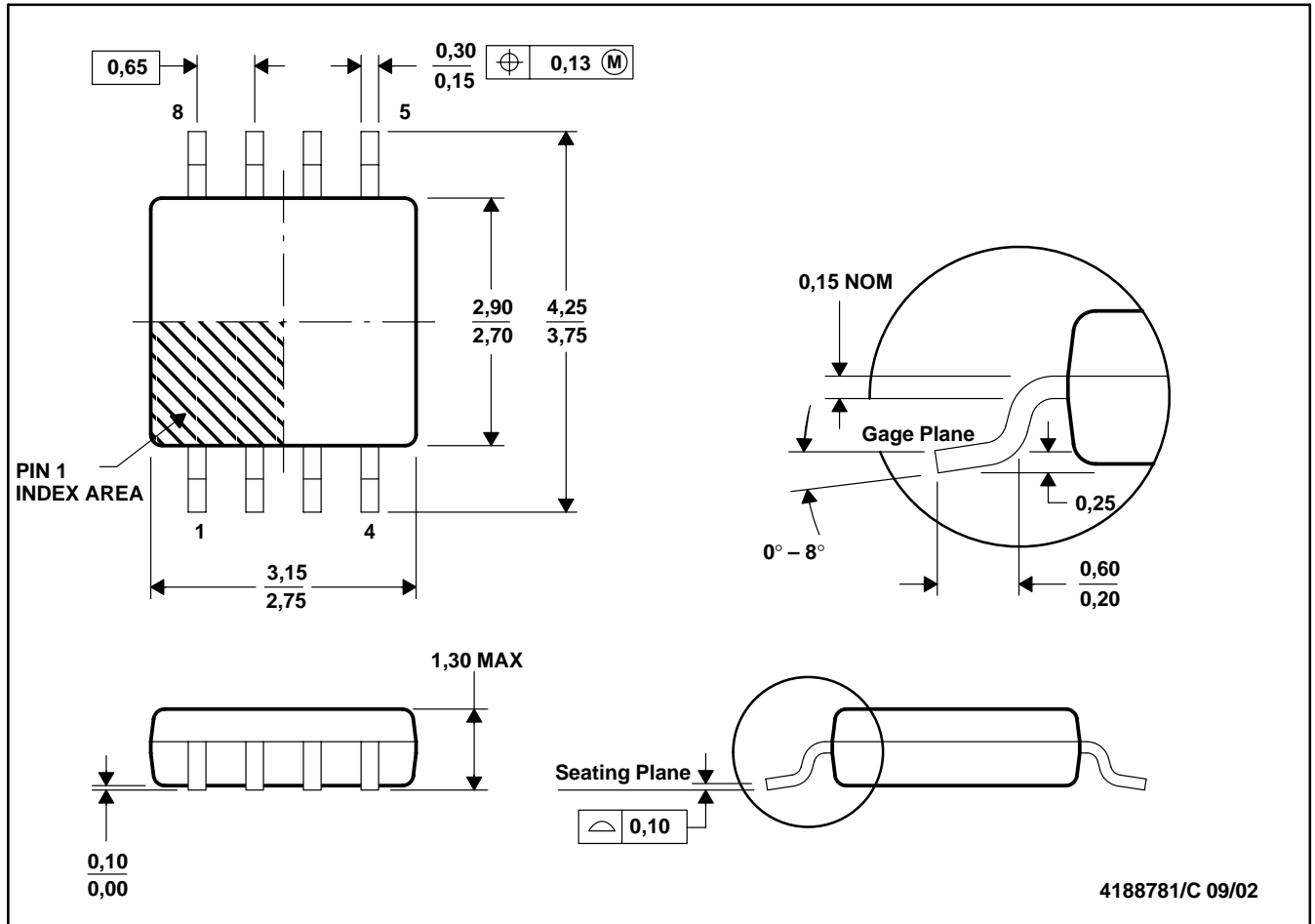
PLASTIC SMALL OUTLINE PACKAGE (DIE DOWN)



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Publication IPC-7351 is recommended for alternate designs.
  - D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
  - E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

DCT (R-PDSO-G8)

PLASTIC SMALL-OUTLINE PACKAGE



4188781/C 09/02

- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion.
  - D. Falls within JEDEC MO-187 variation DA.

DCT (R-PDSO-G8)

PLASTIC SMALL OUTLINE



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Publication IPC-7351 is recommended for alternate designs.
  - D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525.
  - E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

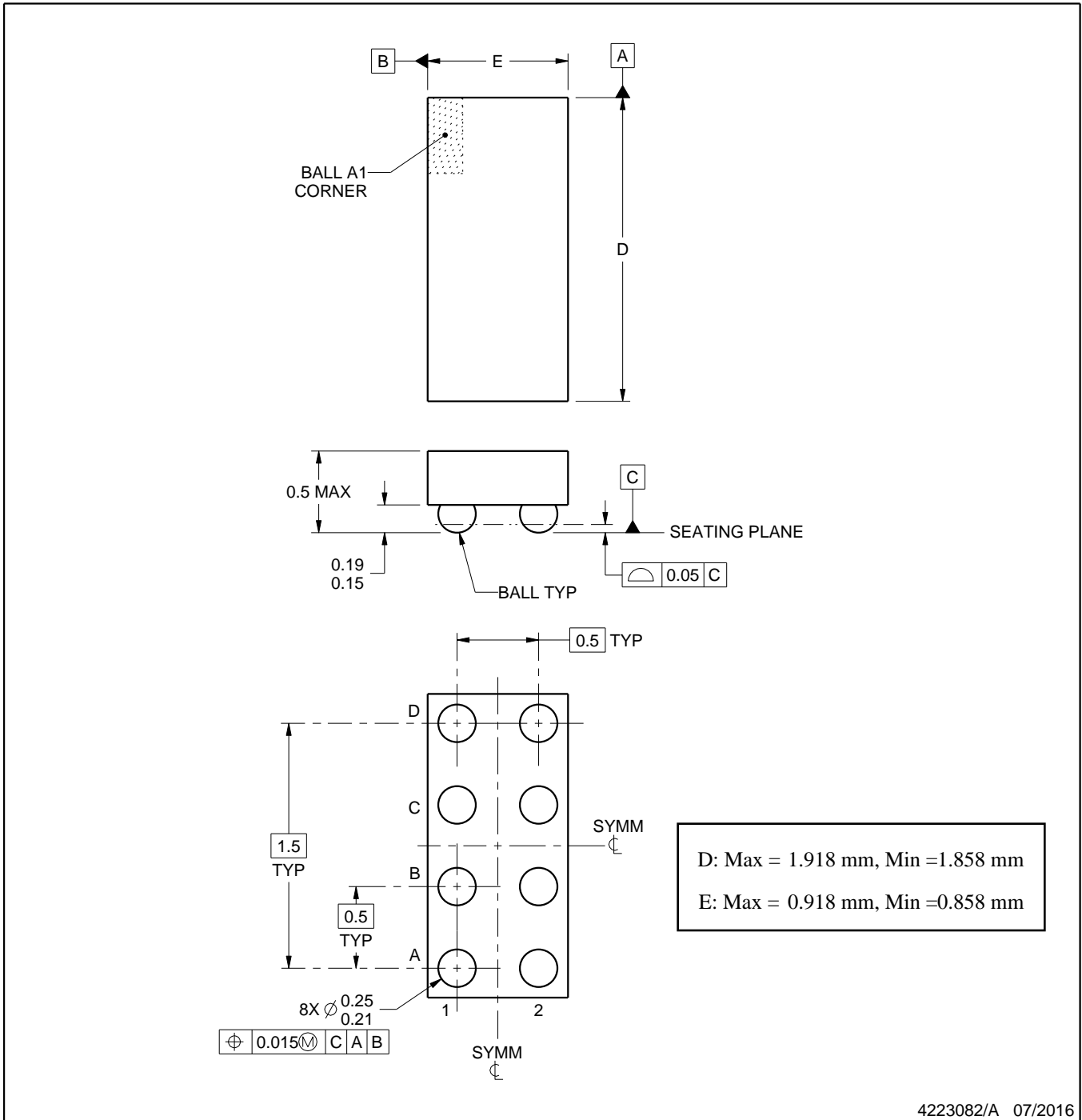
YZP0008



# PACKAGE OUTLINE

DSBGA - 0.5 mm max height

DIE SIZE BALL GRID ARRAY



NOTES:

1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.

# EXAMPLE BOARD LAYOUT

YZP0008

DSBGA - 0.5 mm max height

DIE SIZE BALL GRID ARRAY



LAND PATTERN EXAMPLE  
SCALE:40X



SOLDER MASK DETAILS  
NOT TO SCALE

4223082/A 07/2016

NOTES: (continued)

- Final dimensions may vary due to manufacturing tolerance considerations and also routing constraints. For more information, see Texas Instruments literature number SNVA009 ([www.ti.com/lit/snva009](http://www.ti.com/lit/snva009)).

# EXAMPLE STENCIL DESIGN

YZP0008

DSBGA - 0.5 mm max height

DIE SIZE BALL GRID ARRAY



SOLDER PASTE EXAMPLE  
BASED ON 0.1 mm THICK STENCIL  
SCALE:40X

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NOTES: (continued)

4. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release.

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