

SN74LVC2G66-Q1 Automotive Dual Bilateral Analog Switch

1 Features

- **Functional safety-capable**
 - Documentation available to aid functional safety system design
- Qualified for automotive applications
- AEC-Q100 qualified with the following results:
 - Device temperature grade 1: -40°C to $+125^{\circ}\text{C}$ ambient operating temperature range
 - Device HBM ESD classification level H2
 - Device CDM ESD classification level C3B
- 1.65 V to 5.5 V V_{CC} operation
- Inputs accept voltages to 5.5 V
- High on-off output voltage ratio
- High degree of linearity
- High speed, typically 0.5 ns ($V_{\text{CC}} = 3\text{ V}$, $C_L = 50\text{ pF}$)
- Rail-to-rail input output
- Low on-state resistance, typically $\approx 6\ \Omega$ ($V_{\text{CC}} = 4.5\text{ V}$)

2 Applications

- Wireless devices
- Audio and video signal routing
- Portable computing
- Wearable devices
- Signal gating, chopping, modulation or demodulation (modem)
- Signal multiplexing for analog-to-digital and digital-to-analog conversion systems

3 Description

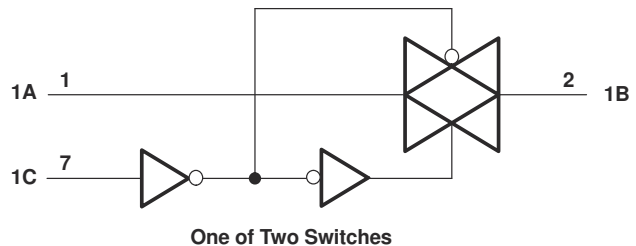
The design of this dual bilateral analog switch is for 1.65 V to 5.5 V V_{CC} operation. The SN74LVC2G66-Q1 can handle both analog and digital signals. The device permits signals with amplitudes of up to 5.5 V (peak) to be transmitted in either direction. Each switch section has its own enable-input control (C). A high-level voltage applied to C turns on the associated switch section.

Applications include signal gating, chopping, modulation or demodulation (modem), and signal multiplexing for analog-to-digital and digital-to-analog conversion systems.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SN74LVC2G66-Q1	VSSOP (8)	2.30 mm × 2.00 mm

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



Logic Diagram, Each Switch (Positive Logic)



Table of Contents

1 Features	1	9.2 Functional Block Diagram.....	14
2 Applications	1	9.3 Feature Description.....	14
3 Description	1	9.4 Device Functional Modes.....	14
4 Revision History	2	10 Application and Implementation	15
5 Ordering Information	3	10.1 Application Information.....	15
6 Pin Configuration and Functions	3	10.2 Typical Application.....	15
7 Specifications	4	11 Power Supply Recommendations	16
7.1 Absolute Maximum Ratings.....	4	12 Layout	17
7.2 ESD Ratings.....	4	12.1 Layout Guidelines.....	17
7.3 Thermal Information.....	4	12.2 Layout Example.....	17
7.4 Recommended Operating Conditions.....	4	13 Device and Documentation Support	18
7.5 Electrical Characteristics.....	5	13.1 Documentation Support.....	18
7.6 Switching Characteristics.....	6	13.2 Receiving Notification of Documentation Updates..	18
7.7 Analog Switch Characteristics.....	6	13.3 Support Resources.....	18
7.8 Operating Characteristics.....	7	13.4 Trademarks.....	18
7.9 Typical Characteristics.....	7	13.5 Electrostatic Discharge Caution.....	18
8 Parameter Measurement Information	8	13.6 Glossary.....	18
9 Detailed Description	14	14 Mechanical, Packaging, and Orderable Information	18
9.1 Overview.....	14		

4 Revision History

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

Changes from Revision A (July 2012) to Revision B (October 2021)	Page
• Updated the numbering format for tables, figures, and cross-references throughout the document.....	1
• Added functional safety text to the data sheet.....	1
• Added the <i>Detailed Description</i> sections.....	14
• Added the <i>Application and Implementation</i> sections.....	15
• Added the <i>Power Supply Recommendations</i> section.....	16
• Added the <i>Layout</i> sections.....	17
• Added the <i>Device and Documentation</i> sections.....	18

5 Ordering Information

T _A	PACKAGE ⁽¹⁾		ORDERABLE PART NUMBER	TOP-SIDE MARKING ⁽²⁾
–40°C to 125°C	VSSOP – DCU	Reel of 3000	SN74LVC2G66QDCURQ1	CAY_

- (1) Package drawings, thermal data, and symbolization are available at www.ti.com/packaging.
 (2) DCU: The actual top-side marking has one additional character that designates the assembly/test site.

6 Pin Configuration and Functions

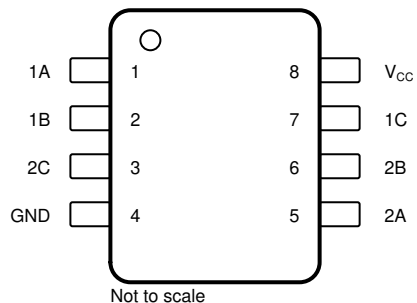


Figure 6-1. DCU Package 8-Pin VSSOP Top View

Pin Functions

PIN		I/O	DESCRIPTION
NAME	NAME		
1A	1	I/O	Bidirectional signal to be switched
1B	2	I/O	Bidirectional signal to be switched
2C	3	I	Controls the switch (L = OFF, H = ON)
GND	4	—	Ground pin
2A	5	I/O	Bidirectional signal to be switched
2B	6	I/O	Bidirectional signal to be switched
1C	7	I	Controls the switch (L = OFF, H = ON)
V _{CC}	8	—	Power Pin

7 Specifications

7.1 Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)⁽¹⁾

		MIN	MAX	UNIT
V _{CC}	Supply voltage range ⁽²⁾	–0.5	6.5	V
V _I	Input voltage range ^{(2) (3)}	–0.5	6.5	V
V _O	Switch I/O voltage range ^{(2) (3) (4)}	–0.5	V _{CC} + 0.5	V
I _{IK}	Control input clamp current	V _I < 0	–50	mA
I _{I/O}	I/O port diode current	V _{I/O} < 0 or V _{I/O} > V _{CC}	–50	mA
I _T	On-state switch current	V _{I/O} = 0 to V _{CC}	±50	mA
	Continuous current through V _{CC} or GND		±100	mA
T _J	Junction temperature		150	°C
T _{stg}	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) All voltages are with respect to ground, unless otherwise specified.
- (3) Exceeding the input and output negative-voltage ratings is permitted when in observance of the input and output clamp-current ratings.
- (4) This limit on this value is limited 5.5 V maximum.

7.2 ESD Ratings

		VALUE	UNIT
V _(ESD)	Electrostatic discharge	Human-body model (HBM), per AEC Q100-002 ⁽¹⁾	2000
		Charged-device model (CDM), per AEC Q100-011	750

- (1) AEC Q100-002 indicates that HBM stressing shall be in accordance with the ANSI/ESDA/JEDEC JS-001 specification.

7.3 Thermal Information

THERMAL METRIC ⁽¹⁾		SN74LVC2G66-Q1	UNIT
		DCU (VSSOP)	
		8 PINS	
R _{θJA}	Junction-to-ambient thermal resistance	204.4	°C/W
R _{θJCTop}	Junction-to-case (top) thermal resistance	77	°C/W
R _{θJB}	Junction-to-board thermal resistance	83.2	°C/W
ψ _{JT}	Junction-to-top characterization parameter	7.1	°C/W
ψ _{JB}	Junction-to-board characterization parameter	82.7	°C/W
R _{θJCbot}	Junction-to-case (bottom) thermal resistance	N/A	°C/W

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

7.4 Recommended Operating Conditions

See ⁽¹⁾

		MIN	MAX	UNIT
V _{CC}	Supply voltage	1.65	5.5	V
V _{I/O}	I/O port voltage	0	V _{CC}	V
V _{IH}	High-level input voltage, control input	V _{CC} = 1.65 V to 1.95 V	V _{CC} × 0.65	V
		V _{CC} = 2.3 V to 2.7 V	V _{CC} × 0.7	
		V _{CC} = 3 V to 3.6 V	V _{CC} × 0.7	
		V _{CC} = 4.5 V to 5.5 V	V _{CC} × 0.7	

7.4 Recommended Operating Conditions (continued)

See (1)

		MIN	MAX	UNIT
V _{IL}	Low-level input voltage, control input	V _{CC} = 1.65 V to 1.95 V	V _{CC} × 0.35	V
		V _{CC} = 2.3 V to 2.7 V	V _{CC} × 0.3	
		V _{CC} = 3 V to 3.6 V	V _{CC} × 0.3	
		V _{CC} = 4.5 V to 5.5 V	V _{CC} × 0.3	
V _I	Control input voltage	0	5.5	V
Δt/Δv	Input transition rise/fall time	V _{CC} = 1.65 V to 1.95 V	20	ns/V
		V _{CC} = 2.3 V to 2.7 V	20	
		V _{CC} = 3 V to 3.6 V	10	
		V _{CC} = 4.5 V to 5.5 V	10	
T _A	Operating free-air temperature	–40	125	°C

(1) Hold all unused inputs of the device at V_{CC} or GND to ensure proper device operation. See the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number [SCBA004](#).

7.5 Electrical Characteristics

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

PARAMETER	TEST CONDITIONS	V _{CC}	MIN	TYP ⁽¹⁾	MAX	UNIT
r _{on}	On-state switch resistance V _I = V _{CC} or GND, V _C = V _{IH} (see Figure 8-1 and Figure 7-1)	I _S = 4 mA	1.65 V	12.5	35	Ω
		I _S = 8 mA	2.3 V	9	30	
		I _S = 24 mA	3 V	7.5	20	
		I _S = 32 mA	4.5 V	6	15	
r _{on(p)}	Peak on-state resistance V _I = V _{CC} to GND, V _C = V _{IH} (see Figure 8-1 and Figure 7-1)	I _S = 4 mA	1.65 V	85	120 ⁽¹⁾	Ω
		I _S = 8 mA	2.3 V	22	30 ⁽¹⁾	
		I _S = 24 mA	3 V	12	25	
		I _S = 32 mA	4.5 V	7.5	20	
Δr _{on}	Difference of on-state resistance between switches V _I = V _{CC} to GND, V _C = V _{IH} (see Figure 8-1 and Figure 7-1)	I _S = 4 mA	1.65 V		10	Ω
		I _S = 8 mA	2.3 V		8	
		I _S = 24 mA	3 V		6	
		I _S = 32 mA	4.5 V		5	
I _{S(off)}	Off-state switch leakage current V _I = V _{CC} and V _O = GND or V _I = GND and V _O = V _{CC} , V _C = V _{IL} (see Figure 8-2)	5.5 V		±2		μA
				±0.1 ⁽¹⁾		
I _{S(on)}	On-state switch leakage current V _I = V _{CC} or GND, V _C = V _{IH} , V _O = Open (see Figure 8-3)	5.5 V		±2		μA
				±0.1 ⁽¹⁾		
I _I	Control input current V _C = V _{CC} or GND	5.5 V		±1		μA
				±0.1 ⁽¹⁾		
I _{CC}	Supply current V _C = V _{CC} or GND	5.5 V		15		μA
				1 ⁽¹⁾		
ΔI _{CC}	Supply-current change V _C = V _{CC} – 0.6 V	5.5 V			500	μA
C _{ic}	Control input capacitance	5 V		3.5		pF
C _{io(off)}	Switch input/output capacitance	5 V		6		pF
C _{io(on)}	Switch input/output capacitance	5 V		14		pF

(1) T_A = 25°C

7.6 Switching Characteristics

over recommended operating free-air temperature range (unless otherwise noted) (see [Figure 8-4](#))

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 1.8\text{ V} \pm 0.15\text{ V}$		$V_{CC} = 2.5\text{ V} \pm 0.2\text{ V}$		$V_{CC} = 3.3\text{ V} \pm 0.3\text{ V}$		$V_{CC} = 5\text{ V} \pm 0.5\text{ V}$		UNIT
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
t_{en} ⁽¹⁾	C	A or B	2.3	12	1.6	7.5	1.5	6.4	1.3	5.9	ns
t_{dis} ⁽²⁾	C	A or B	2.2	12.5	1.2	7.9	2	9.2	1.1	8.3	ns

(1) t_{pZL} and t_{pZH} are the same as t_{en} .

(2) t_{pLZ} and t_{pHZ} are the same as t_{dis} .

7.7 Analog Switch Characteristics

$T_A = 25^\circ\text{C}$

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	V_{CC}	TYP	UNIT
Frequency response (switch on)	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = \text{sine wave}$ (see Figure 8-5)	1.65 V	35	MHz
				2.3 V	120	
				3 V	175	
				4.5 V	195	
			$C_L = 5\text{ pF}$, $R_L = 50\ \Omega$, $f_{in} = \text{sine wave}$ (see Figure 8-5)	1.65 V	>300	
				2.3 V	>300	
				3 V	>300	
				4.5 V	>300	
Crosstalk ⁽¹⁾ (between switches)	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (sine wave) (see Figure 8-6)	1.65 V	–58	dB
				2.3 V	–58	
				3 V	–58	
				4.5 V	–58	
			$C_L = 5\text{ pF}$, $R_L = 50\ \Omega$, $f_{in} = 1\text{ MHz}$ (sine wave) (see Figure 8-6)	1.65 V	–42	
				2.3 V	–42	
				3 V	–42	
				4.5 V	–42	
Crosstalk (control input to signal output)	C	A or B	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (square wave) (see Figure 8-7)	1.65 V	35	mV
				2.3 V	50	
				3 V	70	
				4.5 V	100	
Feedthrough attenuation (switch off)	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (sine wave) (see Figure 8-8)	1.65 V	–58	dB
				2.3 V	–58	
				3 V	–58	
				4.5 V	–58	
			$C_L = 5\text{ pF}$, $R_L = 50\ \Omega$, $f_{in} = 1\text{ MHz}$ (sine wave) (see Figure 8-8)	1.65 V	–42	
				2.3 V	–42	
				3 V	–42	
				4.5 V	–42	

7.7 Analog Switch Characteristics (continued)

$T_A = 25^\circ\text{C}$

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	V_{CC}	TYP	UNIT
Sine-wave distortion	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 10\text{ k}\Omega$, $f_{in} = 1\text{ kHz}$ (sine wave) (see Figure 8-9)	1.65 V	0.1%	
				2.3 V	0.025%	
				3 V	0.015%	
				4.5 V	0.01%	
			$C_L = 50\text{ pF}$, $R_L = 10\text{ k}\Omega$, $f_{in} = 10\text{ kHz}$ (sine wave) (see Figure 8-9)	1.65 V	0.15%	
				2.3 V	0.025%	
				3 V	0.015%	
				4.5 V	0.01%	

(1) Adjust f_{in} voltage to obtain 0 dBm at input.

7.8 Operating Characteristics

$T_A = 25^\circ\text{C}$

PARAMETER	TEST CONDITIONS	$V_{CC} = 1.8\text{ V}$	$V_{CC} = 2.5\text{ V}$	$V_{CC} = 3.3\text{ V}$	$V_{CC} = 5\text{ V}$	UNIT
		TYP	TYP	TYP	TYP	
C_{pd} Power-dissipation capacitance	$f = 10\text{ MHz}$	8	9	9.5	11	pF

7.9 Typical Characteristics

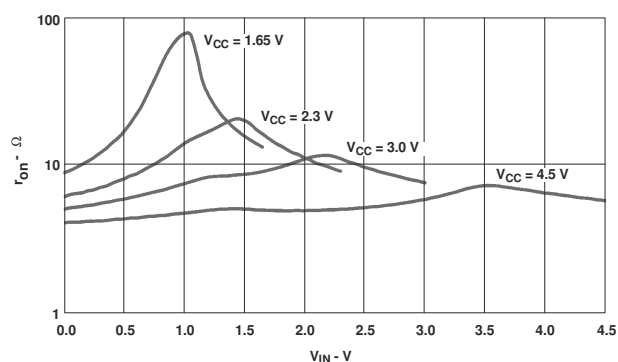


Figure 7-1. Typical r_{on} as a Function of Input Voltage (V_I) for $V_I = 0$ to V_{CC}

8 Parameter Measurement Information

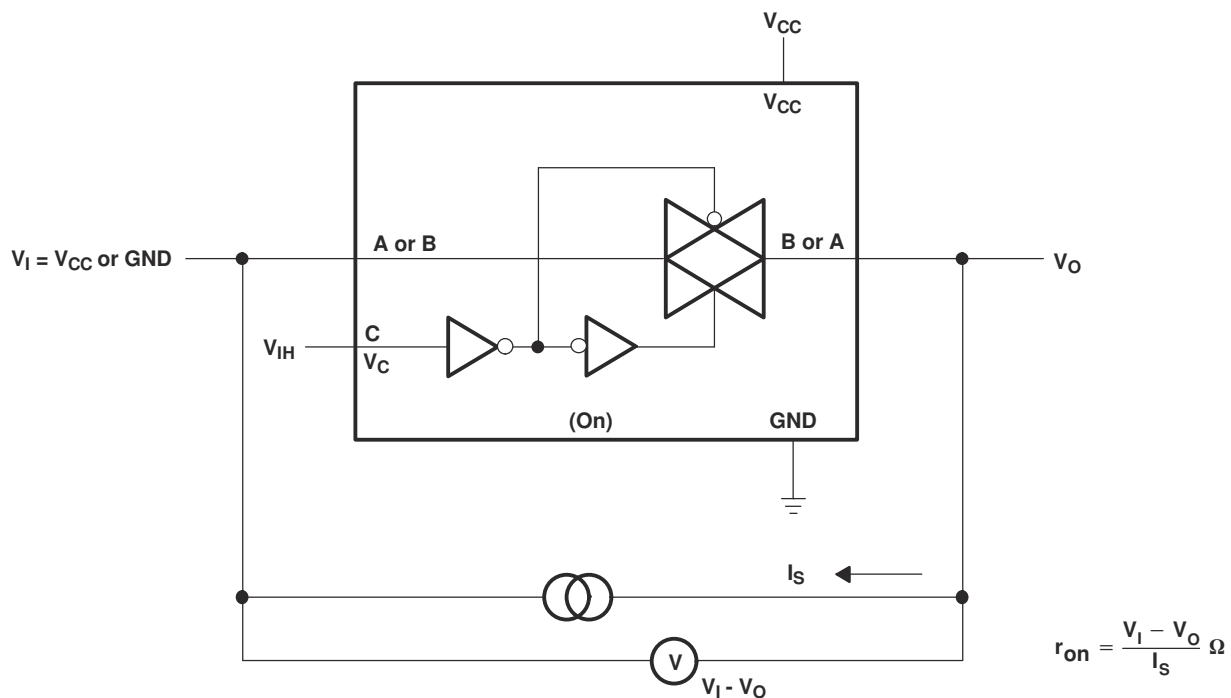


Figure 8-1. On-State Resistance Test Circuit

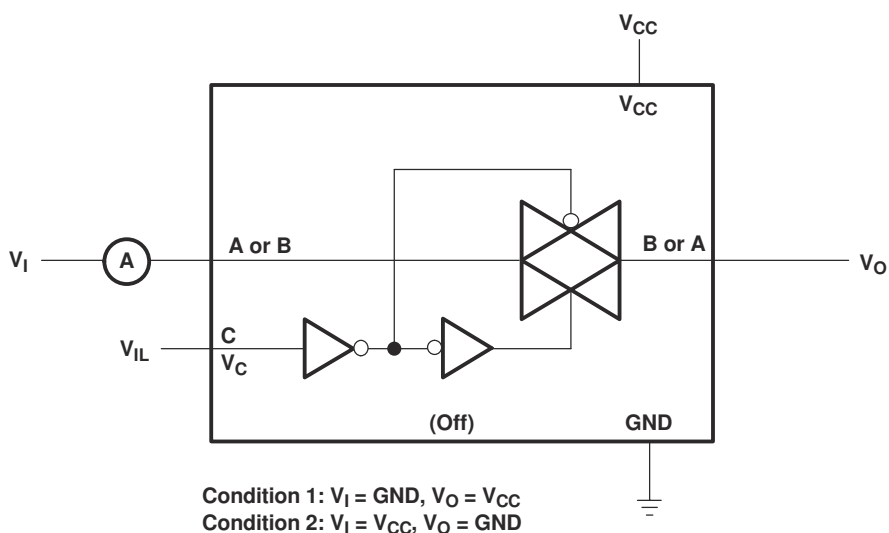


Figure 8-2. Off-State Switch Leakage-Current Test Circuit

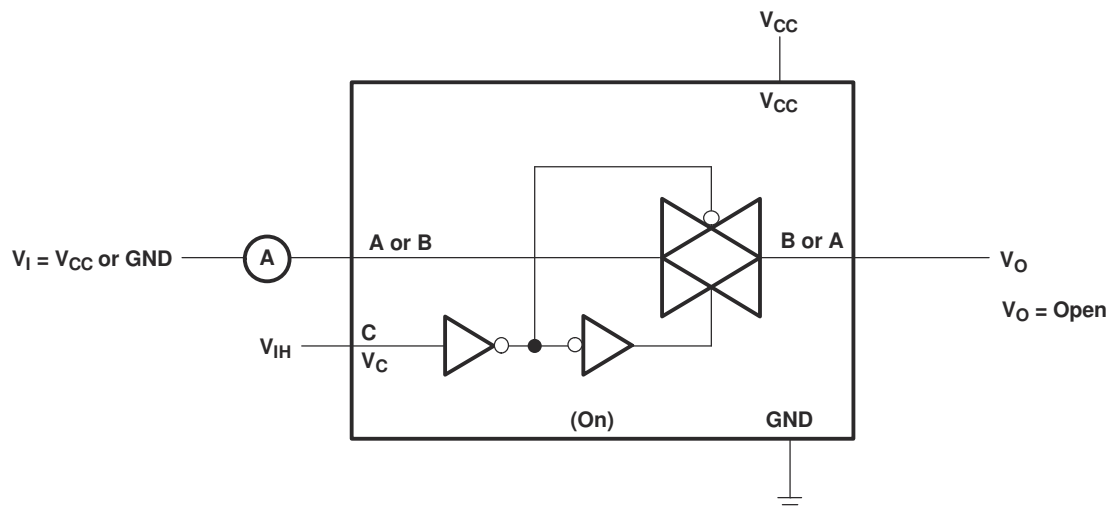
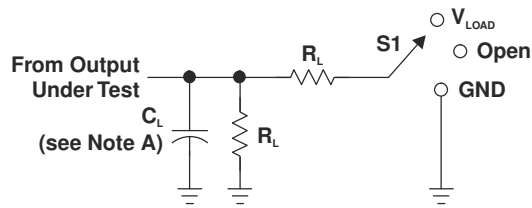


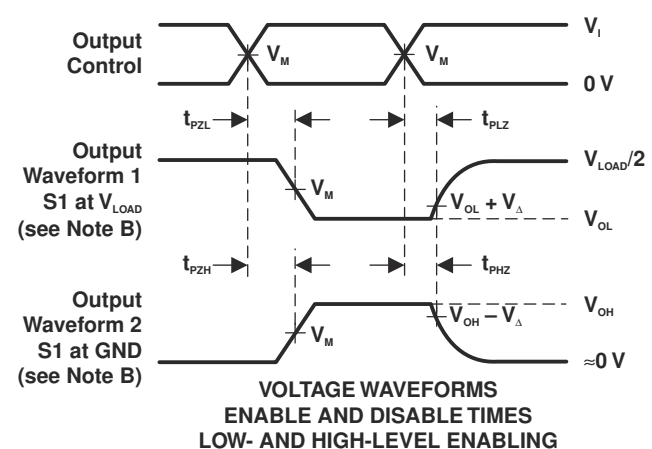
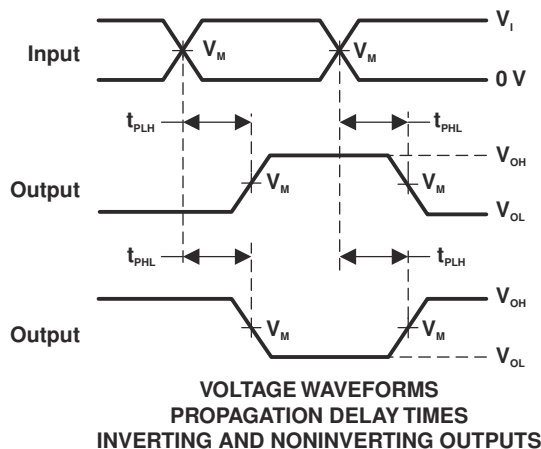
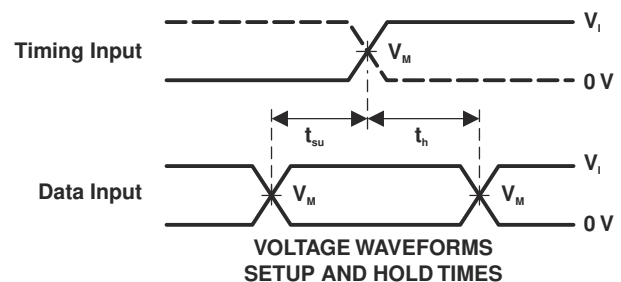
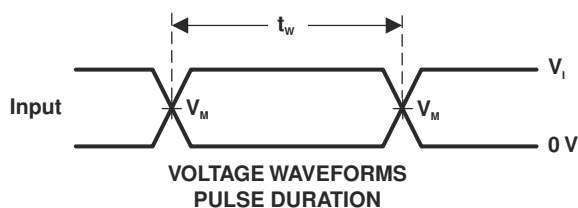
Figure 8-3. On-State Leakage-Current Test Circuit



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_{Δ}
	V_I	t_r/t_f					
$1.8\text{ V} \pm 0.15\text{ V}$	V_{CC}	$\leq 2\text{ ns}$	$V_{CC}/2$	$2 \times V_{CC}$	30 pF	1 k Ω	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 Ω	0.15 V
$3.3\text{ V} \pm 0.3\text{ V}$	V_{CC}	$\leq 2.5\text{ ns}$	$V_{CC}/2$	$2 \times V_{CC}$	50 pF	500 Ω	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 Ω	0.3 V



- 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 have 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 8-4. Load Circuit and Voltage Waveforms

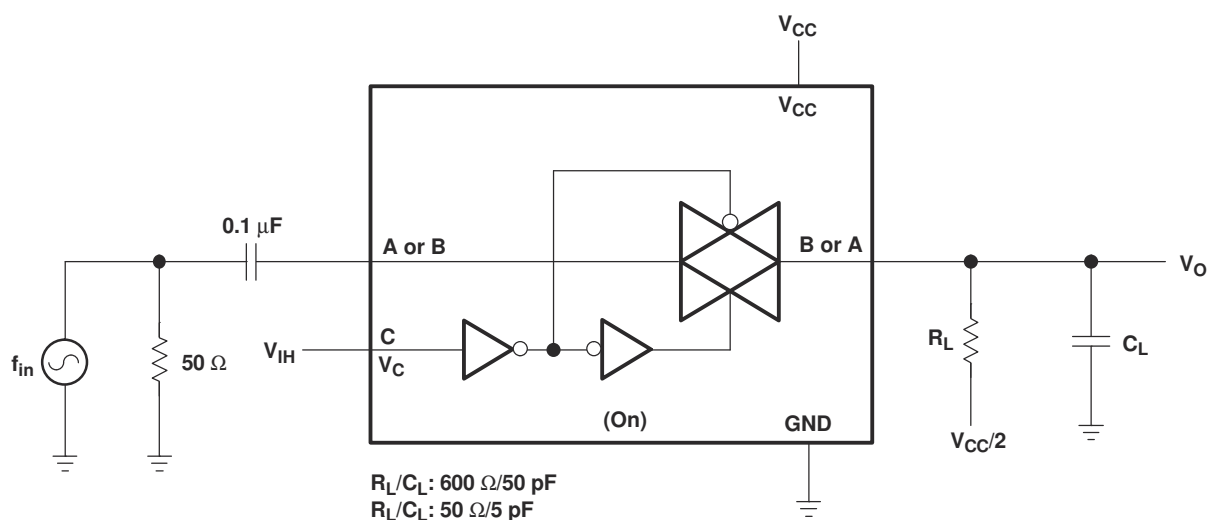


Figure 8-5. Frequency Response (Switch On)

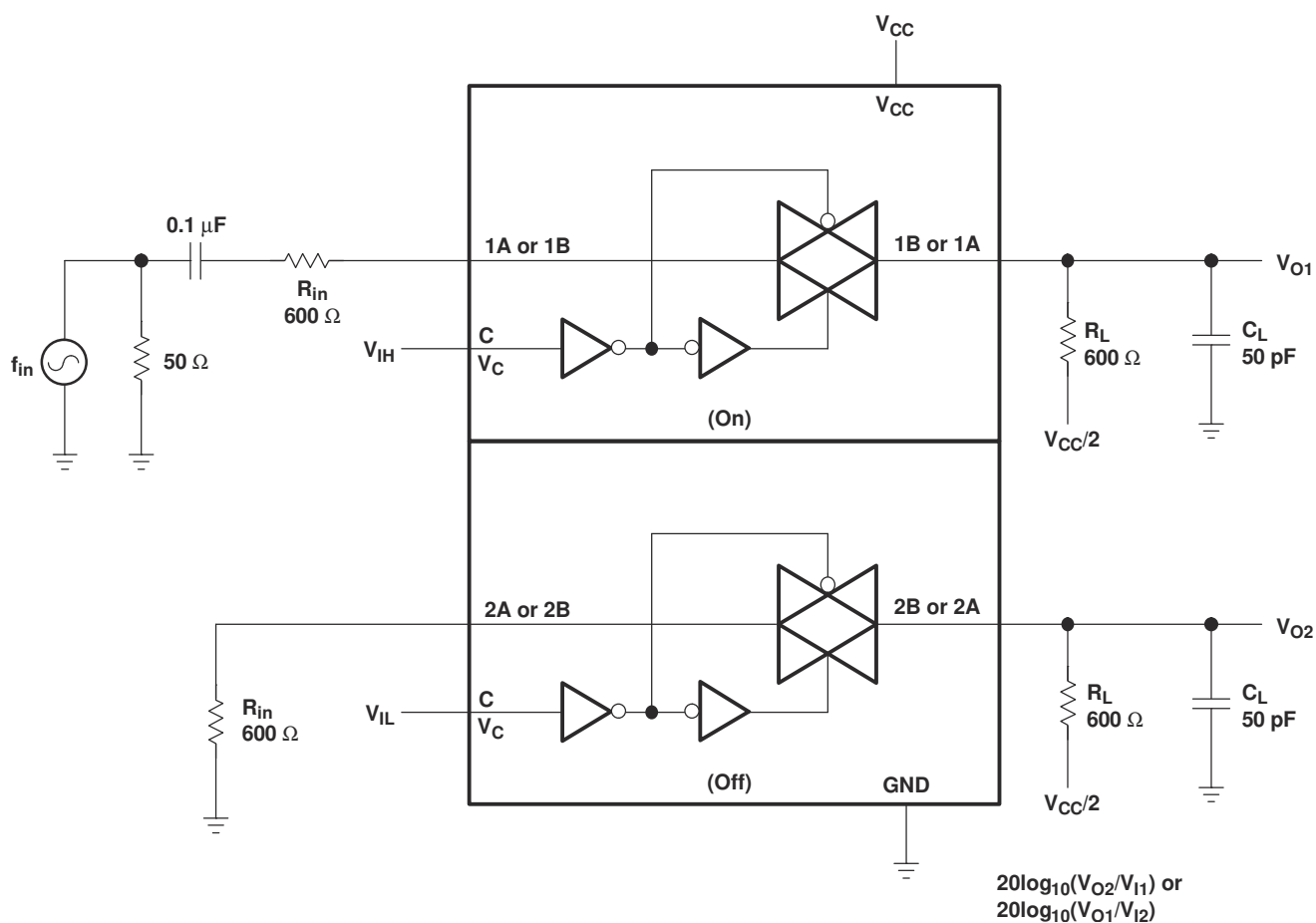


Figure 8-6. Crosstalk (Between Switches)

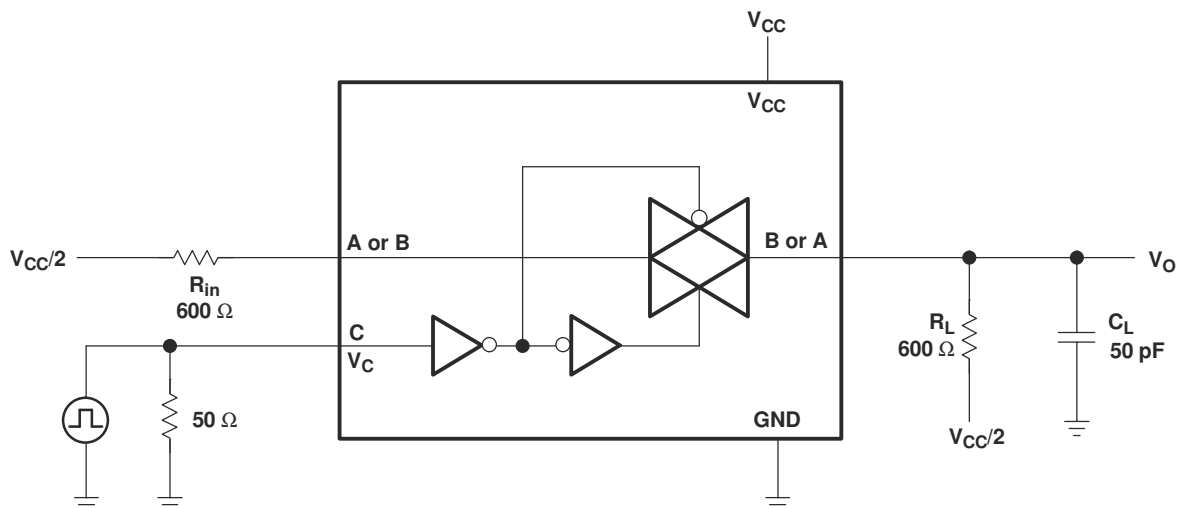


Figure 8-7. Crosstalk (Control Input, Switch Output)

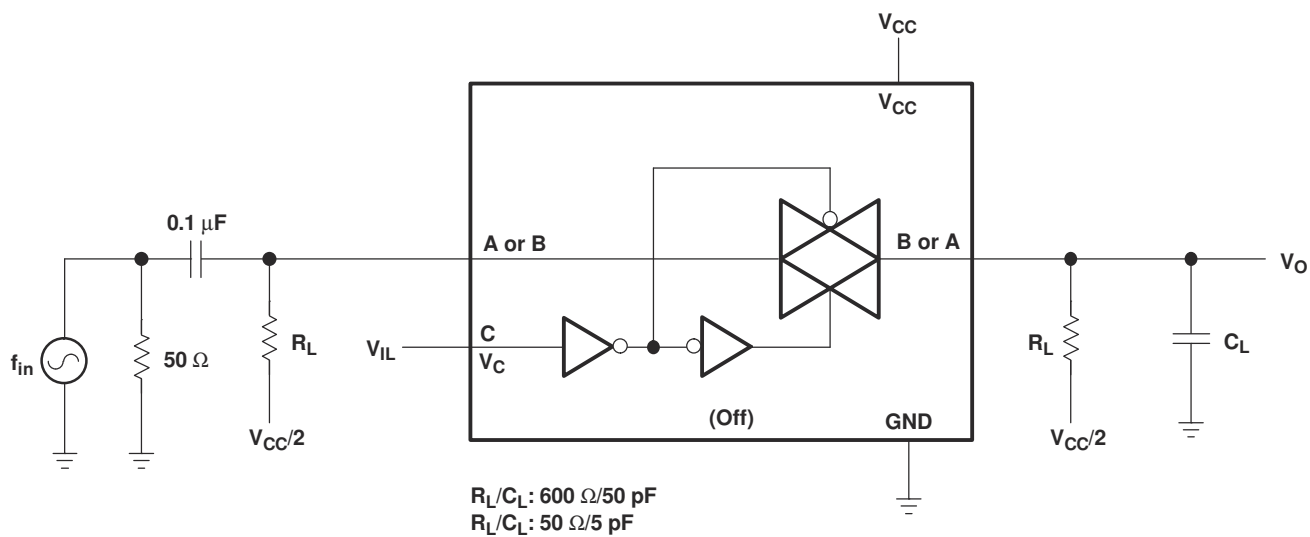


Figure 8-8. Feedthrough (Switch Off)

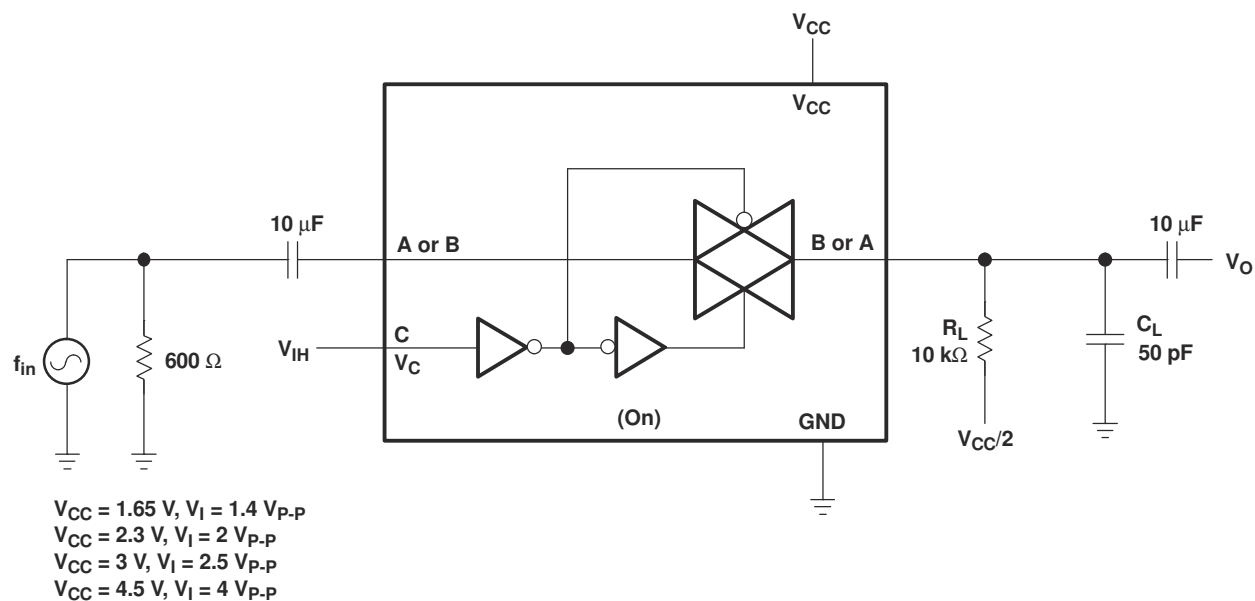


Figure 8-9. Sine-Wave Distortion

9 Detailed Description

9.1 Overview

This dual bilateral analog switch is designed for 1.65-V to 5.5-V V_{CC} operation. Robust LVC family technology allows this device to accept input voltages without connecting power to V_{CC} .

The SN74LVC2G66-Q1 device permits signals with amplitudes of up to 5.5 V (peak) to be transmitted in either direction. A high-level voltage applied to the control pin C enables the respective switch to begin propagating signals across the device. A low-level voltage disables this transmission. Each device incorporates two switches with independent control and operation.

9.2 Functional Block Diagram

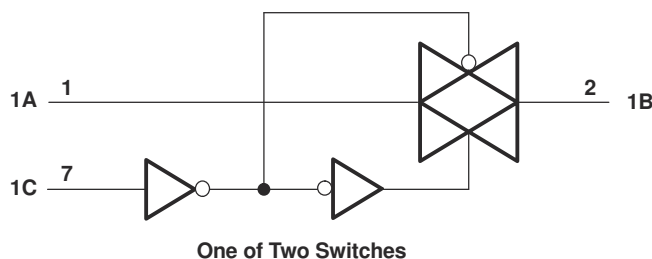


Figure 9-1. Logic Diagram, Each Switch (Positive Logic)

9.3 Feature Description

Each switch section has its own enable-input control (C). A high-level voltage applied to C turns on the associated switch section. When C is this Signals can pass through A to B or B to A. Low ON-resistance of 6 Ω at 4.5-V V_{CC} is ideal for analog signal conditioning systems. The control signals can accept voltages up to 5.5 V without V_{CC} connected in the system. Combination of lower t_{pd} of 0.8 ns at 3.3 V and low enable and disable time make this part suitable for high-speed signal switching applications.

9.4 Device Functional Modes

Table 9-1 shows the functional modes of the SN74LVC2G66-Q1.

Table 9-1. Function Table
(Each Section)

CONTROL INPUT (C)	SWITCH
L	Off
H	On

10 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, as well as validating and testing their design implementation to confirm system functionality.

10.1 Application Information

The SN74LVC2G66-Q1 can be used in any situation where an Dual SPST switch would be used and a solid-state, voltage controlled version is preferred.

10.2 Typical Application

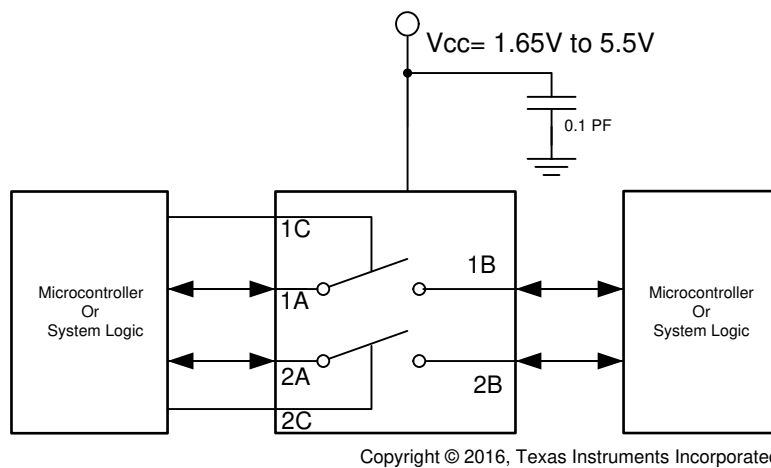


Figure 10-1. Typical Application Schematic

10.2.1 Design Requirements

The SN74LVC2G66-Q1 allows on/off control of analog and digital signals with a digital control signal. All input signals should remain between 0 V and V_{CC} for optimal operation.

10.2.2 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 and outputs 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.
3. Frequency Selection Criterion:
 - Maximum frequency tested is 150 MHz.
 - Added trace resistance or capacitance can reduce maximum frequency capability; use layout practices as directed in the [Layout](#) section.

10.2.3 Application Curve

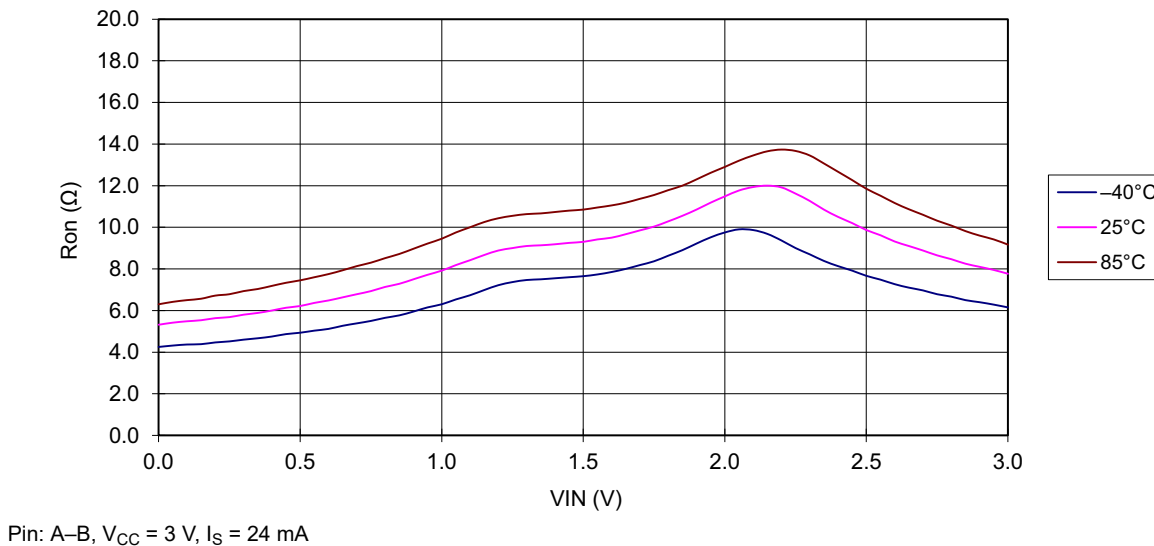


Figure 10-2. r_{on} vs V_I

11 Power Supply Recommendations

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

Each V_{CC} terminal should have a good bypass capacitor to prevent power disturbance. For devices with a single supply, a 0.1- μF bypass capacitor is recommended. If there are multiple pins labeled V_{CC} , then a 0.01- μF or 0.022- μF capacitor is recommended for each V_{CC} because the V_{CC} pins will be tied together internally. For devices with dual-supply pins operating at different voltages, for example V_{CC} and V_{DD} , a 0.1- μF bypass capacitor is recommended for each supply pin. It is acceptable to parallel multiple bypass capacitors to reject different frequencies of noise. 0.1- μF and 1- μF capacitors are commonly used in parallel. The bypass capacitor should be installed as close to the power terminal as possible for best results.

12 Layout

12.1 Layout Guidelines

Reflections and matching are closely related to loop antenna theory, but different enough to warrant their own discussion. When a PCB trace turns a corner at a 90° angle, a reflection can occur. This is primarily due to the change of width of the trace. At the apex of the turn, the trace width is increased to 1.414 times its width. This upsets the transmission line characteristics, especially the distributed capacitance and self-inductance of the trace — resulting in the reflection.

Note

Not all PCB traces can be straight, and so they will have to turn corners. [Figure 12-1](#) shows progressively better techniques of rounding corners. Only the last example maintains constant trace width and minimizes reflections.

12.2 Layout Example

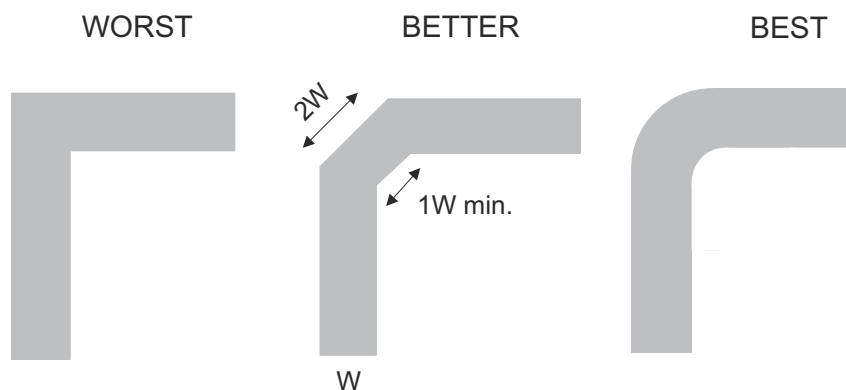


Figure 12-1. Trace Example

13 Device and Documentation Support

13.1 Documentation Support

13.1.1 Related Documentation

For related documentation, see the following:

- Texas Instruments, [SN74LVC2G66-Q1 Functional Safety, FIT Rate, Failure Mode Distribution and Pin FMA](#)

13.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on [ti.com](#). Click on *Subscribe to updates* 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.

13.3 Support Resources

[TI E2E™ support forums](#) are an engineer's go-to source for fast, verified answers and design help — straight from the experts. Search existing answers or ask your own question to get the quick design help you need.

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13.4 Trademarks

TI E2E™ is a trademark of Texas Instruments.

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13.5 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

13.6 Glossary

[TI Glossary](#) This glossary lists and explains terms, acronyms, and definitions.

14 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 part number	Status (1)	Material type (2)	Package Pins	Package qty Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
SN74LVC2G66QDCURQ1	Active	Production	VSSOP (DCU) 8	3000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 125	CAYR
SN74LVC2G66QDCURQ1.A	Active	Production	VSSOP (DCU) 8	3000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 125	CAYR
SN74LVC2G66QDCURQ1.B	Active	Production	VSSOP (DCU) 8	3000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 125	CAYR

⁽¹⁾ **Status:** For more details on status, see our [product life cycle](#).

⁽²⁾ **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

⁽³⁾ **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

⁽⁴⁾ **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

⁽⁵⁾ **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

⁽⁶⁾ **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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OTHER QUALIFIED VERSIONS OF SN74LVC2G66-Q1 :

- Catalog : [SN74LVC2G66](#)

NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product

TAPE AND REEL INFORMATION



*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
SN74LVC2G66QDCURQ1	VSSOP	DCU	8	3000	180.0	8.4	2.25	3.35	1.05	4.0	8.0	Q3

TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LVC2G66QDCURQ1	VSSOP	DCU	8	3000	202.0	201.0	28.0



4225266/A 09/2014

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.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
4. Reference JEDEC registration MO-187 variation CA.

EXAMPLE BOARD LAYOUT

DCU0008A

VSSOP - 0.9 mm max height

SMALL OUTLINE PACKAGE



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE: 25X



4225266/A 09/2014

NOTES: (continued)

5. Publication IPC-7351 may have alternate designs.

6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

EXAMPLE STENCIL DESIGN

DCU0008A

VSSOP - 0.9 mm max height

SMALL OUTLINE PACKAGE



SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL
SCALE: 25X

4225266/A 09/2014

NOTES: (continued)

7. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
8. Board assembly site may have different recommendations for stencil design.

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