

SN74LVC1G17-Q1 Single Schmitt-Trigger Buffer

1 Features

- Qualified for Automotive Applications
- Supports 5-V V_{CC} operation
- Inputs accept voltages to 5.5 V
- Max t_{pd} of 8 ns at 3.3 V
- Low power consumption, 20- μ A Max I_{CC}
- \pm 24-mA Output drive at 3.3 V
- I_{off} Supports live insertion, partial-power-down mode, and back-drive protection
- ESD protection exceeds JEDEC JS-001
 - 2000-V Human-body model
 - 1000-V Charged-device model

2 Applications

- AV receiver
- Audio dock: portable
- Blu-ray player and home theater
- MP3 player/recorder
- Personal digital assistant (PDA)
- Power: Telecom/server AC/DC supply: single controller: analog and digital
- Solid state drive (SSD): client and enterprise
- TV: LCD/Digital and high-definition (HDTV)
- Tablet: Enterprise
- Video analytics: server
- Wireless headset, keyboard, and mouse

3 Description

This single Schmitt-trigger buffer is designed for 1.65-V to 5.5-V V_{CC} operation.

The SN74LVC1G17-Q1 device contains one buffer and performs the Boolean function $Y = A$.

The CMOS device has high output drive while maintaining low static power dissipation over a broad V_{CC} operating range.

The SN74LVC1G17-Q1 is available in a variety of packages.

Device Information⁽¹⁾

| DEVICE NAME | PACKAGE | BODY SIZE (NOM) |
|----------------|------------|------------------|
| SN74LVC1G17-Q1 | SOT-23 (5) | 2.9 mm x 1.6 mm |
| | SC-70 (5) | 2.0 mm x 1.25 mm |
| | SON (6) | 1.45 mm x 1.0 mm |

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

Simplified Schematic



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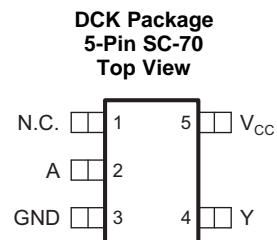
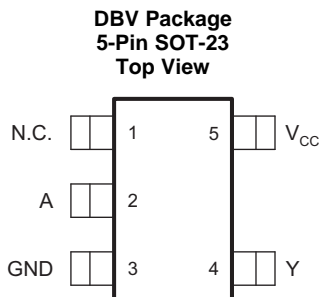
4 Revision History

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

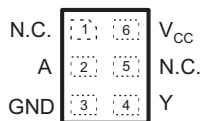
| Changes from Revision B (October 2019) to Revision C | Page |
|---|-------------|
| • Corrected clerical errors introduced in Revision B: Features included incorrect values | 1 |
| • Changed to automotive ESD table format | 4 |
| • Corrected clerical errors introduced in Revision B: Electrical Characteristics values returned to Revision A values | 6 |
| • Corrected clerical errors introduced in Revision B: Switching Characteristics values returned to Revision A values | 6 |
| • Deleted inaccurate typical characteristics plot for operation across temperature | 7 |
| • Deleted unnecessary parameter measurement information for 15 pF load (unused) | 8 |

| Changes from Revision A (April 2008) to Revision B | Page |
|---|-------------|
| • Added <i>Applications</i> | 1 |
| • Added <i>Device Information</i> table | 1 |
| • Removed Ordering Information table | 3 |
| • Added DRY package to graphic figures and Pin Functions table | 3 |
| • Added Pin Functions table | 3 |
| • Added ESD Ratings table | 4 |
| • Added Thermal Information table | 5 |
| • Added Typical Characteristics | 7 |
| • Added Detailed Description section | 9 |
| • Added Application and Implementation section | 10 |
| • Revised Image for Typical Application | 10 |
| • Added Power Supply Recommendations section | 11 |
| • Added Layout section | 11 |
| • Added <i>Device and Documentation Support</i> section | 12 |
| • Added <i>Mechanical, Packaging, and Orderable Information</i> section | 12 |

5 Pin Configuration and Functions



**DRY Package
6-Pin SON
Transparent Top View**



(1) N.C. - No internal connection

See mechanical drawings for at the end of the data sheet for dimensions

Pin Functions

| NAME | PIN | | DESCRIPTION |
|-----------------|----------|------|----------------|
| | DBV, DCK | DRY | |
| NC | 1 | 1, 5 | Not connected |
| A | 2 | 2 | Input |
| GND | 3 | 3 | Ground |
| Y | 4 | 4 | Output |
| V _{CC} | 5 | 6 | Power terminal |

6 Specifications

6.1 Absolute Maximum Ratings⁽¹⁾

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

| | | MIN | MAX | UNIT |
|-----------|---|-----------|----------------|------|
| V_{CC} | Supply voltage range | -0.5 | 6.5 | V |
| V_I | Input voltage range ⁽²⁾ | -0.5 | 6.5 | V |
| V_O | Voltage range applied to any output in the high-impedance or power-off state ⁽²⁾ | -0.5 | 6.5 | V |
| V_O | Voltage range applied to any output in the high or low state ⁽²⁾⁽³⁾ | -0.5 | $V_{CC} + 0.5$ | V |
| I_{IK} | Input clamp current | $V_I < 0$ | -50 | mA |
| I_{OK} | Output clamp current | $V_O < 0$ | -50 | mA |
| I_O | Continuous output current | | ±50 | mA |
| | Continuous current through V_{CC} or GND | | ±100 | mA |
| 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 only, and functional operation of the device at these or any other conditions beyond those indicated under
- (2) The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.
- (3) The value of V_{CC} is provided in the *Recommended Operating Conditions* table.

6.2 ESD Ratings

| | | | VALUE | UNIT |
|-------------|-------------------------|---|-------|------|
| $V_{(ESD)}$ | Electrostatic discharge | Human body model (HBM), per AEC Q100-002 ⁽¹⁾ HBM ESD Classification Level 2 | ±2000 | V |
| | | Charged device model (CDM), per AEC Q100-011 CDM ESD Classification Level C6 | ±1000 | |

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

6.3 Recommended Operating Conditions⁽¹⁾

| | | MIN | MAX | UNIT | |
|-------------------------|--------------------------------|--------------------------|-----------------|------|----|
| V _{CC} | Supply voltage | Operating | 1.65 | 5.5 | V |
| | | Data retention only | 1.5 | | |
| V _I | Input voltage | 0 | 5.5 | V | |
| V _O | Output voltage | 0 | V _{CC} | V | |
| I _{OH} | High-level output current | V _{CC} = 1.65 V | | –4 | mA |
| | | V _{CC} = 2.3 V | | –8 | |
| | | V _{CC} = 3 V | | –16 | |
| | | | | –24 | |
| V _{CC} = 4.5 V | | –32 | | | |
| I _{OL} | Low-level output current | V _{CC} = 1.65 V | | 4 | mA |
| | | V _{CC} = 2.3 V | | 8 | |
| | | V _{CC} = 3 V | | 16 | |
| | | | | 24 | |
| V _{CC} = 4.5 V | | 32 | | | |
| T _A | Operating free-air temperature | –40 | 125 | °C | |

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

6.4 Thermal Information

| THERMAL METRIC ⁽¹⁾ | | SN74LVC1G17-Q1 | | | UNIT |
|-------------------------------|--|----------------|--------|--------|------|
| | | DBV | DCK | DRY | |
| | | 5 PINS | 5 PINS | 6 PINS | |
| R _{θJA} | Junction-to-ambient thermal resistance | 229 | 280 | 608 | °C/W |
| R _{θJC(top)} | Junction-to-case (top) thermal resistance | 164 | 66 | 432 | °C/W |
| R _{θJB} | Junction-to-board thermal resistance | 62 | 67 | 446 | °C/W |
| ψ _{JT} | Junction-to-top characterization parameter | 44 | 2 | 191 | °C/W |
| ψ _{JB} | Junction-to-board characterization parameter | 62 | 66 | 442 | °C/W |
| R _{θJC(bot)} | Junction-to-case (bottom) thermal resistance | – | – | 198 | °C/W |

(1) For more information about traditional and new thermal metrics, see the *IC Package Thermal Metrics* application report, [SPRA953](#).

6.5 Electrical Characteristics—DC Limit Changes

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

| PARAMETER | | TEST CONDITIONS | V _{CC} | MIN | TYP | MAX | UNIT |
|---|--|-------------------------------|-----------------|-----------------------|-----|------|------|
| V _{T+} (Positive-going input threshold voltage) | | | 1.65 V | 0.64 | | 1.25 | V |
| | | | 2.3 V | 1 | | 1.68 | |
| | | | 3 V | 1.36 | | 2.04 | |
| | | | 4.5 V | 2.07 | | 2.86 | |
| | | | 5.5 V | 2.53 | | 3.43 | |
| V _{T-} (Negative-going input threshold voltage) | | | 1.65 V | 0.23 | | 0.71 | V |
| | | | 2.3 V | 0.44 | | 1.05 | |
| | | | 3 V | 0.77 | | 1.35 | |
| | | | 4.5 V | 1.22 | | 2.09 | |
| | | | 5.5 V | 1.73 | | 2.52 | |
| ΔV _T Hysteresis (V _{T+} – V _{T-}) | | | 1.65 V | 0.26 | | 0.74 | V |
| | | | 2.3 V | 0.33 | | 0.92 | |
| | | | 3 V | 0.4 | | 0.99 | |
| | | | 4.5 V | 0.45 | | 1.28 | |
| | | | 5.5 V | 0.56 | | 1.32 | |
| V _{OH} | I _{OH} = –100 μA | | 1.65 V to 5.5 V | V _{CC} – 0.1 | | | V |
| | I _{OH} = –4 mA | | 1.65 V | 1.2 | | | |
| | I _{OH} = –8 mA | | 2.3 V | 1.9 | | | |
| | I _{OH} = –16 mA | | 3 V | 2.4 | | | |
| | I _{OH} = –24 mA | | | 2.3 | | | |
| | I _{OH} = –32 mA | | 4.5 V | 3.8 | | | |
| V _{OL} | I _{OL} = 100 μA | | 1.65 V to 5.5 V | | | 0.1 | V |
| | I _{OL} = 4 mA | | 1.65 V | | | 0.45 | |
| | I _{OL} = 8 mA | | 2.3 V | | | 0.4 | |
| | I _{OL} = 16 mA | | 3 V | | | 0.5 | |
| | I _{OL} = 24 mA | | | | | 0.7 | |
| | I _{OL} = 32 mA | | 4.5 V | | | 0.7 | |
| I _I | A input | V _I = 5.5 V or GND | 0 to 5.5 V | | | ±10 | μA |
| I _{off} | V _I or V _O = 5.5 V | | 0 | | | ±25 | μA |
| I _{CC} | V _I = 5.5 V or GND, I _O = 0 | | 1.65 V to 5.5 V | | | 20 | μA |
| ΔI _{CC} | One input at V _{CC} – 0.6 V, Other inputs at V _{CC} or GND | | 3 V to 5.5 V | | | 500 | μA |
| C _I | V _I = V _{CC} or GND | | 3.3 V | 4.5 | | | pF |

6.6 Switching Characteristics AC Limit

 over recommended operating free-air temperature range, C_L = 30 pF or 50 pF (unless otherwise noted) (see Figure 2)

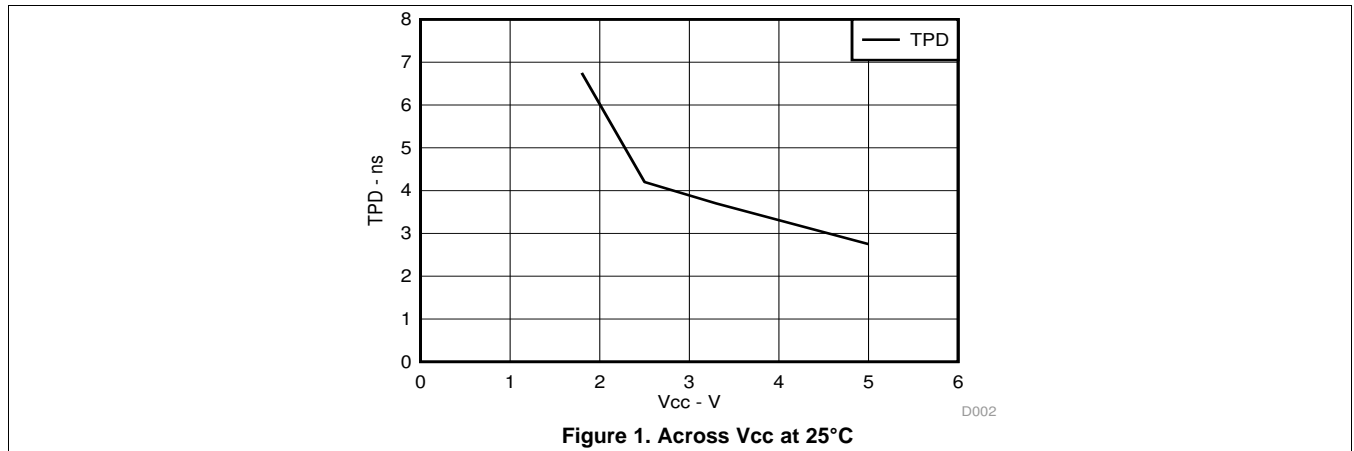
| PARAMETER | FROM (INPUT) | TO (OUTPUT) | –40°C TO 125°C | | | | | | | | UNIT |
|-----------------|--------------|-------------|----------------------------------|-----|---------------------------------|-----|---------------------------------|-----|-------------------------------|-----|------|
| | | | V _{CC} = 1.8 V ± 0.15 V | | V _{CC} = 2.5 V ± 0.2 V | | V _{CC} = 3.3 V ± 0.3 V | | V _{CC} = 5 V ± 0.5 V | | |
| | | | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | |
| t _{pd} | A | Y | 2.8 | 14 | 1 | 9 | 1.5 | 8 | 0.7 | 7 | ns |

6.7 Operating Characteristics

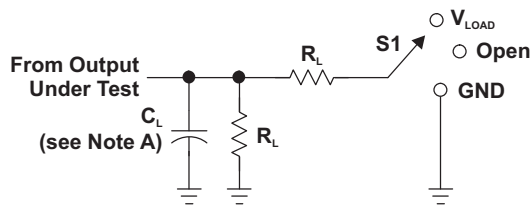
T_A = 25°C

| PARAMETER | TEST CONDITIONS | V _{CC} = 1.8 V | V _{CC} = 2.5 V | V _{CC} = 3.3 V | V _{CC} = 5 V | UNIT |
|---|-----------------|-------------------------|-------------------------|-------------------------|-----------------------|------|
| | | TYP | TYP | TYP | TYP | |
| C _{pd} Power dissipation capacitance | f = 10 MHz | 20 | 21 | 22 | 26 | pF |

6.8 Typical Characteristics

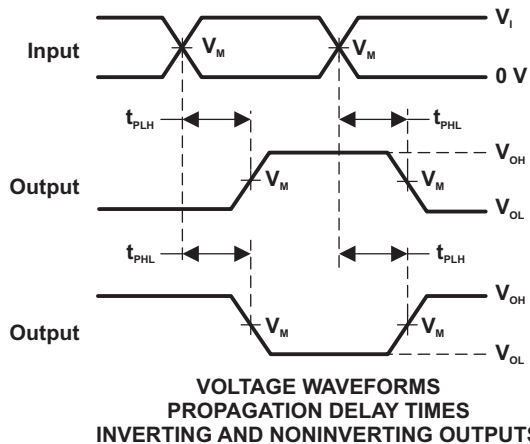
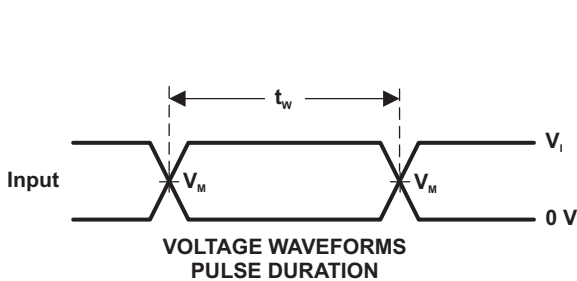


7 Parameter Measurement Information


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_Δ |
|----------------------------------|----------|----------------------|------------|-------------------|-------|--------------|------------|
| | 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 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 |
| $3.3\text{ V} \pm 0.3\text{ V}$ | 3 V | $\leq 2.5\text{ ns}$ | 1.5 V | 6 V | 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:
- A. C_L includes probe and jig capacitance.
 - B. 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.
 - C. All input pulses are supplied by generators having the following characteristics: $PRR \leq 10\text{ MHz}$, $Z_o = 50\ \Omega$.
 - D. The outputs are measured one at a time, with one transition per measurement.
 - E. t_{PLZ} and t_{PHZ} are the same as t_{dis} .
 - F. t_{PZL} and t_{PZH} are the same as t_{en} .
 - G. t_{PLH} and t_{PHL} are the same as t_{pd} .
 - H. All parameters and waveforms are not applicable to all devices.

Figure 2. Load Circuit and Voltage Waveforms

8 Detailed Description

8.1 Overview

The SN74LVC1G17-Q1 device contains one Schmitt trigger buffer and performs the Boolean function $Y = A$. The device functions as an independent buffer, but because of Schmitt action, it will have different input threshold levels for a positive-going (V_{T+}) and negative-going (V_{T-}) signals.

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.

8.2 Functional Block Diagram



8.3 Feature Description

- Wide operating voltage range.
 - Operates From 1.65 V to 5.5 V.
- Allows Down voltage translation.
- Inputs accept voltages to 5.5 V.
- I_{off} feature allows voltages on the inputs and outputs, when V_{CC} is 0 V.

8.4 Device Functional Modes

Table 1. Function Table

| INPUT A | OUTPUT Y |
|------------|-------------|
| H | H |
| L | L |

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 SN74LVC1G17-Q1 is a high-drive CMOS device that can be used for a multitude of buffer type functions where the input is slow or noisy. 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

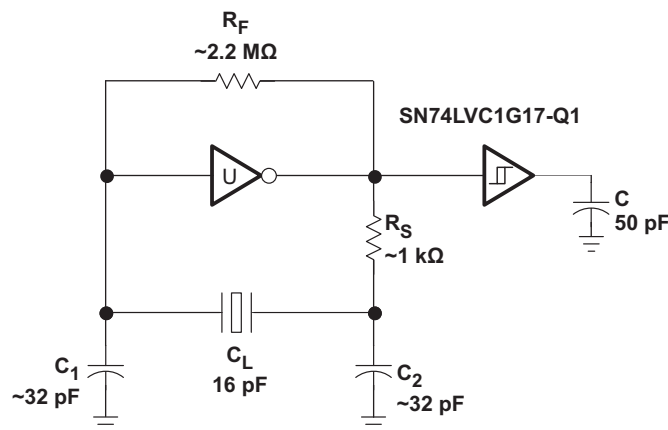


Figure 3. SN74LVC1G17-Q1 Typical Application

9.2.1 Design Requirements

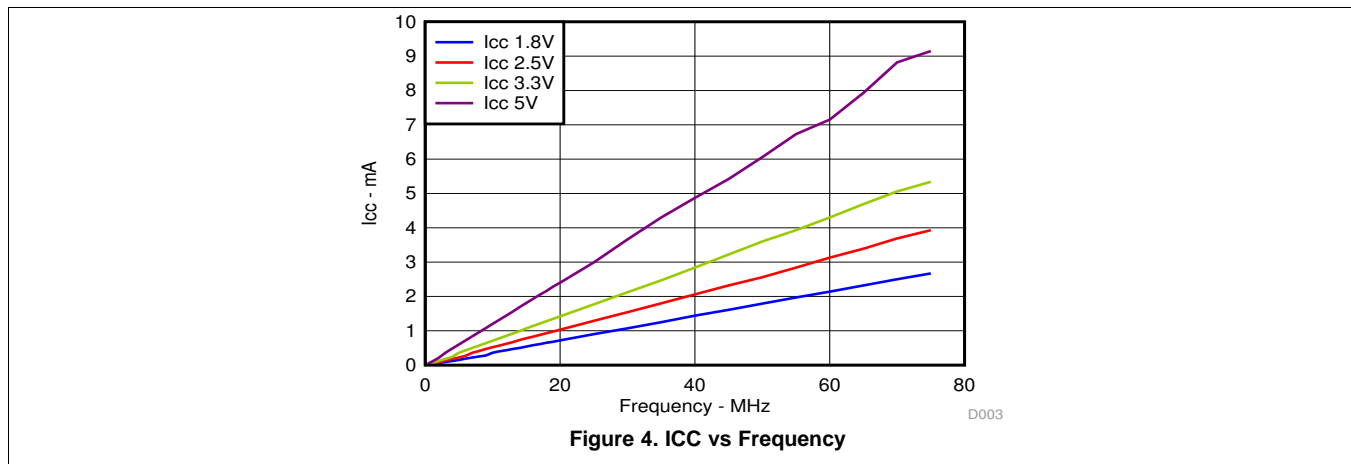
This device uses CMOS technology and has balanced output drive. Care should be taken to avoid bus contention because it can drive currents that would exceed maximum limits. The high drive will also create fast edges into light loads so routing and load conditions should be considered to prevent ringing.

9.2.2 Detailed Design Procedure

1. Recommended Input Conditions
 - Rise time and fall time specs. See $(\Delta t/\Delta V)$ in the [Recommended Operating Conditions](#) table.
 - 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 $(V_I \text{ max})$ in the [Recommended Operating Conditions](#) table at any valid V_{CC} .
2. Recommend Output Conditions
 - Load currents should not exceed $(I_O \text{ max})$ per output and should not exceed (continuous current through V_{CC} or GND) total current for the part. These limits are located in the [Absolute Max Ratings](#) table.
 - Outputs should not be pulled above V_{CC} .

Typical Application (continued)

9.2.3 Application Curves



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.

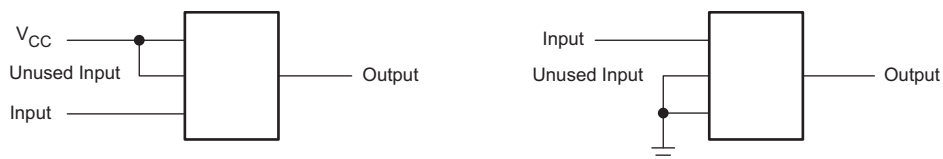
Each Vcc pin should have a good bypass capacitor to prevent power disturbance. For devices with a single supply a 0.1- μ F capacitor is recommended and if there are multiple Vcc pins then a 0.01- μ F or 0.022- μ F capacitor is recommended for each power pin. It is ok to parallel multiple bypass caps to reject different frequencies of noise. 0.1- μ F and 1- μ F capacitors are commonly used in parallel. The bypass capacitor should be installed as close to the power pin as possible for best results.

11 Layout

11.1 Layout Guidelines

When using multiple bit logic devices inputs should not ever float. In many cases, functions or parts of functions of digital logic devices are unused, for example, when only two inputs of a triple-input AND gate are used or only 3 of the 4 buffer gates are used. Such input terminals should not be left unconnected because the undefined voltages at the outside connections result in undefined operational states. Specified below are the 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 Vcc whichever make more sense or is more convenient.

11.2 Layout Example



12 Device and Documentation Support

12.1 Trademarks

All trademarks are the property of their respective owners.

12.2 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.

12.3 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 finish/ Ball material (6) | MSL Peak Temp (3) | Op Temp (°C) | Device Marking (4/5) | Samples |
|--------------------|---------------|--------------|-----------------|------|-------------|-----------------|--------------------------------------|----------------------|--------------|-------------------------|-------------------------|
| SN74LVC1G17QDBVRQ1 | ACTIVE | SOT-23 | DBV | 5 | 3000 | RoHS & Green | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | C17O | Samples |
| SN74LVC1G17QDCKRQ1 | ACTIVE | SC70 | DCK | 5 | 3000 | RoHS & Green | NIPDAU SN | Level-1-260C-UNLIM | -40 to 125 | (C7J, C7O) | Samples |
| SN74LVC1G17QDRYRQ1 | ACTIVE | SON | DRY | 6 | 5000 | RoHS & Green | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | HM | Samples |

(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) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(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.

(6) Lead finish/Ball material - Orderable Devices 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.

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OTHER QUALIFIED VERSIONS OF SN74LVC1G17-Q1 :

- Catalog : [SN74LVC1G17](#)
- Enhanced Product : [SN74LVC1G17-EP](#)

NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product
- 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 |
|--------------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74LVC1G17QDBVRQ1 | SOT-23 | DBV | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| SN74LVC1G17QDCKRQ1 | SC70 | DCK | 5 | 3000 | 178.0 | 9.0 | 2.4 | 2.5 | 1.2 | 4.0 | 8.0 | Q3 |
| SN74LVC1G17QDCKRQ1 | SC70 | DCK | 5 | 3000 | 179.0 | 8.4 | 2.2 | 2.5 | 1.2 | 4.0 | 8.0 | Q3 |
| SN74LVC1G17QDRYRQ1 | SON | DRY | 6 | 5000 | 180.0 | 9.5 | 1.2 | 1.65 | 0.7 | 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) |
|--------------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74LVC1G17QDBVRQ1 | SOT-23 | DBV | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| SN74LVC1G17QDCKRQ1 | SC70 | DCK | 5 | 3000 | 190.0 | 190.0 | 30.0 |
| SN74LVC1G17QDCKRQ1 | SC70 | DCK | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| SN74LVC1G17QDRYRQ1 | SON | DRY | 6 | 5000 | 189.0 | 185.0 | 36.0 |

DCK (R-PDSO-G5)

PLASTIC SMALL-OUTLINE PACKAGE



- 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-203 variation AA.

DCK (R-PDSO-G5)

PLASTIC SMALL OUTLINE



- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - Customers should place a note on the circuit board fabrication drawing not to alter the center solder mask defined pad.
 - Publication IPC-7351 is recommended for alternate designs.
 - 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. Example stencil design based on a 50% volumetric metal load solder paste. Refer to IPC-7525 for other stencil recommendations.

GENERIC PACKAGE VIEW

DRY 6

USON - 0.6 mm max height

PLASTIC SMALL OUTLINE - NO LEAD



Images above are just a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

4207181/G

EXAMPLE BOARD LAYOUT

DRY0006A

USON - 0.6 mm max height

PLASTIC SMALL OUTLINE - NO LEAD



LAND PATTERN EXAMPLE
1:1 RATIO WITH PKG SOLDER PADS
EXPOSED METAL SHOWN
SCALE:40X



SOLDER MASK DETAILS

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NOTES: (continued)

3. For more information, see QFN/SON PCB application report in literature No. SLUA271 (www.ti.com/lit/slue271).

EXAMPLE STENCIL DESIGN

DRY0006A

USON - 0.6 mm max height

PLASTIC SMALL OUTLINE - NO LEAD



SOLDER PASTE EXAMPLE
BASED ON 0.075 - 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. IPC-7525 may have alternate design recommendations.

EXAMPLE BOARD LAYOUT

DBV0005A

SOT-23 - 1.45 mm max height

SMALL OUTLINE TRANSISTOR



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:15X



SOLDER MASK DETAILS

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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

DBV0005A

SOT-23 - 1.45 mm max height

SMALL OUTLINE TRANSISTOR



SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL
SCALE:15X

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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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