

## SINGLE SCHMITT-TRIGGER BUFFER

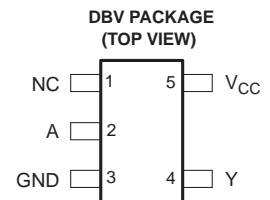
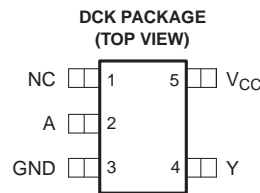
### FEATURES

- **Controlled Baseline**
  - One Assembly/Test Site, One Fabrication Site
- **Extended Temperature Performance of –55°C to 125°C**
- **Enhanced Diminishing Manufacturing Sources (DMS) Support**
- **Qualification Pedigree<sup>(1)</sup>**
- **Supports 5-V  $V_{CC}$  Operation**
- **Max tpd of 4.6 ns at 3.3 V**
- **Low Power Consumption, 10  $\mu$ A Max  $I_{CC}$**
- **$\pm$ 24 mA Output Drive at 3.3 V**
- **$I_{off}$  Supports Partial Power Down Mode Operation**
- **Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II**

- **ESD Protection Exceeds JEDEC 22**

- **2000-V Human-Body Model (A114-A)**
- **200-V Machine Model (A115-A)**
- **1000-V Charged-Device Model (C101)**

- (1) Component qualification in accordance with JEDEC and industry standards to ensure reliable operation over an extended temperature range. This includes, but is not limited to, Highly Accelerated Stress Test (HAST) or biased 85/85, temperature cycle, autoclave or unbiased HAST, electromigration, bond intermetallic life, and mold compound life. Such qualification testing should not be viewed as justifying use of this component beyond specified performance and environmental limits.



### DESCRIPTION/ORDERING INFORMATION

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

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

NanoStar™ and NanoFree™ package technology is a major breakthrough in IC packaging concepts, using the die as the package.

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.

### ORDERING INFORMATION<sup>(1)</sup>

| $T_A$          | PACKAGE <sup>(2)</sup> |              | ORDERABLE PART NUMBER | TOP-SIDE MARKING |
|----------------|------------------------|--------------|-----------------------|------------------|
| –55°C to 125°C | SOT (SC-70) - DCK      | Reel of 3000 | SN74LVC1G17MDCKREP    | C70              |
|                | SOP (SOT-23) - DBV     | Reel of 3000 | SN74LVC1G17MDBVREP    | C170             |

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI website at [www.ti.com](http://www.ti.com).

(2) Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at [www.ti.com/sc/package](http://www.ti.com/sc/package).

### FUNCTION TABLE

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



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

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## LOGIC DIAGRAM (POSITIVE LOGIC)



## ABSOLUTE MAXIMUM RATINGS

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

|  | VALUE   | UNIT                          |
|--|---|-------------------------------|
| V <sub>CC</sub> Supply voltage range                                   | –0.5 to 6.5   | V                             |
| V <sub>I</sub> Input voltage range <sup>(2)</sup>                      | –0.5 to 6.5   | V                             |
| V <sub>O</sub>   | Voltage range applied to any output in the high-impedance or power-off state    | –0.5 to 6.5                   |
|  | Voltage range applied to any output in the high or low state <sup>(2) (3)</sup> | –0.5 to V <sub>CC</sub> + 0.5 |
| 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                           |
|  | Continuous current through V <sub>CC</sub> or GND                               | ±100                          |
| θ <sub>JA</sub> Package thermal impedance <sup>(4)</sup> : DCK package | 252   | °C/W                          |
| T <sub>stg</sub> Storage temperature range                             | –65 to 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 and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.

(3) The value of V<sub>CC</sub> is provided in the recommended operating conditions table.

(4) The package thermal impedance is calculated in accordance with JESD 51-7.

RECOMMENDED OPERATING CONDITIONS<sup>(1)</sup>

|   |                          | MAX  | MAX             | UNIT |
|---|--------------------------|------|-----------------|------|
| V <sub>CC</sub> Supply voltage                | Operating                | 1.65 | 5.5             | V    |
|   | Data retention only      | 1.5  |                 |      |
| V <sub>I</sub> Input voltage                  |                          | 0    | 5.5             | V    |
| V <sub>O</sub> Output voltage                 |                          | 0    | V <sub>CC</sub> | V    |
| I <sub>OH</sub> High                          | 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             |      |
| 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   |                 |      |
|   |                          |      |                 |      |
| T <sub>A</sub> Operating free-air temperature |                          | –55  | 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 the TI application report, *Implications of Slow or Floating CMOS Inputs (SCBA004)*.

**ELECTRICAL CHARACTERISTICS**

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

| PARAMETER  | TEST CONDITIONS  | V <sub>CC</sub> | MIN                   | TYP <sup>(1)</sup> | MAX  | UNIT |
|--|--|-----------------|-----------------------|--------------------|------|------|
| V <sub>T+</sub> Positive-going input threshold voltage             |  | 1.65 V to 4.5 V | 0.76                  |                    | 1.13 | V    |
|  |  | 2.3 V           | 1.08                  |                    | 1.56 |      |
|  |  | 3 V             | 1.48                  |                    | 1.92 |      |
|  |  | 4.5 V           | 2.19                  |                    | 2.74 |      |
|  |  | 5.5 V           | 2.65                  |                    | 3.33 |      |
| V <sub>T-</sub> Negative-going input threshold voltage             |  | 1.65 V to 4.5 V | 0.35                  |                    | 0.59 | V    |
|  |  | 2.3 V           | 0.56                  |                    | 0.88 |      |
|  |  | 3 V             | 0.89                  |                    | 1.2  |      |
|  |  | 4.5 V           | 1.51                  |                    | 1.97 |      |
|  |  | 5.5 V           | 1.88                  |                    | 2.4  |      |
| ΔV <sub>hyst</sub> Hysteresis (V <sub>T+</sub> - V <sub>T-</sub> ) |  | 1.65 V to 4.5 V | 0.36                  |                    | 0.64 | V    |
|  |  | 2.3 V           | 0.45                  |                    | 0.78 |      |
|  |  | 3 V             | 0.51                  |                    | 0.83 |      |
|  |  | 4.5 V           | 0.58                  |                    | 0.93 |      |
|  |  | 5.5 V           | 0.69                  |                    | 1.04 |      |
| V <sub>OH</sub>  | I <sub>OH</sub> = -100 mA  | 1.65 V to 4.5 V | V <sub>CC</sub> - 0.1 |                    |      | V    |
|  | I <sub>OH</sub> = -4 mA  | 1.65 V          | 1.2                   |                    |      |      |
|  | I <sub>OH</sub> = -8 mA  | 2.3 V           | 1.9                   |                    |      |      |
|  | I <sub>OH</sub> = -16 mA   | 3 V             | 2.4                   |                    |      |      |
|  | I <sub>OH</sub> = -24 mA   |                 | 2.3                   |                    |      |      |
|  | I <sub>OH</sub> = -32 mA   | 4.5 V           | 3.8                   |                    |      |      |
| V <sub>OL</sub>  | I <sub>OL</sub> = 100 mA   | 1.65 V to 4.5 V |                       |                    | 0.1  | V    |
|  | I <sub>OL</sub> = 4 mA   | 1.65 V          |                       |                    | 0.45 |      |
|  | I <sub>OL</sub> = 8 mA   | 2.3 V           |                       |                    | 0.3  |      |
|  | I <sub>OL</sub> = 16 mA  | 3 V             |                       |                    | 0.4  |      |
|  | I <sub>OL</sub> = 24 mA  |                 |                       |                    | 0.55 |      |
|  | I <sub>OL</sub> = 32 mA  | 4.5 V           |                       |                    | 0.55 |      |
| I <sub>I</sub> A input   | V <sub>I</sub> = 5.5 V or GND  | 0 to 5.5 V      |                       |                    | ±5   | μA   |
| I <sub>off</sub>   | V <sub>I</sub> or V <sub>O</sub> = 5.5 V                                     | 0               |                       |                    | ±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   | 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  | μA   |
| C <sub>i</sub>   | V <sub>I</sub> = V <sub>CC</sub> or GND                                      | 3.3 V           |                       |                    | 4.5  | pF   |

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

**SWITCHING CHARACTERISTICS**

over recommended operating free-air temperature range,  $C_L = 15 \text{ pF}$  (unless otherwise noted) (see [Figure 1](#))

| 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 |      |
| $t_{pd}$  | A            | Y           | 2.8   | 9.9 | 1.6  | 5.5 | 1.5  | 4.6 | 0.9                                      | 4.4 | ns   |

**SWITCHING CHARACTERISTICS**

over recommended operating free-air temperature range,  $C_L = 30 \text{ pF}$  or  $50 \text{ pF}$  (unless otherwise noted) (see [Figure 2](#))

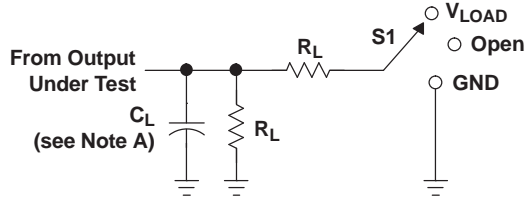
| PARAMETER | FROM (INPUT) | TO (OUTPUT) | $V_{CC} = 1.8 \text{ V} \pm 0.15 \text{ V}$ |     | $V_{CC} = 2.5 \text{ V} \pm 0.2 \text{ V}$ |     | $V_{CC} = 3.3 \text{ V} \pm 0.3 \text{ V}$ |     | $V_{CC} = 5 \text{ V} \pm 0.5 \text{ V}$ |     | UNIT |
|-----------|--------------|-------------|---|-----|--|-----|--|-----|--|-----|------|
|           |              |             | MIN   | MAX | MIN  | MAX | MIN  | MAX | MIN                                      | MAX |      |
| $t_{pd}$  | A            | Y           | 3.8   | 11  | 2  | 6.5 | 1.8  | 5.5 | 1.2                                      | 5   | ns   |

**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 dissipaton capacitance | $f = 10 \text{ MHz}$ | 20                       | 21                       | 22                       | 26                     |      |

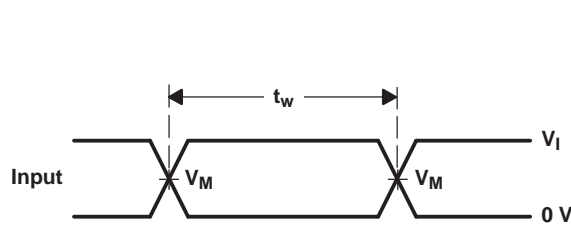
PARAMETER MEASUREMENT INFORMATION



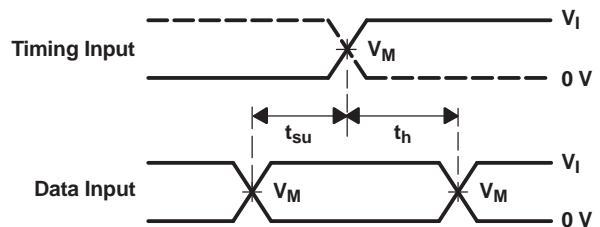
LOAD CIRCUIT

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

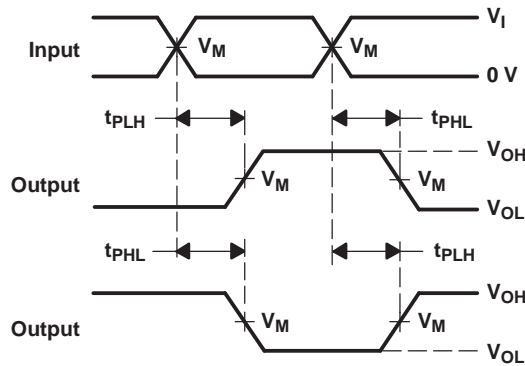
| $V_{CC}$                         | INPUTS   |                      | $V_M$      | $V_{LOAD}$        | $C_L$ | $R_L$        | $V_{\Delta}$ |
|----------------------------------|----------|----------------------|------------|-------------------|-------|--------------|--------------|
|                                  | $V_I$    | $t_r/t_f$            |            |                   |       |              |              |
| $1.8\text{ V} \pm 0.15\text{ V}$ | $V_{CC}$ | $\leq 2\text{ ns}$   | $V_{CC}/2$ | $2 \times V_{CC}$ | 15 pF | 1 M $\Omega$ | 0.15 V       |
| $2.5\text{ V} \pm 0.2\text{ V}$  | $V_{CC}$ | $\leq 2\text{ ns}$   | $V_{CC}/2$ | $2 \times V_{CC}$ | 15 pF | 1 M $\Omega$ | 0.15 V       |
| $3.3\text{ V} \pm 0.3\text{ V}$  | 3 V      | $\leq 2.5\text{ ns}$ | 1.5 V      | 6 V               | 15 pF | 1 M $\Omega$ | 0.3 V        |
| $5\text{ V} \pm 0.5\text{ V}$    | $V_{CC}$ | $\leq 2.5\text{ ns}$ | $V_{CC}/2$ | $2 \times V_{CC}$ | 15 pF | 1 M $\Omega$ | 0.3 V        |



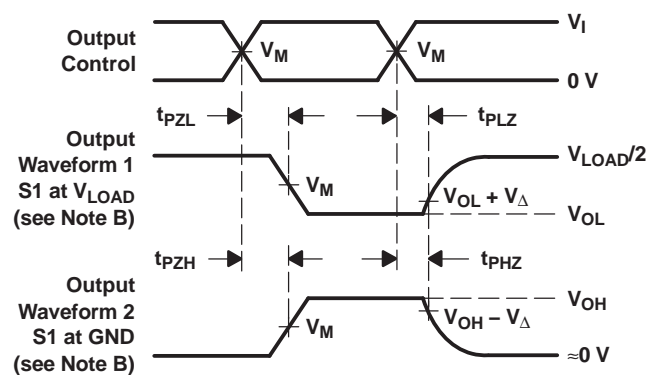
VOLTAGE WAVEFORMS  
PULSE DURATION



VOLTAGE WAVEFORMS  
SETUP AND HOLD TIMES



VOLTAGE WAVEFORMS  
PROPAGATION DELAY TIMES  
INVERTING AND NONINVERTING OUTPUTS

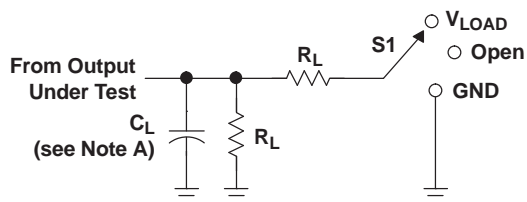


VOLTAGE WAVEFORMS  
ENABLE AND DISABLE TIMES  
LOW- AND HIGH-LEVEL ENABLING

- NOTES:
- 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 1. Load Circuit and Voltage Waveforms

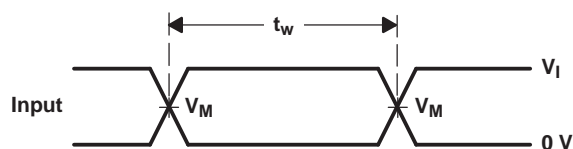
PARAMETER MEASUREMENT INFORMATION (continued)



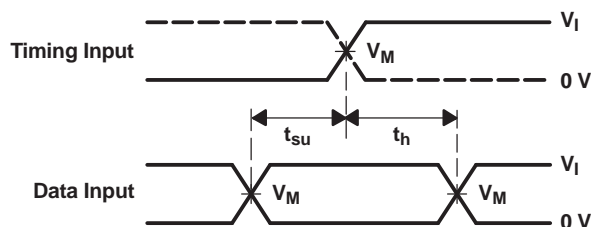
LOAD CIRCUIT

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

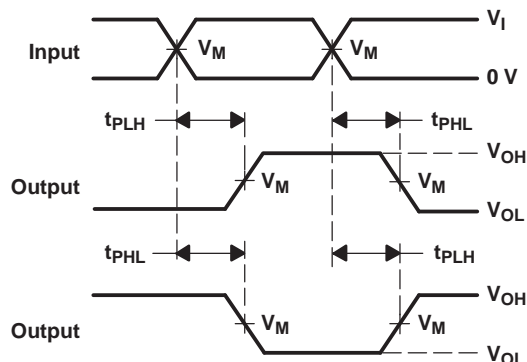
| $V_{CC}$                         | INPUTS   |                      | $V_M$      | $V_{LOAD}$        | $C_L$ | $R_L$        | $V_{\Delta}$ |
|----------------------------------|----------|----------------------|------------|-------------------|-------|--------------|--------------|
|                                  | $V_I$    | $t_r/t_f$            |            |                   |       |              |              |
| $1.8\text{ V} \pm 0.15\text{ V}$ | $V_{CC}$ | $\leq 2\text{ ns}$   | $V_{CC}/2$ | $2 \times V_{CC}$ | 30 pF | 1 k $\Omega$ | 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        |



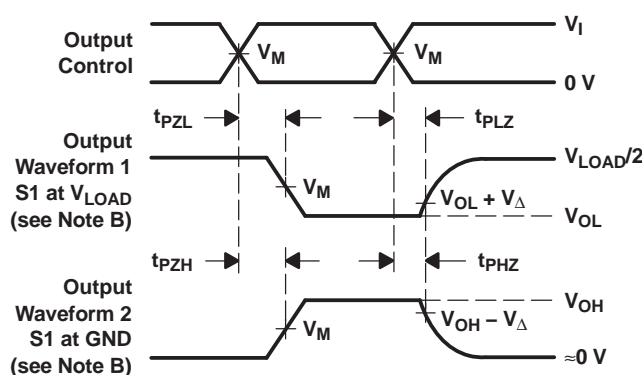
VOLTAGE WAVEFORMS  
PULSE DURATION



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: A.  $C_L$  includes probe and jig capacitance.  
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 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

## PACKAGING INFORMATION

| Orderable part number              | Status<br>(1) | Material type<br>(2) | Package   Pins   | Package qty   Carrier | RoHS<br>(3) | Lead finish/<br>Ball material<br>(4) | MSL rating/<br>Peak reflow<br>(5) | Op temp (°C) | Part marking<br>(6) |
|------------------------------------|---------------|----------------------|------------------|-----------------------|-------------|--------------------------------------|-----------------------------------|--------------|---------------------|
| <a href="#">SN74LVC1G17MDBVREP</a> | Active        | Production           | SOT-23 (DBV)   5 | 3000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | C170                |
| <a href="#">SN74LVC1G17MDCKREP</a> | Active        | Production           | SC70 (DCK)   5   | 3000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | C70                 |
| <a href="#">V62/06621-01XE</a>     | Active        | Production           | SOT-23 (DBV)   5 | 3000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | C170                |
| <a href="#">V62/06621-01YE</a>     | Active        | Production           | SC70 (DCK)   5   | 3000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | C70                 |

(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 SN74LVC1G17-EP :**

- Catalog : [SN74LVC1G17](#)
- Automotive : [SN74LVC1G17-Q1](#)

NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product
- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects



## 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 |
|--------------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74LVC1G17MDBVREP | SOT-23       | DBV             | 5    | 3000 | 179.0              | 8.4                | 3.2     | 3.2     | 1.4     | 4.0     | 8.0    | Q3            |
| SN74LVC1G17MDCKREP | SC70         | DCK             | 5    | 3000 | 179.0              | 8.4                | 2.2     | 2.5     | 1.2     | 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) |
|--------------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74LVC1G17MDBVREP | SOT-23       | DBV             | 5    | 3000 | 200.0       | 183.0      | 25.0        |
| SN74LVC1G17MDCKREP | SC70         | DCK             | 5    | 3000 | 200.0       | 183.0      | 25.0        |

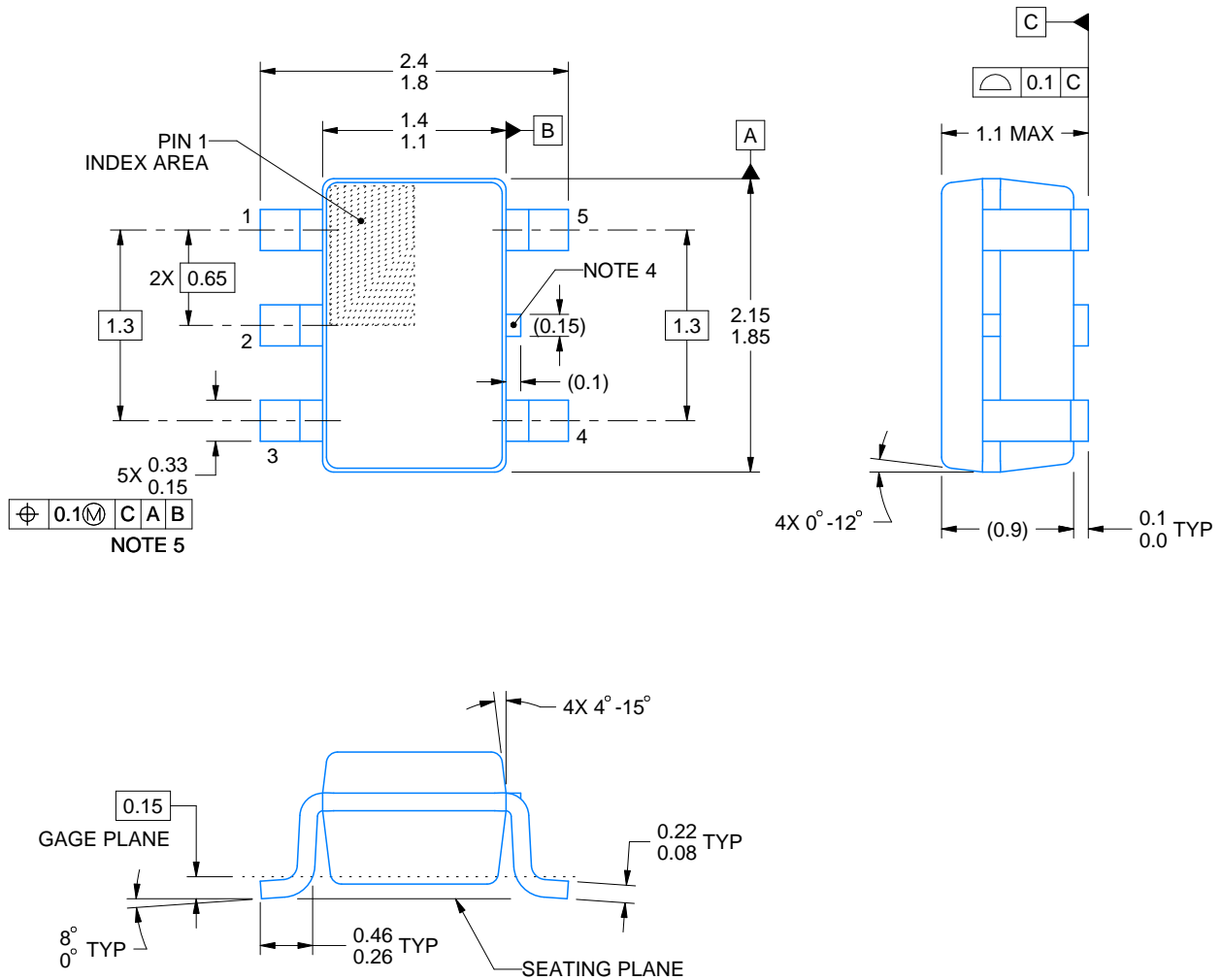
# DCK0005A



## PACKAGE OUTLINE

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



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### 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. Reference JEDEC MO-203.
4. Support pin may differ or may not be present.
5. Lead width does not comply with JEDEC.
6. Body dimensions do not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.25mm per side

# EXAMPLE BOARD LAYOUT

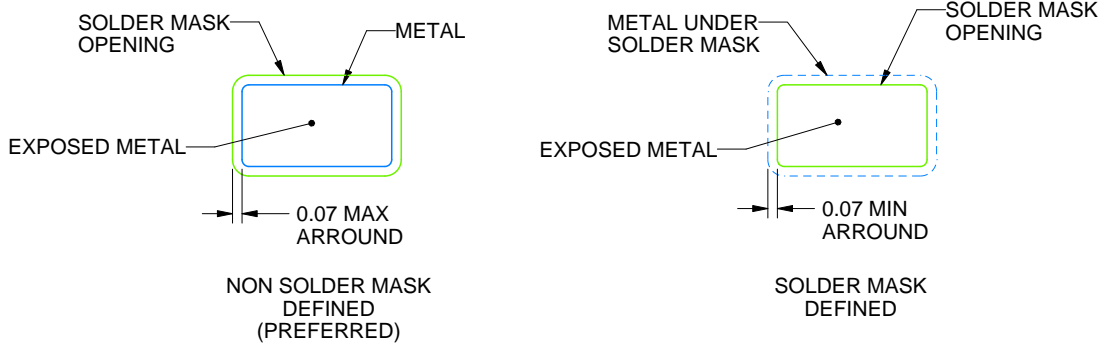
DCK0005A

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE:18X



SOLDER MASK DETAILS

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NOTES: (continued)

- 7. Publication IPC-7351 may have alternate designs.
- 8. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

# EXAMPLE STENCIL DESIGN

DCK0005A

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



SOLDER PASTE EXAMPLE  
BASED ON 0.125 THICK STENCIL  
SCALE:18X

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NOTES: (continued)

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

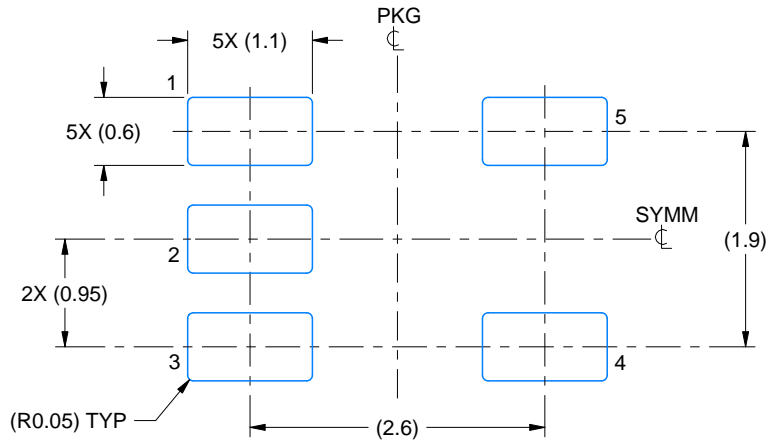


# EXAMPLE BOARD LAYOUT

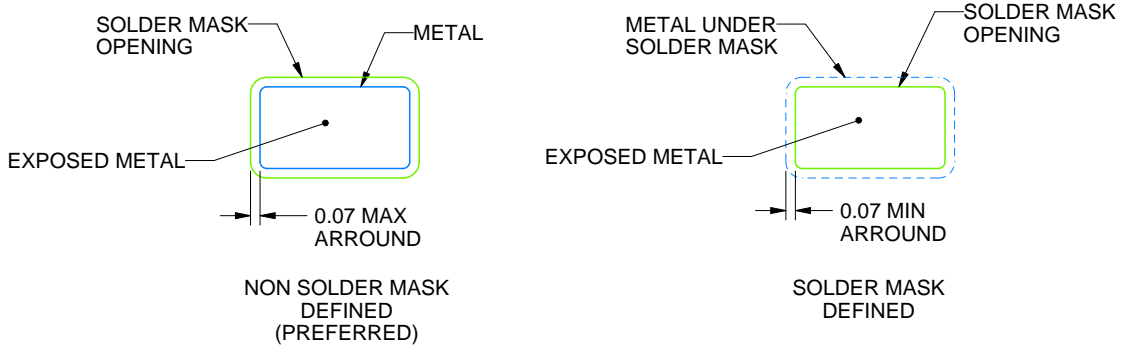
DBV0005A

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)

- 6. Publication IPC-7351 may have alternate designs.
- 7. 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)

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



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