## Description

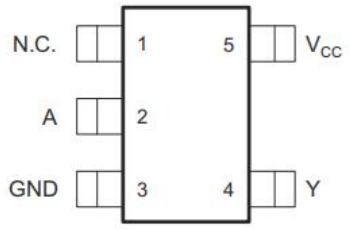
This single buffer/driver is designed for 1.65-V to 5.5-V VCC operation.

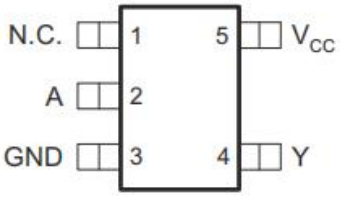
The output of the SN74LVC1G07xxxx device is open drain and can be connected to other open-drain outputs to implement active-low wired-OR or active high wired-AND functions. The maximum sink current is 32 mA.

## Features

- Supports 5-V VCC Operation
- Input and Open-Drain Output Accept Voltages upto 5.5 V
- Can Translate Up or Down
- Low Power Consumption, 10-μA Max ICC
- ±24-mA Output Drive at 3.3 V
- Ioff Supports Live Insertion, Partial-Power Down Mode, and Back-Drive Protection

## Connection Diagrams and Pin Description

| PIN DESCRIPTION | MARKING |
|---|---|
|  SOT23-5 |  |

| PIN DESCRIPTION | MARKING |
|---|---|
|  SC70-5 |  |

| PIN No. DBV/DCK | NAME | I/O | FUNCTION |
|---|---|---|---|
| 1 | NC | | No Connected |
| 2 | A | I | Input |
| 3 | GND | | Ground |
| 4 | Y | O | Output |
| 5 | VCC | | Supply Voltage |

## ORDER INFORMATION

| ORDERING NUMBER | PACKAGE | PACKING OPTION |
|---|---|---|
| SN74LVC1G07DBVR | SOT23-5 | 3000PCS |
| SN74LVC1G07DCKR | SC70-5 | 3000PCS |

## Logic Diagram

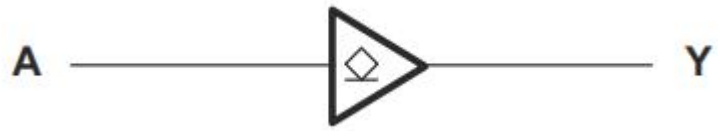



Figure 3.1：SN74LVC1G07 Logic Diagram

## Function Table

| Input | Output |
|---|---|
| A | Y |
| 1 | Z |
| 0 | 0 |

X = don’t care, 1≡High State, 0≡Low State,Z=High Impedance

## Absolute Maximum Ratings

| Symbol | Parameter | MIN | MAX | Unit |
|---|---|---|---|---|
| $V_{CC}$ | Supply Voltage | -0.5 | 6.5 | V |
| $V_I$ | Input Voltage Range | -0.5 | 6.5 | V |
| $V_O$ | Voltage Range(applied to any output in the high-impedance or power-off state)(1) | -0.5 | 6.5 | V |
| | Voltage Range(applied to any output in the high or low state) | -0.5 | VCC + 0.5 | V |
| $I_O$ | Continuous Output Current | | ±50 | mA |
| $T_J$ | Junction Temperature | | 125 | ℃ |
| $T_{OP}$ | Operating Temperature | 0 | 70 | ℃ |

Absolute maximum ratings are those values beyond which the device could be permanently damaged,These are stress ratings only,which do not imply functional operation of the device at these or any other conditions beyond those indicated under normal operating conditions.

(1) The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.

## Electrical Characteristics

### DC Specifications

($T_a$=25℃ , voltages are referenced to GND (ground=0V), unless otherwise specified)

| Symbol | Parameter | Test Condition | MIN | TYP | MAX | Unit |
|---|---|---|---|---|---|---|
| $V_{IH}$ | High Level Input Voltage | $V_{CC}$=1.65V to 1.95V | 0.65$V_{CC}$ | -- | -- | V |
| | | $V_{CC}$=2.3V to 2.7V | 1.7 | -- | -- | V |
| | | $V_{CC}$=3V to 5.5V | 0.7$V_{CC}$ | -- | -- | V |
| $V_{IL}$ | Low Level Input Voltage | $V_{CC}$=1.65V to 1.95V | -- | -- | 0.35$V_{CC}$ | V |
| | | $V_{CC}$=2.3V to 2.7V | -- | -- | 0.7 | V |
| | | $V_{CC}$=3V to 3.6V | -- | -- | 0.8 | V |
| | | $V_{CC}$=4.5V to 5.5V | -- | -- | 0.3$V_{CC}$ | V |
| $I_{OL}$ | Low Level Output Current | $V_{CC}$=1.65V | -- | -- | 4 | mA |
| | | $V_{CC}$=2.3V | -- | -- | 8 | mA |
| | | $V_{CC}$=3V | -- | -- | 16 | mA |
| | | | -- | -- | 24 | mA |
| | | $V_{CC}$=4.5V | -- | -- | 32 | mA |

| Symbol | Parameter | Test Condition | MIN | TYP | MAX | Unit |
|---|---|---|---|---|---|---|
| $V_{OL}$ | Low Level Output Voltage | $V_{CC}$=1.65V to 5.5V,$I_{OH}$=100uA | -- | -- | 0.1 | V |
| | | $V_{CC}$=1.65V,$I_O$=4mA | -- | 0.09 | -- | V |
| | | $V_{CC}$=2.3V,$I_O$=8mA | -- | 0.1 | -- | V |
| | | $V_{CC}$=3V,$I_O$=16mA | -- | 0.15 | -- | V |
| | | $V_{CC}$=3V,$I_O$=24mA | -- | 0.25 | -- | V |
| | | $V_{CC}$=4.5V,$I_O$=32mA | -- | 0.25 | -- | V |
| $I_I$ | A Inputs Leakage Current | $V_{CC}$=0 to 5.5V,$V_I$=$V_{CC}$ or GND | -- | 0 | ±1 | uA |
| $I_{off}$ | Power Off Leakage Current | $V_{CC}$=0V,$V_I$ or $V_O$=5.5V | -- | 0 | ±10 | uA |
| $I_{OZ}$ | 3-State Output OFF-State Current | $V_{CC}$=3.6V, $V_O$ = 0 to 5.5V | -- | 0 | 10 | uA |
| $I_{CC}$ | Quiescent Supply Current | $V_{CC}$=1.65V to 5.5V,$V_I$=$V_{CC}$ or GND,$I_O$=0 | -- | 0 | 10 | uA |
| $\Delta I_{CC}$ | Additional Quiescent Supply Current Per Input Pin | $V_{CC}$=3V to 5.5V,one input at $V_{CC}$ -0.6V,Other inputs at $V_{CC}$ or GND | -- | -- | 500 | uA |

## Application Information

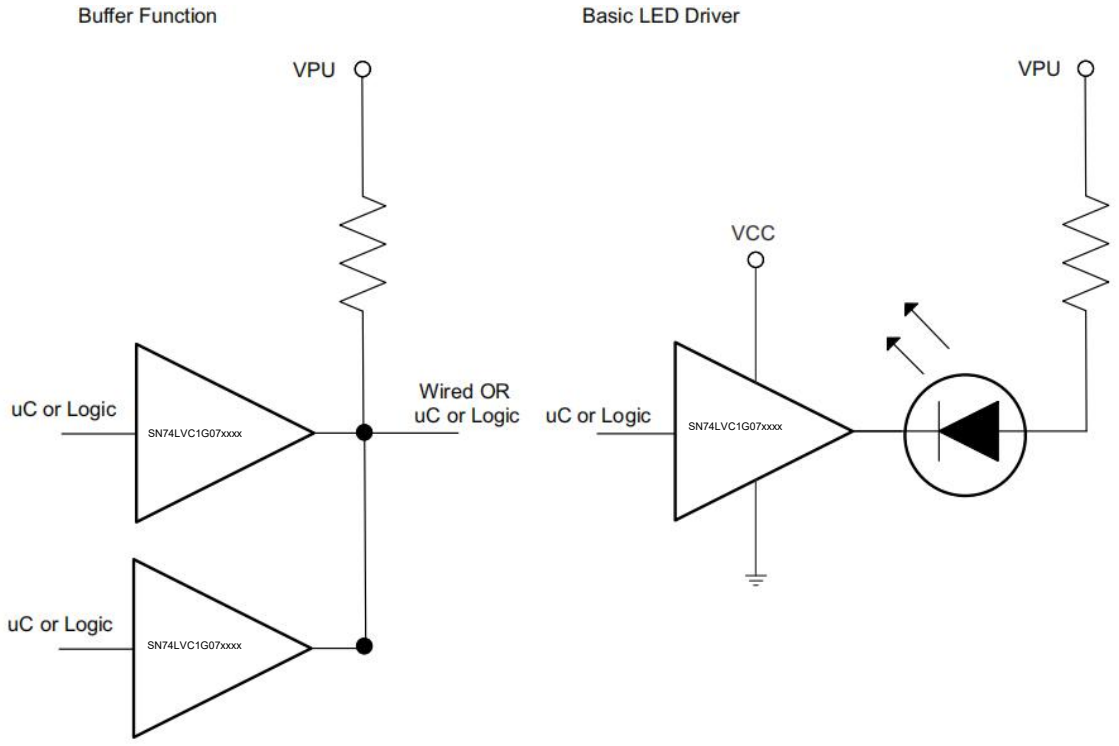
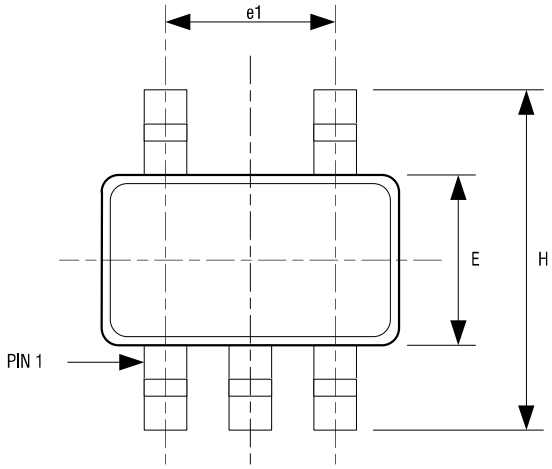



Figure 5.1：Application Schematic

# PACKAGE DESCRIPTION

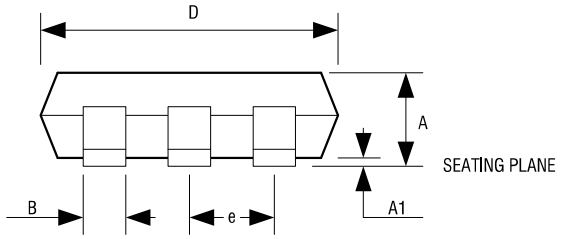
## SOT-23-5



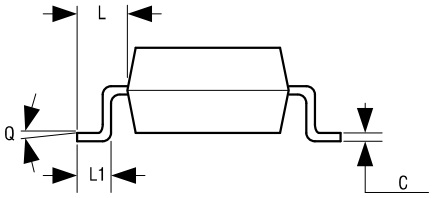

TOP VIEW

5LD SOT-23 PACKAGE OUTLINE DIMENSIONS

| Dimension | Min. | Max. |
|---|---|---|
| A | 1.05 | 1.35 |
| A1 | 0.04 | .15 |
| B | 0.3 | 0.5 |
| C | 0.09 | 0.2 |
| D | 2.8 | 3.0 |
| H | 2.5 | 3.1 |
| E | 1.5 | 1.7 |
| e | 0.95 REF. | |
| e1 | 1.90 REF. | |
| L1 | 0.2 | 0.55 |
| L | 0.35 | 0.8 |
| Q | 0° | 10° |




FRONT VIEW

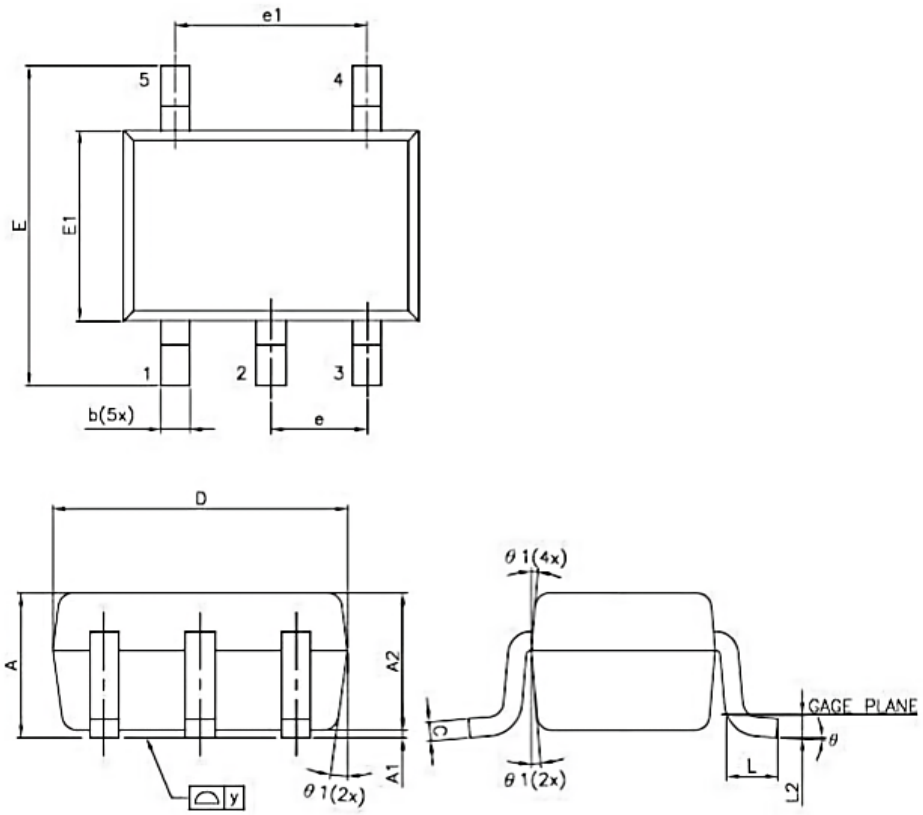



SIDE VIEW

**NOTE:**

1.DIMENSIONS ARE IN MLLIMETERS
2.DRAWING NOT TO SCALE
3.DIMENSIONS ARE INCLUSIVE OF PLATING
4.DIMENSIONS ARE EXCLUSVE OF MOLD FLASH AND METAL BURR

## SC70-5




| Symbol | Dim in mm | | |
|---|---|---|---|
| | MIN | TYP | MAX |
| A | 0.90 | 1.00 | 1.10 |
| A1 | 0.00 | 0.05 | 0.10 |
| A2 | 0.90 | 0.95 | 1.00 |
| b | 0.15 | 0.25 | 0.35 |
| C | 0.10 | 0.12 | 0.15 |
| D | 1.80 | 2.00 | 2.20 |
| E | 2.15 | 2.25 | 2.35 |
| E1 | 1.15 | 1.25 | 1.35 |
| e | 0.650TYP. | | |
| el | 1.20 | 1.30 | 1.40 |
| L | 0.25 | 0.30 | 0.40 |
| L2 | 0.15TYP. | | |
| Y | 0.00 | 0.05 | 0.10 |
| θ | 4° | 8° | 12° |