

### Features

- Wide Supply Voltage Range From 1.65V To 5.5V.
- Inputs Accept Voltages to 5.5V
- IOFF Supports Partial-Power-Down Mode
- Low Power Dissipation
- Max tPD of 4.1 ns at 3.3V
- ESD Protection Exceeds JESD 22
  - 2000-V Human-Body Model (A114-A)
  - 200-V Machine Model (A115-A)
  - 1000-V Charged-Device Model (C101)

### General Description

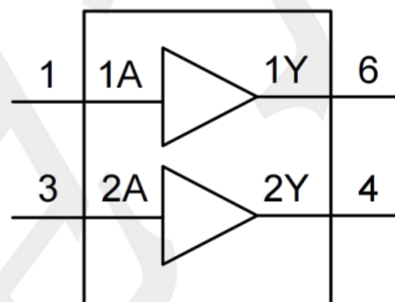
The 74LVC2G34GV-TP is a dual buffer it provides the function  $Y = A$ .

This device has power-down protective circuit, preventing device destruction when it is powered down.

### Applications

- AV Receiver
- Audio Dock:Portable
- Blu-ray Player and Home Theater
- Embedded PC
- Personal Digital Assistant(PDA)
- Power:Telecom/Server AC/DC Supply:Single Controller:Analog and Digital

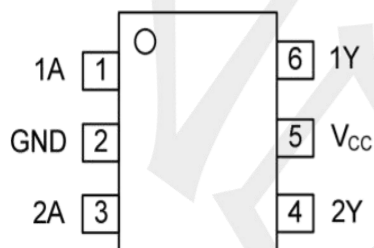
### Logic Diagram



### Ordering Information

| ORDER NUMBER   | PACKAGE DESCRIPTION | PACKAGE OPTION     |
|----------------|---------------------|--------------------|
| 74LVC2G34GV-TP | SOT23-6             | Tape and Reel,3000 |

### Pin Configuratio



**SOT23-6**

### Function Table

| INPUT(nA) | OUTPUT(nY) |
|-----------|------------|
| L         | L          |
| H         | H          |

Note:H: HIGH voltage level;L: LOW voltage level.

### Absolute Maximum Ratings (Unless otherwise specified)

| PARAMETER                      | SYMBOL           | CONDITIONS                       | RATINGS                     | UNIT |
|--------------------------------|------------------|----------------------------------|-----------------------------|------|
| Supply Voltage                 | V <sub>CC</sub>  |                                  | -0.5 ~ +6.5                 | V    |
| Input Voltage                  | V <sub>IN</sub>  |                                  | -0.5 ~ +6.5                 | V    |
| Output Voltage                 | V <sub>OUT</sub> | High-Impedance & Power-Off State | -0.5 ~ +6.5                 | V    |
|                                |                  | Active mode                      | -0.5 ~ V <sub>CC</sub> +0.5 | V    |
| V <sub>CC</sub> or GND Current | I <sub>CC</sub>  |                                  | ±100                        | mA   |
| Continuous Output Current      | I <sub>OUT</sub> |                                  | ±50                         | mA   |
| Input Clamp Current            | I <sub>IK</sub>  | V <sub>IN</sub> <0               | -50                         | mA   |
| Output Clamp Current           | I <sub>OK</sub>  | V <sub>OUT</sub> <0              | -50                         | mA   |
| Storage Temperature Range      | T <sub>STG</sub> |                                  | -65 ~ +150                  | °C   |
| Junction to Ambient            | θ <sub>JA</sub>  | SOT-23-6                         | 230                         | °C/W |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### Recommended Operating Conditions(Unless otherwise specified)

| PARAMETER                | SYMBOL                          | TEST CONDITIONS                      | MIN  | TYP | MAX             | UNIT |
|--------------------------|---------------------------------|--------------------------------------|------|-----|-----------------|------|
| Supply Voltage           | V <sub>CC</sub>                 | Operating                            | 1.65 | --  | 5.5             | V    |
| Input Voltage            | V <sub>IN</sub>                 |                                      | 0    | --  | 5.5             | V    |
| Output Voltage           | V <sub>OU</sub><br>T            | Active mode                          | 0    | --  | V <sub>CC</sub> | V    |
|                          |                                 | V <sub>CC</sub> =0V, Power-down mode | 0    | --  | 5.5             | V    |
| Input Rise or Fall Times | t <sub>R</sub> / t <sub>F</sub> | V <sub>CC</sub> =1.65V ~ 2.7V        | 0    | --  | 20              | ns/V |
|                          |                                 | V <sub>CC</sub> =2.7V ~ 5.5V         | 0    | --  | 10              | ns/V |
| Operating Temperature    | T <sub>A</sub>                  |                                      | -40  | --  | +125            | °C   |

### Electrical Characteristics ( unless otherwise specified)

| PARAMETER                                         | SYMBOL        | TEST CONDITIONS                                                                                      | MIN                  | TYP | MAX                  | UNIT    |
|---------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|----------------------|-----|----------------------|---------|
| High-Level Input Voltage                          | $V_{IH}$      | $V_{CC}=1.65V \sim 1.95V$                                                                            | $0.65 \times V_{CC}$ | --  | --                   | V       |
|                                                   |               | $V_{CC}=2.3V \sim 2.7V$                                                                              | 1.7                  | --  | --                   | V       |
|                                                   |               | $V_{CC}=3V \sim 3.6V$                                                                                | 2                    | --  | --                   | V       |
|                                                   |               | $V_{CC}=4.5V \sim 5.5V$                                                                              | $0.7 \times V_{CC}$  | --  | --                   | V       |
| Low-Level Input Voltage                           | $V_{IL}$      | $V_{CC}=1.65V \sim 1.95V$                                                                            | --                   | --  | $0.35 \times V_{CC}$ | V       |
|                                                   |               | $V_{CC}=2.3V \sim 2.7V$                                                                              | --                   | --  | 0.7                  | V       |
|                                                   |               | $V_{CC}=3V \sim 3.6V$                                                                                | --                   | --  | 0.8                  | V       |
|                                                   |               | $V_{CC}=4.5V \sim 5.5V$                                                                              | --                   | --  | $0.3 \times V_{CC}$  | V       |
| High-Level Output Voltage                         | $V_{OH}$      | $V_{CC}=1.65 \sim 5.5V, I_{OH}=-100\mu A$                                                            | $V_{CC}-0.1$         | --  | --                   | V       |
|                                                   |               | $V_{CC}=1.65V, I_{OH}=-4mA$                                                                          | 1.2                  | --  | --                   | V       |
|                                                   |               | $V_{CC}=2.3V, I_{OH}=-8mA$                                                                           | 1.9                  | --  | --                   | V       |
|                                                   |               | $V_{CC}=2.7V, I_{OH}=-12mA$                                                                          | 2.2                  | --  | --                   | V       |
|                                                   |               | $V_{CC}=3.0V, I_{OH}=-24mA$                                                                          | 2.3                  | --  | --                   | V       |
|                                                   |               | $V_{CC}=4.5V, I_{OH}=-32mA$                                                                          | 3.8                  | --  | --                   | V       |
| Low-Level Output Voltage                          | $V_{OL}$      | $V_{CC}=1.65 \sim 5.5V, I_{OL}=100\mu A$                                                             | --                   | --  | 0.1                  | V       |
|                                                   |               | $V_{CC}=1.65V, I_{OL}=4mA$                                                                           | --                   | --  | 0.45                 | V       |
|                                                   |               | $V_{CC}=2.3V, I_{OL}=8mA$                                                                            | --                   | --  | 0.3                  | V       |
|                                                   |               | $V_{CC}=2.7V, I_{OL}=12mA$                                                                           | --                   | --  | 0.4                  | V       |
|                                                   |               | $V_{CC}=3.0V, I_{OL}=24mA$                                                                           | --                   | --  | 0.55                 | V       |
|                                                   |               | $V_{CC}=4.5V, I_{OL}=32mA$                                                                           | --                   | --  | 0.55                 | V       |
| Input Leakage Current                             | $I_{I(LEAK)}$ | $V_{IN}=5.5V$ or GND, $V_{CC}=5.5V$                                                                  | --                   | --  | $\pm 5$              | $\mu A$ |
| Power OFF Leakage Current                         | $I_{OFF}$     | $V_{IN}$ or $V_{OUT}=5.5V, V_{CC}=0V$                                                                | --                   | --  | $\pm 10$             | $\mu A$ |
| Quiescent Supply Current                          | $I_Q$         | $V_{IN}=5.5V$ or GND, $I_{OUT}=0, V_{CC}=5.5V$                                                       | --                   | --  | 10                   | $\mu A$ |
| Additional Quiescent Supply Current Per Input Pin | $\Delta I_Q$  | $V_{CC}=2.3 \sim 5.5V, I_{OUT}=0$<br>One input at $V_{CC}-0.6V$ ,<br>Other inputs at $V_{CC}$ or GND | --                   | --  | 500                  | $\mu A$ |
| Input Capacitance                                 | $C_{IN}$      |                                                                                                      | --                   | 2.5 | --                   | pF      |

### OPERATING CHARACTERISTICS (TA = 25°C, unless otherwise specified)

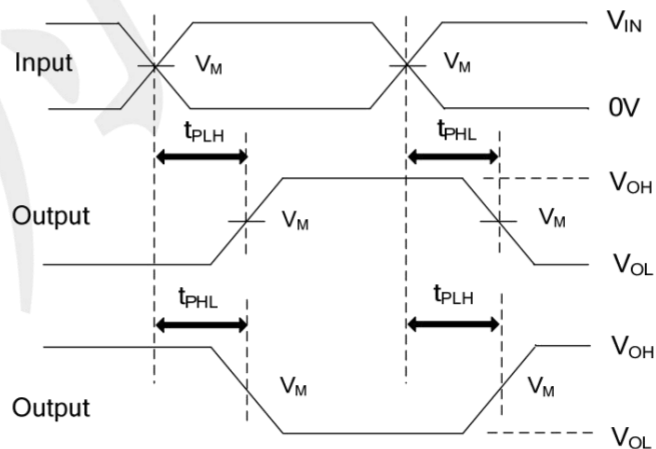
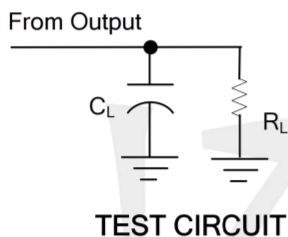
| PARAMETER                     | SYMBOL | TEST CONDITIONS          | MIN | TYP | MAX | UNIT |
|-------------------------------|--------|--------------------------|-----|-----|-----|------|
| Power Dissipation Capacitance | CPD    | VCC=3.3V, VIN=GND to VCC |     | 20  |     | pF   |

### SWITCHING CHARACTERISTICS (see TEST CIRCUIT AND WAVEFORMS)

| PARAMETER                                       | SYMBOL      | TEST CONDITIONS                  | MIN | TYP | MAX | UNIT |
|-------------------------------------------------|-------------|----------------------------------|-----|-----|-----|------|
| Propagation delay from input (nA) to output(nY) | tPLH / tPHL | CL=30pF, VCC=1.65V~1.95V, RL=1KΩ | 1.0 | 3.8 | 8.6 | ns   |
|                                                 |             | CL=30pF, VCC=2.3V~2.7V, RL=500Ω  | 0.5 | 2.4 | 4.4 | ns   |
|                                                 |             | CL=50pF, VCC=2.7V, RL=500Ω       | 0.5 | 2.5 | 5.0 | ns   |
|                                                 |             | CL=50pF, VCC=3.0V~3.6V, RL=500Ω  | 0.5 | 2.2 | 4.1 | ns   |
|                                                 |             | CL=50pF, VCC=4.5V~5.5V, RL=500Ω  | 0.5 | 1.9 | 3.2 | ns   |

### TEST CIRCUIT AND WAVEFORMS

| VCC           | INPUTS |        | VM    | CL   | RL   |
|---------------|--------|--------|-------|------|------|
|               | VIN    | tR, tF |       |      |      |
| 1.65V ~ 1.95V | VCC    | ≤2ns   | VCC/2 | 30pF | 1KΩ  |
| 2.3V ~ 2.7V   | VCC    | ≤2ns   | VCC/2 | 30pF | 500Ω |
| 2.7V          | 2.7V   | ≤2.5ns | 1.5V  | 50pF | 500Ω |
| 3.0V ~ 3.6V   | 2.7V   | ≤2.5ns | 1.5V  | 50pF | 500Ω |
| 4.5V ~ 5.5V   | VCC    | ≤2.5ns | VCC/2 | 50pF | 500Ω |



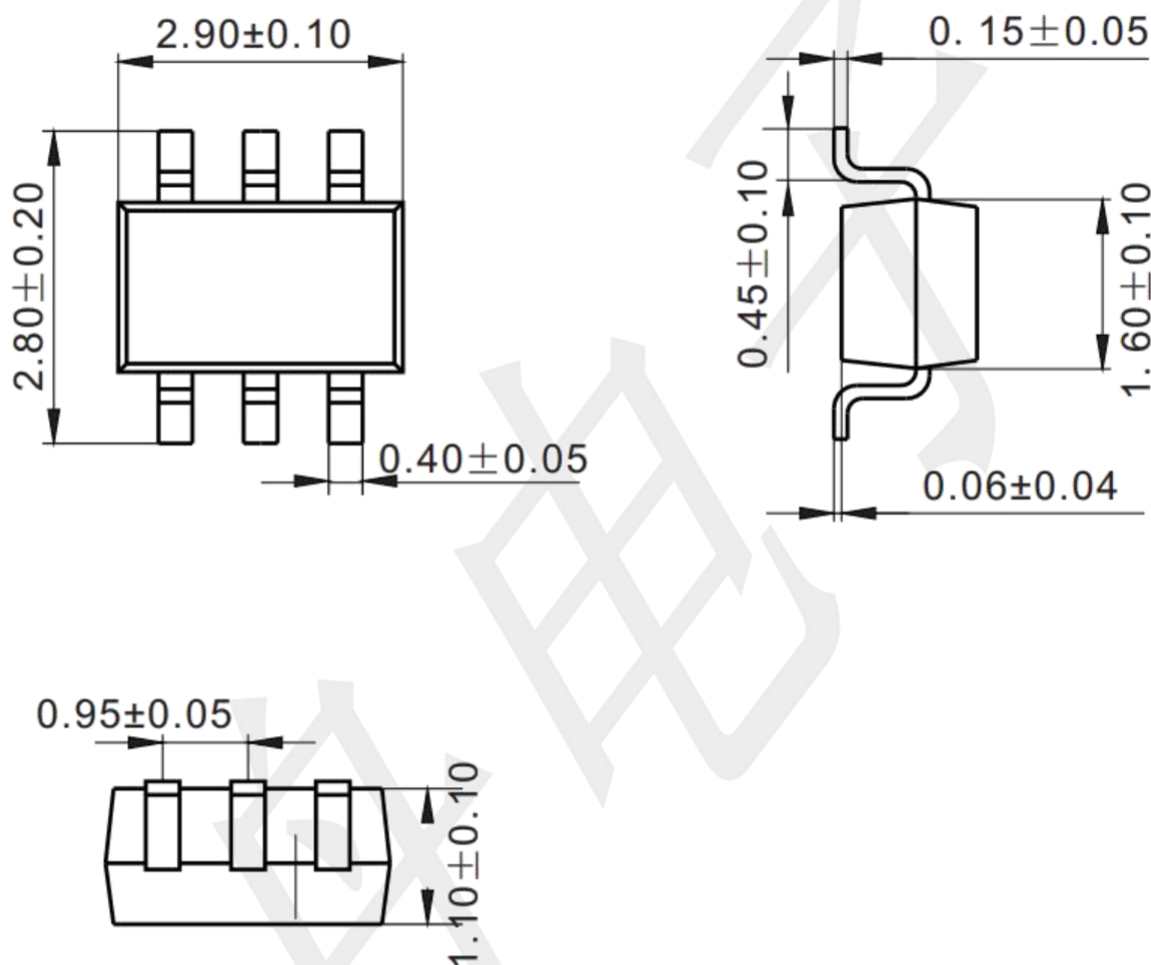
PROPAGATION DELAY TIMES

Note: CL includes probe and jig capacitance.

All input pulses are supplied by generators having the following characteristics: PRR ≤10MHz, Zo = 50Ω.

## Package information

SOT23-6 (Unit: mm)



## Mounting Pad Layout (unit: mm)

