



# AiP74LVC2G34 Dual Buffer

## Product Specification

### Specification Revision History:

| Version    | Date    | Description                                                                                                                                                     |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2017-07-A1 | 2017-07 | New                                                                                                                                                             |
| 2021-09-A2 | 2021-09 | Modify ambient temperature to $-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$ and add electrical characteristics of $-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$ |
| 2021-10-A3 | 2021-10 | Modify ordering information                                                                                                                                     |
| 2021-12-A4 | 2021-12 | Modify ordering information                                                                                                                                     |
| 2022-03-A5 | 2022-03 | Modify ordering information note 1                                                                                                                              |



## 1、General Description

The AiP74LVC2G34 provides two buffers.

Inputs can be driven from either 3.3V or 5V devices. These features allow the use of these devices in a mixed 3.3V and 5V environment.

This device is fully specified for partial power-down applications using  $I_{OFF}$ . The  $I_{OFF}$  circuitry disables the output, preventing the damaging backflow current through the device when it is powered down.

### Features:

- Wide supply voltage range from 1.65V to 5.5V
- 5V tolerant inputs for interfacing with 5V logic
- $\pm 24\text{mA}$  output drive ( $V_{CC}=3.0\text{V}$ )
- CMOS low power consumption
- Latch-up performance exceeds 250mA
- Direct interface with TTL levels
- Specified from  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$
- Packaging information: SOT-23-6/SOT-363

### Ordering Information:

#### Reel packing specifications:

| Part number          | Packaging form | Marking code | Reel quantity | Boxed reel quantity | Notes                                                               |
|----------------------|----------------|--------------|---------------|---------------------|---------------------------------------------------------------------|
| AiP74LVC2G34GB236.TR | SOT-23-6(1)    | ANXX         | 3000 PCS/reel | 30000 PCS/box       | Dimensions of plastic enclosure: 2.9mm×1.6mm<br>Pin spacing: 0.95mm |
| AiP74LVC2G34GB236.TR | SOT-23-6(2)    | ANXX         | 3000 PCS/reel | 45000 PCS/box       | Dimensions of plastic enclosure: 2.9mm×1.6mm<br>Pin spacing: 0.95mm |
| AiP74LVC2G34GC363.TR | SOT-363        | ANXX         | 3000 PCS/reel | 30000 PCS/box       | Dimensions of plastic enclosure: 2.1mm×1.3mm<br>Pin spacing: 0.65mm |

Note 1: “XX” refers to variable content, meaning year and package batch serial number.

Note 2: If the physical information is inconsistent with the ordering information, please refer to the actual product.



## 2、Block Diagram And Pin Description

### 2.1、Block Diagram

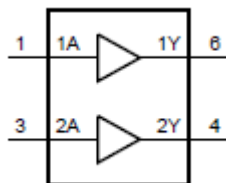


Figure 1. Logic symbol

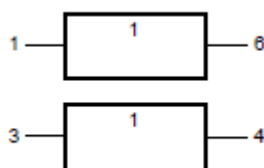
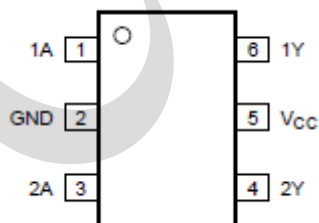


Figure 2. IEC logic symbol



Figure 3. Logic diagram (one gate)

### 2.2、Pin Configurations



### 2.3、Pin Description

| Pin No. | Pin Name        | Description    |
|---------|-----------------|----------------|
| 1       | 1A              | data input     |
| 2       | GND             | ground (0V)    |
| 3       | 2A              | data input     |
| 4       | 2Y              | data output    |
| 5       | V <sub>CC</sub> | supply voltage |
| 6       | 1Y              | data output    |



## 2.4、Function Table

| Input | Output |
|-------|--------|
| nA    | nY     |
| L     | L      |
| H     | H      |

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

## 3、Electrical Parameter

### 3.1、Absolute Maximum Ratings

(Voltages are referenced to GND(ground=0V), unless otherwise specified.)

| Parameter               | Symbol    | Conditions                   | Min. | Max.         | Unit |
|-------------------------|-----------|------------------------------|------|--------------|------|
| supply voltage          | $V_{CC}$  | -                            | -0.5 | +6.5         | V    |
| input clamping current  | $I_{IK}$  | $V_I < 0V$                   | -50  | -            | mA   |
| input voltage           | $V_I$     | -                            | -0.5 | +6.5         | V    |
| output clamping current | $I_{OK}$  | $V_O > V_{CC}$ or $V_O < 0V$ | -    | $\pm 50$     | mA   |
| output voltage          | $V_O$     | Active mode                  | -0.5 | $V_{CC}+0.5$ | V    |
|                         |           | Power-down mode              | -0.5 | +6.5         | V    |
| output current          | $I_O$     | $V_O=0V$ to $V_{CC}$         | -    | $\pm 50$     | mA   |
| supply current          | $I_{CC}$  | -                            | -    | 100          | mA   |
| ground current          | $I_{GND}$ | -                            | -100 | -            | mA   |
| total power dissipation | $P_{tot}$ | -                            | -    | 250          | mW   |
| storage temperature     | $T_{stg}$ | -                            | -65  | +150         | °C   |
| Soldering temperature   | $T_L$     | 10s                          | 250  |              | °C   |

Note: When  $V_{CC}=0V$  (Power-down mode), the output voltage can be 5.5V in normal operation.

### 3.2、Recommended Operating Conditions

| Parameter                           | Symbol              | Conditions                   | Min. | Typ. | Max.     | Unit |
|-------------------------------------|---------------------|------------------------------|------|------|----------|------|
| supply voltage                      | $V_{CC}$            | -                            | 1.65 | -    | 5.5      | V    |
| input voltage                       | $V_I$               | -                            | 0    | -    | 5.5      | V    |
| output voltage                      | $V_O$               | Active mode                  | 0    | -    | $V_{CC}$ | V    |
|                                     |                     | Power-down mode; $V_{CC}=0V$ | 0    | -    | 5.5      | V    |
| ambient temperature                 | $T_{amb}$           | -                            | -40  | -    | +105     | °C   |
| input transition rise and fall rate | $\Delta t/\Delta V$ | $V_{CC}=1.65V$ to $2.7V$     | -    | -    | 20       | ns/V |
|                                     |                     | $V_{CC}=2.7V$ to $5.5V$      | -    | -    | 10       | ns/V |



### 3.3、Electrical Characteristics

#### 3.3.1、DC Characteristics 1

( $T_{amb} = -40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , voltages are referenced to GND (ground=0V), unless otherwise specified.)

| Parameter                 | Symbol          | Conditions                                                                                | Min.                                                        | Typ.           | Max.                 | Unit          |
|---------------------------|-----------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------|----------------------|---------------|
| HIGH-level input voltage  | $V_{IH}$        | $V_{CC}=1.65\text{V to }1.95\text{V}$                                                     | $0.65 \times V_{CC}$                                        | -              | -                    | V             |
|                           |                 | $V_{CC}=2.3\text{V to }2.7\text{V}$                                                       | 1.7                                                         | -              | -                    | V             |
|                           |                 | $V_{CC}=2.7\text{V to }3.6\text{V}$                                                       | 2.0                                                         | -              | -                    | V             |
|                           |                 | $V_{CC}=4.5\text{V to }5.5\text{V}$                                                       | $0.7 \times V_{CC}$                                         | -              | -                    | V             |
| LOW-level input voltage   | $V_{IL}$        | $V_{CC}=1.65\text{V to }1.95\text{V}$                                                     | -                                                           | -              | $0.35 \times V_{CC}$ | V             |
|                           |                 | $V_{CC}=2.3\text{V to }2.7\text{V}$                                                       | -                                                           | -              | 0.7                  | V             |
|                           |                 | $V_{CC}=2.7\text{V to }3.6\text{V}$                                                       | -                                                           | -              | 0.8                  | V             |
|                           |                 | $V_{CC}=4.5\text{V to }5.5\text{V}$                                                       | -                                                           | -              | $0.3 \times V_{CC}$  | V             |
| HIGH-level output voltage | $V_{OH}$        | $V_I = V_{IH} \text{ or } V_{IL}$                                                         | $I_O = -100\mu\text{A}; V_{CC}=1.65\text{V to }5.5\text{V}$ | $V_{CC} - 0.1$ | -                    | V             |
|                           |                 |                                                                                           | $I_O = -4\text{mA}; V_{CC}=1.65\text{V}$                    | 1.2            | -                    | V             |
|                           |                 |                                                                                           | $I_O = -8\text{mA}; V_{CC}=2.3\text{V}$                     | 1.9            | -                    | V             |
|                           |                 |                                                                                           | $I_O = -12\text{mA}; V_{CC}=2.7\text{V}$                    | 2.2            | -                    | V             |
|                           |                 |                                                                                           | $I_O = -24\text{mA}; V_{CC}=3.0\text{V}$                    | 2.3            | -                    | V             |
|                           |                 |                                                                                           | $I_O = -32\text{mA}; V_{CC}=4.5\text{V}$                    | 3.8            | -                    | V             |
| LOW-level output voltage  | $V_{OL}$        | $V_I = V_{IH} \text{ or } V_{IL}$                                                         | $I_O = 100\mu\text{A}; V_{CC}=1.65\text{V to }5.5\text{V}$  | -              | -                    | 0.10          |
|                           |                 |                                                                                           | $I_O = 4\text{mA}; V_{CC}=1.65\text{V}$                     | -              | -                    | 0.45          |
|                           |                 |                                                                                           | $I_O = 8\text{mA}; V_{CC}=2.3\text{V}$                      | -              | -                    | 0.30          |
|                           |                 |                                                                                           | $I_O = 12\text{mA}; V_{CC}=2.7\text{V}$                     | -              | -                    | 0.40          |
|                           |                 |                                                                                           | $I_O = 24\text{mA}; V_{CC}=3.0\text{V}$                     | -              | -                    | 0.55          |
|                           |                 |                                                                                           | $I_O = 32\text{mA}; V_{CC}=4.5\text{V}$                     | -              | -                    | 0.55          |
| input leakage current     | $I_I$           | $V_I = 5.5\text{V or GND}; V_{CC}=0\text{V to }5.5\text{V}$                               | -                                                           | $\pm 0.1$      | $\pm 1$              | $\mu\text{A}$ |
| power-off leakage current | $I_{OFF}$       | $V_I \text{ or } V_O = 5.5\text{V}; V_{CC}=0\text{V}$                                     | -                                                           | $\pm 0.1$      | $\pm 2$              | $\mu\text{A}$ |
| supply current            | $I_{CC}$        | $V_I = 5.5\text{V or GND}; I_O = 0\text{A}; V_{CC}=1.65\text{V to }5.5\text{V}$           | -                                                           | 0.1            | 4                    | $\mu\text{A}$ |
| additional supply current | $\Delta I_{CC}$ | per pin; $V_I = V_{CC} - 0.6\text{V}; I_O = 0\text{A}; V_{CC}=2.3\text{V to }5.5\text{V}$ | -                                                           | 5              | 500                  | $\mu\text{A}$ |
| input capacitance         | $C_I$           | $V_{CC}=3.3\text{V}; V_I = \text{GND to } V_{CC}$                                         | -                                                           | 2.5            | -                    | pF            |

Note: All typical values are measured at  $T_{amb} = 25^{\circ}\text{C}$ .



## 3.3.2、DC Characteristics 2

(T<sub>amb</sub>=-40°C to +105°C, voltages are referenced to GND (ground=0V), unless otherwise specified.)

| Parameter                 | Symbol           | Conditions                                                                                           |                                                           | Min.                   | Typ. | Max.                   | Unit |
|---------------------------|------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------|------|------------------------|------|
| HIGH-level input voltage  | V <sub>IH</sub>  | V <sub>CC</sub> =1.65V to 1.95V                                                                      |                                                           | 0.65 × V <sub>CC</sub> | -    | -                      | V    |
|                           |                  | V <sub>CC</sub> =2.3V to 2.7V                                                                        |                                                           | 1.7                    | -    | -                      | V    |
|                           |                  | V <sub>CC</sub> =2.7V to 3.6V                                                                        |                                                           | 2.0                    | -    | -                      | V    |
|                           |                  | V <sub>CC</sub> =4.5V to 5.5V                                                                        |                                                           | 0.7 × V <sub>CC</sub>  | -    | -                      | V    |
| LOW-level input voltage   | V <sub>IL</sub>  | V <sub>CC</sub> =1.65V to 1.95V                                                                      |                                                           | -                      | -    | 0.35 × V <sub>CC</sub> | V    |
|                           |                  | V <sub>CC</sub> =2.3V to 2.7V                                                                        |                                                           | -                      | -    | 0.7                    | V    |
|                           |                  | V <sub>CC</sub> =2.7V to 3.6V                                                                        |                                                           | -                      | -    | 0.8                    | V    |
|                           |                  | V <sub>CC</sub> =4.5V to 5.5V                                                                        |                                                           | -                      | -    | 0.3 × V <sub>CC</sub>  | V    |
| HIGH-level output voltage | V <sub>OH</sub>  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                                  | I <sub>O</sub> =-100uA;<br>V <sub>CC</sub> =1.65V to 5.5V | V <sub>CC</sub> - 0.1  | -    | -                      | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =-4mA; V <sub>CC</sub> =1.65V              | 0.95                   | -    | -                      | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =-8mA; V <sub>CC</sub> =2.3V               | 1.7                    | -    | -                      | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =-12mA; V <sub>CC</sub> =2.7V              | 1.9                    | -    | -                      | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =-24mA; V <sub>CC</sub> =3.0V              | 2.0                    | -    | -                      | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =-32mA; V <sub>CC</sub> =4.5V              | 3.4                    | -    | -                      | V    |
| LOW-level output voltage  | V <sub>OL</sub>  | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                                                  | I <sub>O</sub> =100uA;<br>V <sub>CC</sub> =1.65V to 5.5V  | -                      | -    | 0.10                   | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =4mA; V <sub>CC</sub> =1.65V               | -                      | -    | 0.70                   | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =8mA; V <sub>CC</sub> =2.3V                | -                      | -    | 0.45                   | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =12mA; V <sub>CC</sub> =2.7V               | -                      | -    | 0.60                   | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =24mA; V <sub>CC</sub> =3.0V               | -                      | -    | 0.80                   | V    |
|                           |                  |                                                                                                      | I <sub>O</sub> =32mA; V <sub>CC</sub> =4.5V               | -                      | -    | 0.80                   | V    |
| input leakage current     | I <sub>I</sub>   | V <sub>I</sub> =5.5V or GND;<br>V <sub>CC</sub> =0V to 5.5V                                          |                                                           | -                      | -    | ±1                     | uA   |
| power-off leakage current | I <sub>OFF</sub> | V <sub>I</sub> or V <sub>O</sub> =5.5V; V <sub>CC</sub> =0V                                          |                                                           | -                      | -    | ±2                     | uA   |
| supply current            | I <sub>CC</sub>  | V <sub>I</sub> =5.5V or GND; I <sub>O</sub> =0A;<br>V <sub>CC</sub> =1.65V to 5.5V                   |                                                           | -                      | -    | 4                      | uA   |
| additional supply current | ΔI <sub>CC</sub> | per pin; V <sub>I</sub> =V <sub>CC</sub> -0.6V; I <sub>O</sub> =0A;<br>V <sub>CC</sub> =2.3V to 5.5V |                                                           | -                      | -    | 500                    | uA   |

Note: All typical values are measured at T<sub>amb</sub>=25°C.

**3.3.3、AC Characteristics 1**(T<sub>amb</sub>=-40°C to +85°C, voltages are referenced to GND (ground=0V), unless otherwise specified.)

| Parameter                     | Symbol          | Conditions                                                    |                                 | Min. | Typ. | Max. | Unit |
|-------------------------------|-----------------|---------------------------------------------------------------|---------------------------------|------|------|------|------|
| nA to nY propagation delay    | t <sub>pd</sub> | see Figure 5                                                  | V <sub>CC</sub> =1.65V to 1.95V | 1.0  | 3.8  | 8.6  | ns   |
|                               |                 |                                                               | V <sub>CC</sub> =2.3V to 2.7V   | 0.5  | 2.4  | 4.4  | ns   |
|                               |                 |                                                               | V <sub>CC</sub> =2.7V           | 0.5  | 2.5  | 5.0  | ns   |
|                               |                 |                                                               | V <sub>CC</sub> =3.0V to 3.6V   | 0.5  | 2.2  | 4.1  | ns   |
|                               |                 |                                                               | V <sub>CC</sub> =4.5V to 5.5V   | 0.5  | 1.9  | 3.2  | ns   |
| Power dissipation capacitance | C <sub>PD</sub> | V <sub>CC</sub> =3.3V; V <sub>I</sub> =GND to V <sub>CC</sub> |                                 | -    | 20   | -    | pF   |

Note:

[1] Typical values are measured at T<sub>amb</sub>=25°C and V<sub>CC</sub>=1.8V, 2.5V, 2.7V, 3.3V and 5.0V respectively.[2] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.[3] C<sub>PD</sub> is used to determine the dynamic power dissipation (P<sub>D</sub> in uW).

$$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \sum (C_L \times V_{CC}^2 \times f_o) \text{ where:}$$

f<sub>i</sub>=input frequency in MHz;f<sub>o</sub>=output frequency in MHz;C<sub>L</sub>=output load capacitance in pF;V<sub>CC</sub>=supply voltage in V;

N=number of inputs switching;

 $\sum (C_L \times V_{CC}^2 \times f_o)$ =sum of outputs.**3.3.4、AC Characteristics 2**(T<sub>amb</sub>=-40°C to +105°C, voltages are referenced to GND (ground=0V), unless otherwise specified.)

| Parameter                  | Symbol          | Conditions   |                                 | Min. | Typ. | Max. | Unit |
|----------------------------|-----------------|--------------|---------------------------------|------|------|------|------|
| nA to nY propagation delay | t <sub>pd</sub> | see Figure 5 | V <sub>CC</sub> =1.65V to 1.95V | 1.0  | -    | 10.8 | ns   |
|                            |                 |              | V <sub>CC</sub> =2.3V to 2.7V   | 0.5  | -    | 5.5  | ns   |
|                            |                 |              | V <sub>CC</sub> =2.7V           | 0.5  | -    | 6.3  | ns   |
|                            |                 |              | V <sub>CC</sub> =3.0V to 3.6V   | 0.5  | -    | 5.1  | ns   |
|                            |                 |              | V <sub>CC</sub> =4.5V to 5.5V   | 0.5  | -    | 4.0  | ns   |

Note:

[1] Typical values are measured at T<sub>amb</sub>=25°C and V<sub>CC</sub>=1.8V, 2.5V, 2.7V, 3.3V and 5.0V respectively.[2] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.



## 4、Testing Circuit

### 4.1、AC Testing Circuit

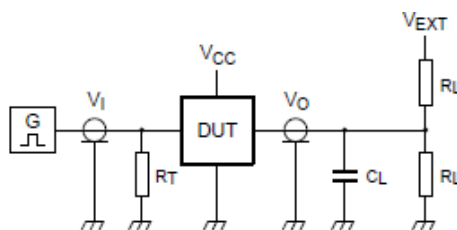


Figure 4. Test circuit for measuring switching times

Definitions for test circuit:

$R_L$ =Load resistance.

$C_L$ =Load capacitance including jig and probe capacitance.

$R_T$ =Termination resistance; should be equal to the output impedance  $Z_o$  of the pulse generator.

$V_{EXT}$ =External voltage for measuring switching times.

### 4.2、AC Testing Waveforms

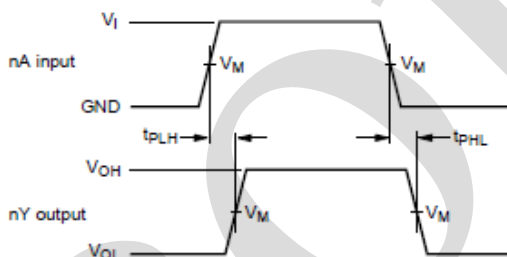


Figure 5. The input nA to output nY propagation delays

### 4.3、Measurement Points

| Supply voltage | Input               | Output              |
|----------------|---------------------|---------------------|
| $V_{CC}$       | $V_M$               | $V_M$               |
| 1.65V to 1.95V | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |
| 2.3V to 2.7V   | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |
| 2.7V           | 1.5V                | 1.5V                |
| 3.0V to 3.6V   | 1.5V                | 1.5V                |
| 4.5V to 5.5V   | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |

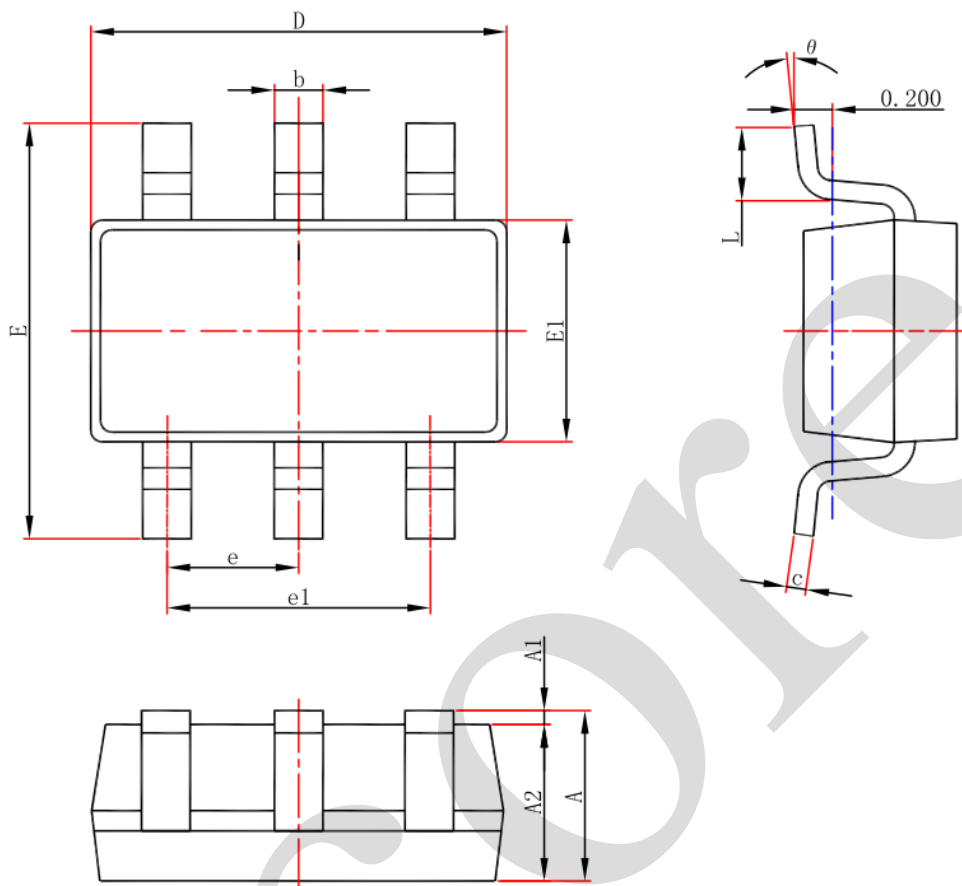
### 4.4、Test Data

| Supply voltage | Input    |              | Load  |              | $V_{EXT}$          |
|----------------|----------|--------------|-------|--------------|--------------------|
| $V_{CC}$       | $V_I$    | $t_r = t_f$  | $C_L$ | $R_L$        | $t_{PLH}, t_{PHL}$ |
| 1.65V to 1.95V | $V_{CC}$ | $\leq 2.0ns$ | 30pF  | 1k $\Omega$  | open               |
| 2.3V to 2.7V   | $V_{CC}$ | $\leq 2.0ns$ | 30pF  | 500 $\Omega$ | open               |
| 2.7V           | 2.7V     | $\leq 2.5ns$ | 50pF  | 500 $\Omega$ | open               |
| 3.0V to 3.6V   | 2.7V     | $\leq 2.5ns$ | 50pF  | 500 $\Omega$ | open               |
| 4.5V to 5.5V   | $V_{CC}$ | $\leq 2.5ns$ | 50pF  | 500 $\Omega$ | open               |



## 5、Package Information

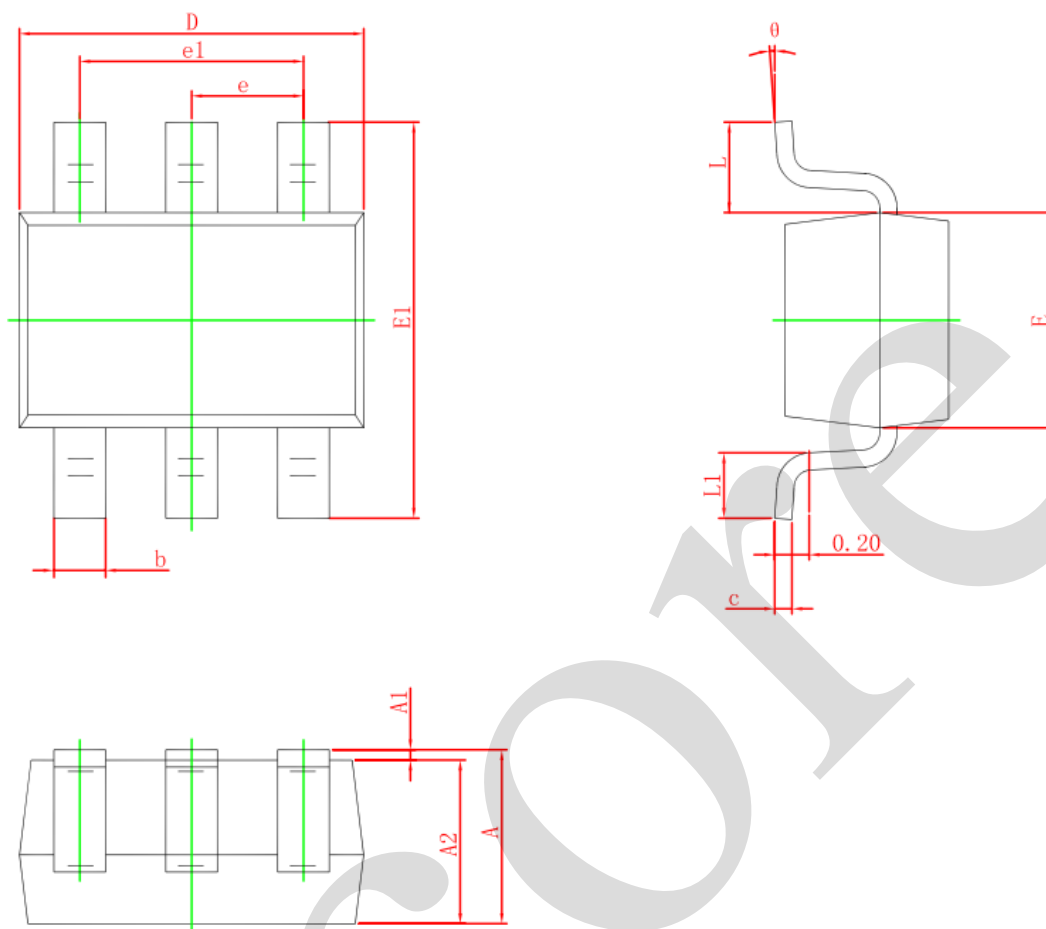
### 5.1、SOT-23-6



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E1     | 1.500                     | 1.700 | 0.059                | 0.067 |
| E      | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0.950(BSC)                |       | 0.037(BSC)           |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



## 5.2、SOT-363



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.150                     | 0.350 | 0.006                | 0.014 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.450 | 0.085                | 0.096 |
| e      | 0.650 TYP.                |       | 0.026 TYP.           |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF.                |       | 0.021 REF.           |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



## 6、Statements And Notes

### 6.1、The name and content of Hazardous substances or Elements in the product

| Part name               | Hazardous substances or Elements                                                                                                                                                                                                                                                 |                               |                               |                               |                          |                                |                   |                       |                           |                      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------|--------------------------------|-------------------|-----------------------|---------------------------|----------------------|
|                         | Lead and lead compounds                                                                                                                                                                                                                                                          | Mercury and mercury compounds | Cadmium and cadmium compounds | Hexavalent chromium compounds | Polybrominated biphenyls | Polybrominated biphenyl ethers | Dibutyl phthalate | Butylbenzyl phthalate | Di-2-ethylhexyl phthalate | Diisobutyl phthalate |
| Lead frame              | ○                                                                                                                                                                                                                                                                                | ○                             | ○                             | ○                             | ○                        | ○                              | ○                 | ○                     | ○                         | ○                    |
| Plastic resin           | ○                                                                                                                                                                                                                                                                                | ○                             | ○                             | ○                             | ○                        | ○                              | ○                 | ○                     | ○                         | ○                    |
| Chip                    | ○                                                                                                                                                                                                                                                                                | ○                             | ○                             | ○                             | ○                        | ○                              | ○                 | ○                     | ○                         | ○                    |
| The lead                | ○                                                                                                                                                                                                                                                                                | ○                             | ○                             | ○                             | ○                        | ○                              | ○                 | ○                     | ○                         | ○                    |
| Plastic sheet installed | ○                                                                                                                                                                                                                                                                                | ○                             | ○                             | ○                             | ○                        | ○                              | ○                 | ○                     | ○                         | ○                    |
| explanation             | <p>○: Indicates that the content of hazardous substances or elements in the detection limit of the following the SJ/T11363-2006 standard.</p> <p>×: Indicates that the content of hazardous substances or elements exceeding the SJ/T11363-2006 Standard limit requirements.</p> |                               |                               |                               |                          |                                |                   |                       |                           |                      |

### 6.2、Notion

Recommended carefully reading this information before the use of this product;

The information in this document are subject to change without notice;

This information is using to the reference only, the company is not responsible for any loss;

The company is not responsible for the any infringement of the third party patents or other rights of the responsibility.