

## Description

The 74LVC1G11 is a single 3-input positive AND gate with a standard push-pull output. The device is designed for operation with a power supply range of 1.65V to 5.5V. The inputs are tolerant to 5.5V allowing this device to be used in a mixed voltage environment. The device is fully specified for partial power down applications using IOFF. The IOFF circuitry disables the output preventing damaging current backflow when the device is powered down.

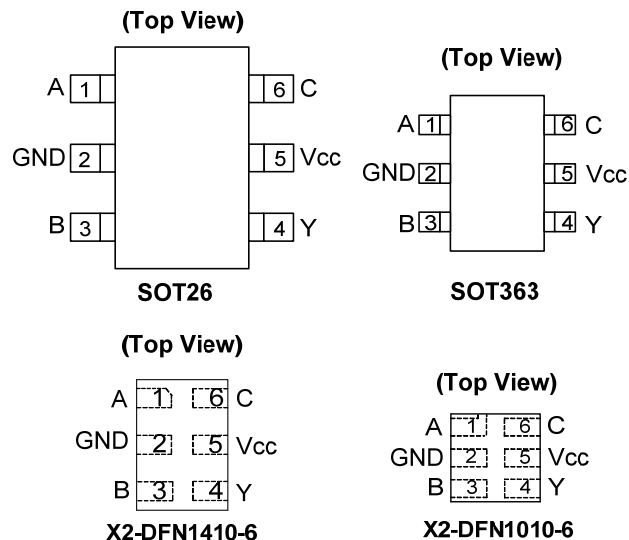
The gate performs the positive Boolean function:

$$Y = A \cdot B \cdot C \quad \text{or} \quad Y = \overline{\overline{A + B + C}}$$

## Features

- Wide Supply Voltage Range from 1.65V to 5.5V
- $\pm 24\text{mA}$  Output Drive at 3.3V
- CMOS Low Power Consumption
- IOFF Supports Partial-Power-Down Mode Operation
- Inputs Accept up to 5.5V
- ESD Protection Exceeds JESD 22:
  - 200-V Machine Model (A115-A)
  - 2000-V Human Body Model (A114-A)
- Latch-Up Exceeds 100mA per JESD 78, Class I
- Range of Package Options
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Pin Assignments



## Applications

- Voltage Level Shifting
- General Purpose Logic
- Power Down Signal Isolation
- Wide array of products such as:
  - PCs, networking, notebooks, Netbooks, PDAs
  - Computer Peripherals, Hard Drives, CD/DVD ROM
  - TV, DVD, DVR, Set Top Box
  - Cell Phones, Personal Navigation / GPS
  - MP3 players, Cameras, Video Recorders

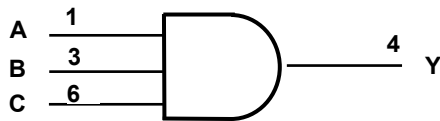
- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

[Click here for ordering information, located at the end of datasheet](#)

## Pin Descriptions

| Pin Name        | Function       |
|-----------------|----------------|
| A               | Data Input     |
| GND             | Ground         |
| B               | Data Input     |
| Y               | Data Output    |
| V <sub>CC</sub> | Supply Voltage |
| C               | Data Input     |

## Logic Diagram



## Function Table

| Inputs |   |   | Output |
|--------|---|---|--------|
| A      | B | C | Y      |
| H      | H | H | H      |
| L      | X | X | L      |
| X      | L | X | L      |
| X      | X | L | L      |

## Absolute Maximum Ratings (Note 4) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Symbol                   | Parameter   | Rating                        | Unit |
|--------------------------|---|-------------------------------|------|
| ESD HBM                  | Human Body Model ESD Protection                                       | 2                             | kV   |
| ESD MM                   | Machine Model ESD Protection  | 200                           | V    |
| V <sub>CC</sub>          | Supply Voltage Range  | -0.5 to 6.5                   | V    |
| V <sub>I</sub>           | Input Voltage Range   | -0.5 to 6.5                   | V    |
| V <sub>O</sub>           | Voltage applied to output in high impedance or I <sub>OFF</sub> state | -0.5 to 6.5                   | V    |
| V <sub>O</sub>           | Voltage applied to output in high or low state                        | -0.3 to V <sub>CC</sub> + 0.5 | V    |
| I <sub>IK</sub>          | Input Clamp Current V <sub>I</sub> < 0                                | -50                           | mA   |
| I <sub>OK</sub>          | Output Clamp Current  | -50                           | mA   |
| I <sub>O</sub>           | Continuous output current   | ±50                           | mA   |
| I <sub>CC MAX CONT</sub> | Continuous current through V <sub>CC</sub> or GND                     | ±100                          | mA   |
| T <sub>J</sub>           | Operating Junction Temperature  | -40 to +150                   | °C   |
| T <sub>STG</sub>         | Storage Temperature   | -65 to +150                   | °C   |

Note: 4. Stresses beyond the absolute maximum may result in immediate failure or reduced reliability. These are stress values and device operation should be within recommend values.

**Recommended Operating Conditions** (Note 5) (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Symbol              | Parameter                          | Min  | Max                  | Unit                 |      |
|---------------------|------------------------------------|--|----------------------|----------------------|------|
| $V_{CC}$            | Operating Voltage                  | Operating  | 1.65                 | 5.5                  | V    |
|                     |                                    | Data Retention Only  | 1.5                  |                      | V    |
| $V_{IH}$            | High-Level Input Voltage           | $V_{CC} = 1.65\text{V to }1.95\text{V}$                              | $0.65 \times V_{CC}$ |                      | V    |
|                     |                                    | $V_{CC} = 2.3\text{V to }2.7\text{V}$                                | 1.7                  |                      |      |
|                     |                                    | $V_{CC} = 3\text{V to }3.6\text{V}$                                  | 2                    |                      |      |
|                     |                                    | $V_{CC} = 4.5\text{V to }5.5\text{V}$                                | $0.7 \times V_{CC}$  |                      |      |
| $V_{IL}$            | Low-Level Input Voltage            | $V_{CC} = 1.65\text{V to }1.95\text{V}$                              |                      | $0.35 \times V_{CC}$ | V    |
|                     |                                    | $V_{CC} = 2.3\text{V to }2.7\text{V}$                                |                      | 0.7                  |      |
|                     |                                    | $V_{CC} = 3\text{V to }3.6\text{V}$                                  |                      | 0.8                  |      |
|                     |                                    | $V_{CC} = 4.5\text{V to }5.5\text{V}$                                |                      | $0.3 \times V_{CC}$  |      |
| $V_I$               | Input Voltage                      | 0  | 5.5                  | V                    |      |
| $V_O$               | Output Voltage                     | 0  | $V_{CC}$             | V                    |      |
| $I_{OH}$            | High-Level Output Current          | $V_{CC} = 1.65\text{V}$  |                      | -4                   | mA   |
|                     |                                    | $V_{CC} = 2.3\text{V}$   |                      | -8                   |      |
|                     |                                    | $V_{CC} = 3\text{V}$   |                      | -16                  |      |
|                     |                                    | $V_{CC} = 4.5\text{V}$   |                      | -24                  |      |
| $I_{OL}$            | Low-Level Output Current           | $V_{CC} = 1.65\text{V}$  |                      | 4                    | mA   |
|                     |                                    | $V_{CC} = 2.3\text{V}$   |                      | 8                    |      |
|                     |                                    | $V_{CC} = 3\text{V}$   |                      | 16                   |      |
|                     |                                    | $V_{CC} = 4.5\text{V}$   |                      | 24                   |      |
| $\Delta t/\Delta V$ | Input Transition Rise or Fall Rate | $V_{CC} = 1.8\text{V} \pm 0.15\text{V}, 2.5\text{V} \pm 0.2\text{V}$ |                      | 20                   | ns/V |
|                     |                                    | $V_{CC} = 3.3\text{V} \pm 0.3\text{V}$                               |                      | 10                   |      |
|                     |                                    | $V_{CC} = 5\text{V} \pm 0.5\text{V}$                                 |                      | 5                    |      |
| $T_A$               | Operating Free-Air Temperature     | -40  | +125                 | $^\circ\text{C}$     |      |

Note: 5. Unused inputs should be held at  $V_{CC}$  or Ground.

**Electrical Characteristics**  $T_A = -40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  (All typical values are at  $V_{CC} = 3.3\text{V}$ ,  $T_A = +25^{\circ}\text{C}$ , unless otherwise specified.)

| Symbol          | Parameter                  | Test Conditions                       | $V_{CC}$      | Min            | Typ | Max      | Unit          |
|-----------------|----------------------------|---------------------------------------|---------------|----------------|-----|----------|---------------|
| $V_{OH}$        | High-Level Output Voltage  | $I_{OH} = -100\mu\text{A}$            | 1.65V to 5.5V | $V_{CC} - 0.1$ |     |          | V             |
|                 |                            | $I_{OH} = -4\text{mA}$                | 1.65V         | 1.2            |     |          |               |
|                 |                            | $I_{OH} = -8\text{mA}$                | 2.3V          | 1.9            |     |          |               |
|                 |                            | $I_{OH} = -16\text{mA}$               | 3V            | 2.4            |     |          |               |
|                 |                            | $I_{OH} = -24\text{mA}$               |               | 2.3            |     |          |               |
|                 |                            | $I_{OH} = -32\text{mA}$               | 4.5V          | 3.8            |     |          |               |
| $V_{OL}$        | Low-Level Output Voltage   | $I_{OL} = 100\mu\text{A}$             | 1.65V to 5.5V |                |     | 0.1      | V             |
|                 |                            | $I_{OL} = 4\text{mA}$                 | 1.65V         |                |     | 0.45     |               |
|                 |                            | $I_{OL} = 8\text{mA}$                 | 2.3V          |                |     | 0.3      |               |
|                 |                            | $I_{OL} = 16\text{mA}$                | 3V            |                |     | 0.4      |               |
|                 |                            | $I_{OL} = 24\text{mA}$                |               |                |     | 0.55     |               |
|                 |                            | $I_{OL} = 32\text{mA}$                | 4.5V          |                |     | 0.55     |               |
| $I_I$           | Input Current              | $V_I = 5.5\text{V}$ or GND            | 0 to 5.5V     |                |     | $\pm 5$  | $\mu\text{A}$ |
| $I_{OFF}$       | Power Down Leakage Current | $V_I$ or $V_O = 5.5\text{V}$          | 0             |                |     | $\pm 10$ | $\mu\text{A}$ |
| $I_{CC}$        | Supply Current             | $V_I = 5.5\text{V}$ of GND, $I_O = 0$ | 1.65V to 5.5V |                |     | 10       | $\mu\text{A}$ |
| $\Delta I_{CC}$ | Additional Supply Current  | Input at $V_{CC} - 0.6\text{V}$       | 3V to 5.5V    |                |     | 500      | $\mu\text{A}$ |

**Electrical Characteristics**  $T_A = -40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (All typical values are at  $V_{CC} = 3.3\text{V}$ ,  $T_A = +25^{\circ}\text{C}$ , unless otherwise specified.)

| Symbol          | Parameter                  | Test Conditions                       | $V_{CC}$      | Min            | Typ | Max      | Unit          |
|-----------------|----------------------------|---------------------------------------|---------------|----------------|-----|----------|---------------|
| $V_{OH}$        | High-Level Output Voltage  | $I_{OH} = -100\mu\text{A}$            | 1.65V to 5.5V | $V_{CC} - 0.1$ |     |          | V             |
|                 |                            | $I_{OH} = -4\text{mA}$                | 1.65V         | 0.95           |     |          |               |
|                 |                            | $I_{OH} = -8\text{mA}$                | 2.3V          | 1.7            |     |          |               |
|                 |                            | $I_{OH} = -16\text{mA}$               | 3V            | 1.9            |     |          |               |
|                 |                            | $I_{OH} = -24\text{mA}$               |               | 2.0            |     |          |               |
|                 |                            | $I_{OH} = -32\text{mA}$               | 4.5V          | 3.4            |     |          |               |
| $V_{OL}$        | Low-Level Output Voltage   | $I_{OL} = 100\mu\text{A}$             | 1.65V to 5.5V |                |     | 0.1      | V             |
|                 |                            | $I_{OL} = 4\text{mA}$                 | 1.65V         |                |     | 0.70     |               |
|                 |                            | $I_{OL} = 8\text{mA}$                 | 2.3V          |                |     | 0.45     |               |
|                 |                            | $I_{OL} = 16\text{mA}$                | 3V            |                |     | 0.60     |               |
|                 |                            | $I_{OL} = 24\text{mA}$                |               |                |     | 0.80     |               |
|                 |                            | $I_{OL} = 32\text{mA}$                | 4.5V          |                |     | 0.80     |               |
| $I_I$           | Input Current              | $V_I = 5.5\text{V}$ or GND            | 0 to 5.5V     |                |     | $\pm 20$ | $\mu\text{A}$ |
| $I_{OFF}$       | Power Down Leakage Current | $V_I$ or $V_O = 5.5\text{V}$          | 0             |                |     | $\pm 20$ | $\mu\text{A}$ |
| $I_{CC}$        | Supply Current             | $V_I = 5.5\text{V}$ of GND, $I_O = 0$ | 1.65V to 5.5V |                |     | 40       | $\mu\text{A}$ |
| $\Delta I_{CC}$ | Additional Supply Current  | Input at $V_{CC} - 0.6\text{V}$       | 3V to 5.5V    |                |     | 5000     | $\mu\text{A}$ |

**Package Characteristics** (All typical values are at  $V_{CC} = 3.3V$ ,  $T_A = +25^{\circ}C$ , unless otherwise specified.)

| Symbol        | Parameter                              | Test Conditions                | $V_{CC}$ | Min | Typ | Max | Unit          |
|---------------|--|--------------------------------|----------|-----|-----|-----|---------------|
| $C_I$         | Input Capacitance                      | $V_I = V_{CC} - \text{or GND}$ | 3.3      |     | 3.5 |     | pF            |
| $\theta_{JA}$ | Thermal Resistance Junction-to-Ambient | SOT26                          | (Note 6) |     | 204 |     | $^{\circ}C/W$ |
|               |  | SOT363                         |          | 371 |     |     |               |
|               |  | X2-DFN1410-6                   |          | 430 |     |     |               |
|               |  | X2-DFN1010-6                   |          | 510 |     |     |               |
| $\theta_{JC}$ | Thermal Resistance Junction-to-Case    | SOT26                          | (Note 6) |     | 52  |     | $^{\circ}C/W$ |
|               |  | SOT363                         |          | 143 |     |     |               |
|               |  | X2-DFN1410-6                   |          | 190 |     |     |               |
|               |  | X2-DFN1010-6                   |          | 250 |     |     |               |

Note: 6. Test condition for SOT26, SOT363, X2-DFN1410-6 and X2-DFN1010-6 : Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

**Switching Characteristics**
 $T_A = -40^{\circ}C \text{ to } +85^{\circ}C$ ,  $C_L = 15pF$  (see Figure 1)

| Parameter | From (Input) | TO (OUTPUT) | $V_{CC} = 1.8V \pm 0.15V$ |      | $V_{CC} = 2.5V \pm 0.2V$ |     | $V_{CC} = 3.3V \pm 0.3V$ |     | $V_{CC} = 5V \pm 0.5V$ |     | Unit |
|-----------|--------------|-------------|---------------------------|------|--------------------------|-----|--------------------------|-----|------------------------|-----|------|
|           |              |             | Min                       | Max  | Min                      | Max | Min                      | Max | Min                    | Max |      |
| $t_{pd}$  | Any          | Y           | 1.0                       | 15.2 | 0.7                      | 5.6 | 0.7                      | 4.1 | 0.7                    | 3.1 | ns   |

 $T_A = -40^{\circ}C \text{ to } +85^{\circ}C$ ,  $C_L = 30 \text{ or } 50pF$  (see Figure 2)

| Parameter | From (Input) | TO (OUTPUT) | $V_{CC} = 1.8V \pm 0.15V$ |      | $V_{CC} = 2.5V \pm 0.2V$ |     | $V_{CC} = 3.3V \pm 0.3V$ |     | $V_{CC} = 5V \pm 0.5V$ |     | Unit |
|-----------|--------------|-------------|---------------------------|------|--------------------------|-----|--------------------------|-----|------------------------|-----|------|
|           |              |             | Min                       | Max  | Min                      | Max | Min                      | Max | Min                    | Max |      |
| $t_{pd}$  | Any          | Y           | 1.0                       | 17.2 | 0.7                      | 6.2 | 0.7                      | 4.9 | 0.7                    | 3.5 | ns   |

 $T_A = -40^{\circ}C \text{ to } +125^{\circ}C$ ,  $C_L = 15 pF$  (see Figure 1)

| Parameter | From (Input) | TO (OUTPUT) | $V_{CC} = 1.8V \pm 0.15V$ |      | $V_{CC} = 2.5V \pm 0.2V$ |     | $V_{CC} = 3.3V \pm 0.3V$ |     | $V_{CC} = 5V \pm 0.5V$ |     | Unit |
|-----------|--------------|-------------|---------------------------|------|--------------------------|-----|--------------------------|-----|------------------------|-----|------|
|           |              |             | Min                       | Max  | Min                      | Max | Min                      | Max | Min                    | Max |      |
| $t_{pd}$  | Any          | Y           | 1.0                       | 18.3 | 0.7                      | 6.7 | 0.7                      | 4.9 | 0.7                    | 3.7 | ns   |

 $T_A = -40^{\circ}C \text{ to } +125^{\circ}C$ ,  $C_L = 30 \text{ or } 50pF$  (see Figure 2)

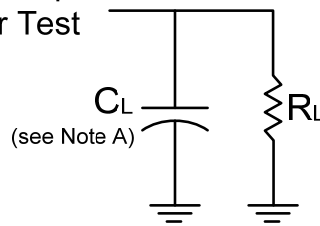
| Parameter | From (Input) | TO (OUTPUT) | $V_{CC} = 1.8V \pm 0.15V$ |      | $V_{CC} = 2.5V \pm 0.2V$ |     | $V_{CC} = 3.3V \pm 0.3V$ |     | $V_{CC} = 5V \pm 0.5V$ |     | Unit |
|-----------|--------------|-------------|---------------------------|------|--------------------------|-----|--------------------------|-----|------------------------|-----|------|
|           |              |             | Min                       | Max  | Min                      | Max | Min                      | Max | Min                    | Max |      |
| $t_{pd}$  | Any          | Y           | 1.0                       | 20.7 | 0.7                      | 7.5 | 0.7                      | 5.9 | 0.7                    | 4.2 | ns   |

**Operating Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

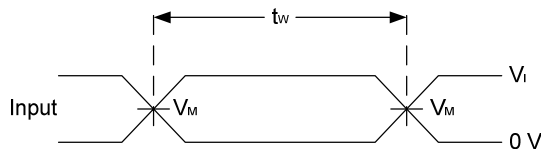
| Parameter |                               | Test Conditions     | $V_{CC} = 1.8\text{V}$ | $V_{CC} = 2.5\text{V}$ | $V_{CC} = 3.3\text{V}$ | $V_{CC} = 5\text{V}$ | Unit |
|-----------|-------------------------------|---------------------|------------------------|------------------------|------------------------|----------------------|------|
|           |                               |                     | Typ                    | Typ                    | Typ                    | Typ                  |      |
| $C_{pd}$  | Power dissipation capacitance | $f = 10\text{ MHz}$ | 17                     | 18                     | 19                     | 22                   | pF   |

**Parameter Measurement Information**

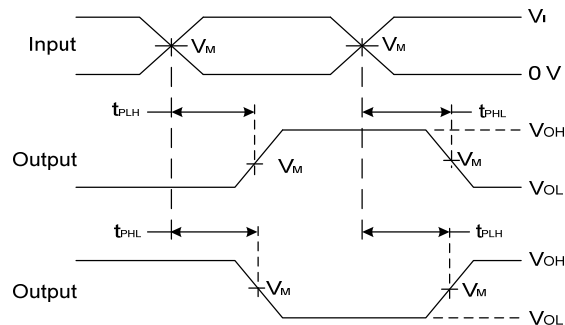
From Output  
Under Test



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



**Voltage Waveform  
Pulse Duration**

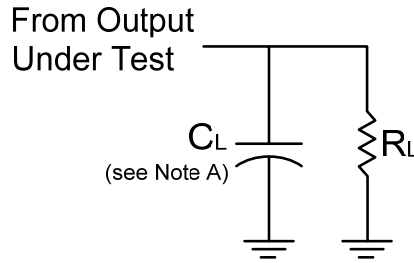


**Voltage Waveform  
Propagation Delay Times  
Inverting and Non Inverting Outputs**

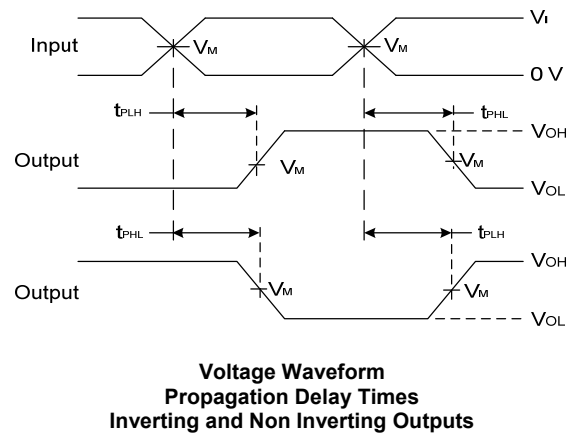
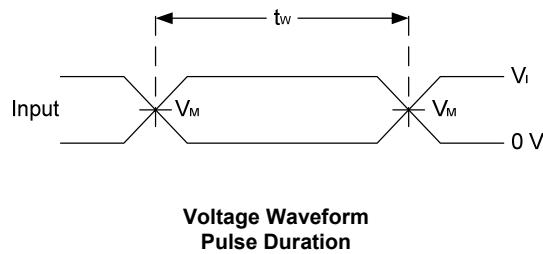
- Notes:
- A. Includes test lead and test apparatus capacitance.
  - B. All pulses are supplied at pulse repetition rate  $\leq 10\text{MHz}$
  - C. Inputs are measured separately one transition per measurement
  - D.  $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{PD}$

**Figure 1 Load Circuit and Voltage Waveforms**

**Parameter Measurement Information** (cont.)



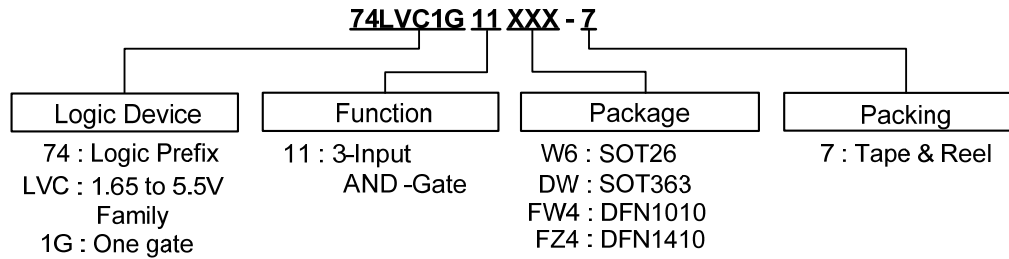
| $V_{CC}$         | Inputs   |              | $V_M$      | $C_L$ | $R_L$        |
|------------------|----------|--------------|------------|-------|--------------|
|                  | $V_I$    | $t_r/t_f$    |            |       |              |
| $1.8V \pm 0.15V$ | $V_{CC}$ | $\leq 2ns$   | $V_{CC}/2$ | 30pF  | 1k $\Omega$  |
| $2.5V \pm 0.2V$  | $V_{CC}$ | $\leq 2ns$   | $V_{CC}/2$ | 30pF  | 500 $\Omega$ |
| $3.3V \pm 0.3V$  | 3V       | $\leq 2.5ns$ | 1.5V       | 50pF  | 500 $\Omega$ |
| $5V \pm 0.5V$    | $V_{CC}$ | $\leq 2.5ns$ | $V_{CC}/2$ | 50pF  | 500 $\Omega$ |



- Notes:
- A. Includes test lead and test apparatus capacitance.
  - B. All pulses are supplied at pulse repetition rate  $\leq 10MHz$
  - C. Inputs are measured separately one transition per measurement
  - D.  $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{PD}$

**Figure 2 Load Circuit and Voltage Waveforms**

## Ordering Information

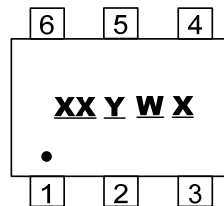


| Part Number    | Package Code | Packaging (Note 7) | 7" Tape and Reel |                    |
|----------------|--------------|--------------------|------------------|--------------------|
|                |              |                    | Quantity         | Part Number Suffix |
| 74LVC1G11W6-7  | W6           | SOT26              | 3000/Tape & Reel | -7                 |
| 74LVC1G11DW-7  | DW           | SOT363             | 3000/Tape & Reel | -7                 |
| 74LVC1G11FW4-7 | FW4          | X2-DFN1010-6       | 5000/Tape & Reel | -7                 |
| 74LVC1G11FZ4-7 | FW4          | X2-DFN1410-6       | 5000/Tape & Reel | -7                 |

Note: 7. The taping orientation is located on our website at <http://www.diodes.com/datasheets/ap02007.pdf>

## Marking Information

### (1) SOT26, SOT363

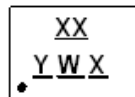


**XX** : Identification code  
**Y** : Year 0~9  
**W** : Week : A~Z : 1~26 week;  
           a~z : 27~52 week; z represents  
           52 and 53 week  
**X** : A~Z : Internal Code

| Part Number | Package | Identification Code |
|-------------|---------|---------------------|
| 74LVC1G11W6 | SOT26   | TV                  |
| 74LVC1G11DW | SOT363  | TV                  |

### (2) X2-DFN1010-6, X2-DFN1410-6

#### (Top View)



**XX** : Identification Code  
**Y** : Year : 0~9  
**W** : Week : A~Z : 1~26 week;  
           a~z : 27~52 week; z represents  
           52 and 53 week  
**X** : A~Z : Internal code

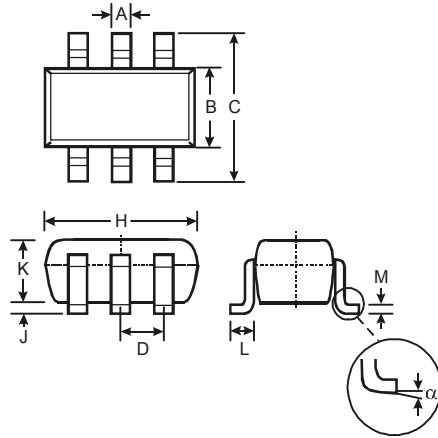
| Part Number  | Package      | Identification Code |
|--------------|--------------|---------------------|
| 74LVC1G11FW4 | X2-DFN1010-6 | TV                  |
| 74LVC1G11FZ4 | X2-DFN1410-6 | TV                  |



**Package Outline Dimensions** (All dimensions in mm.)

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

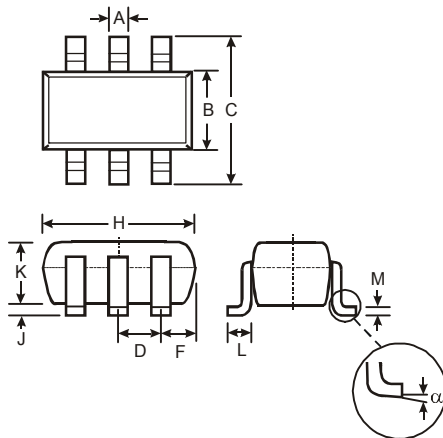
(1) Package Type: SOT26



| SOT26 |       |      |      |
|-------|-------|------|------|
| Dim   | Min   | Max  | Typ  |
| A     | 0.35  | 0.50 | 0.38 |
| B     | 1.50  | 1.70 | 1.60 |
| C     | 2.70  | 3.00 | 2.80 |
| D     | —     | —    | 0.95 |
| H     | 2.90  | 3.10 | 3.00 |
| J     | 0.013 | 0.10 | 0.05 |
| K     | 1.00  | 1.30 | 1.10 |
| L     | 0.35  | 0.55 | 0.40 |
| M     | 0.10  | 0.20 | 0.15 |
| α     | 0°    | 8°   | —    |

All Dimensions in mm

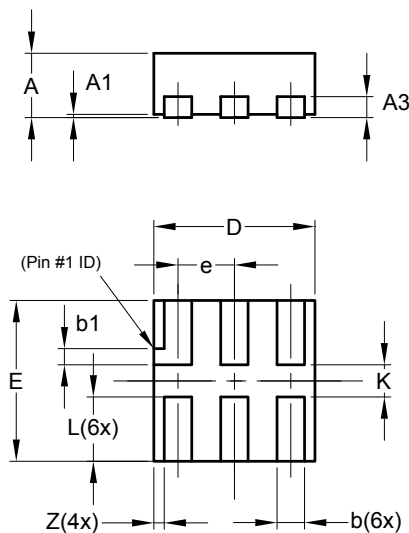
(2) Package Type: SOT363



| SOT363 |          |      |
|--------|----------|------|
| Dim    | Min      | Max  |
| A      | 0.10     | 0.30 |
| B      | 1.15     | 1.35 |
| C      | 2.00     | 2.20 |
| D      | 0.65 Typ |      |
| F      | 0.40     | 0.45 |
| H      | 1.80     | 2.20 |
| J      | 0        | 0.10 |
| K      | 0.90     | 1.00 |
| L      | 0.25     | 0.40 |
| M      | 0.10     | 0.22 |
| α      | 0°       | 8°   |

All Dimensions in mm

(3) Package Type: DFN1010



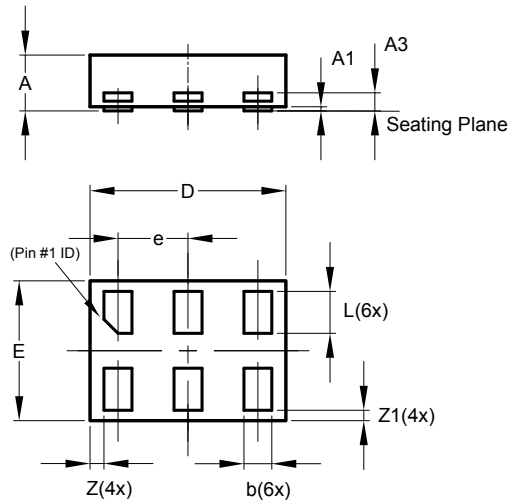
| X2-DFN1010-6 |      |      |       |
|--------------|------|------|-------|
| Dim          | Min  | Max  | Typ   |
| A            | —    | 0.40 | 0.39  |
| A1           | 0.00 | 0.05 | 0.02  |
| A3           | —    | —    | 0.13  |
| b            | 0.14 | 0.20 | 0.17  |
| b1           | 0.05 | 0.15 | 0.10  |
| D            | 0.95 | 1.05 | 1.00  |
| E            | 0.95 | 1.05 | 1.00  |
| e            | —    | —    | 0.35  |
| L            | 0.35 | 0.45 | 0.40  |
| K            | 0.15 | —    | —     |
| Z            | —    | —    | 0.065 |

All Dimensions in mm

**Package Outline Dimensions** (cont.) (All dimensions in mm.)

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

**(4) Package Type X2-DFN1410-6**

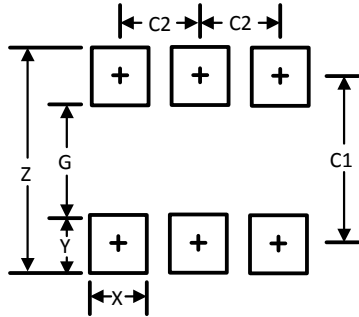


| X2-DFN1410-6                |       |       |       |
|-----------------------------|-------|-------|-------|
| Dim                         | Min   | Max   | Typ   |
| A                           | —     | 0.40  | 0.39  |
| A1                          | 0.00  | 0.05  | 0.02  |
| A3                          | —     | —     | 0.13  |
| b                           | 0.15  | 0.25  | 0.20  |
| D                           | 1.35  | 1.45  | 1.40  |
| E                           | 0.95  | 1.05  | 1.00  |
| e                           | —     | —     | 0.50  |
| L                           | 0.25  | 0.35  | 0.30  |
| Z                           | —     | —     | 0.10  |
| Z1                          | 0.045 | 0.105 | 0.075 |
| <b>All Dimensions in mm</b> |       |       |       |

**Suggested Pad Layout** (All dimensions in mm.)

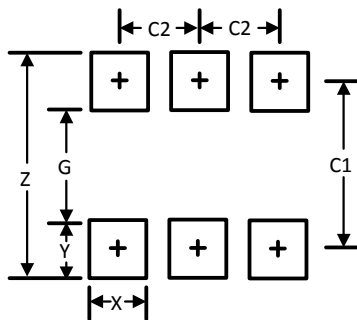
Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

(1) Package Type: SOT26



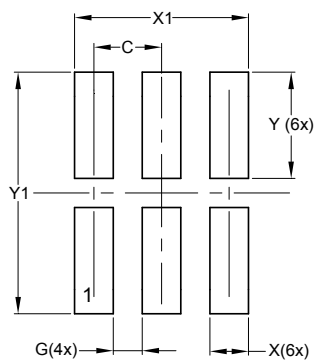
| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 3.20          |
| G          | 1.60          |
| X          | 0.55          |
| Y          | 0.80          |
| C1         | 2.40          |
| C2         | 0.95          |

(2) Package Type: SOT363



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 2.5           |
| G          | 1.3           |
| X          | 0.42          |
| Y          | 0.6           |
| C1         | 1.9           |
| C2         | 0.65          |

(3) Package Type X2-DFN1010-6

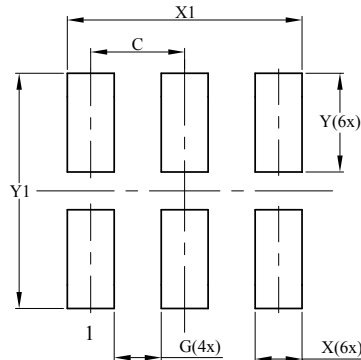


| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 0.350         |
| G          | 0.150         |
| X          | 0.200         |
| X1         | 0.900         |
| Y          | 0.550         |
| Y1         | 1.250         |

**Suggested Pad Layout (cont.)**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

**(4) Package Type: X2-DFN1410-6**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 0.500         |
| G          | 0.250         |
| X          | 0.250         |
| X1         | 1.250         |
| Y          | 0.525         |
| Y1         | 1.250         |

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