

### Description

The 74LVC1G58 is a single 3-input positive configurable multiple function gate with a standard push-pull output. The output state is determined by eight patterns of 3-bit input. The user can choose the logic functions AND, OR, NAND, NOR, XOR, inverter or non-inverting buffer. All inputs can be connected to ground or  $V_{CC}$  as required. 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 user is reminded that the device can simulate several types of logic gates, but may respond differently due to the Schmitt action at the inputs.

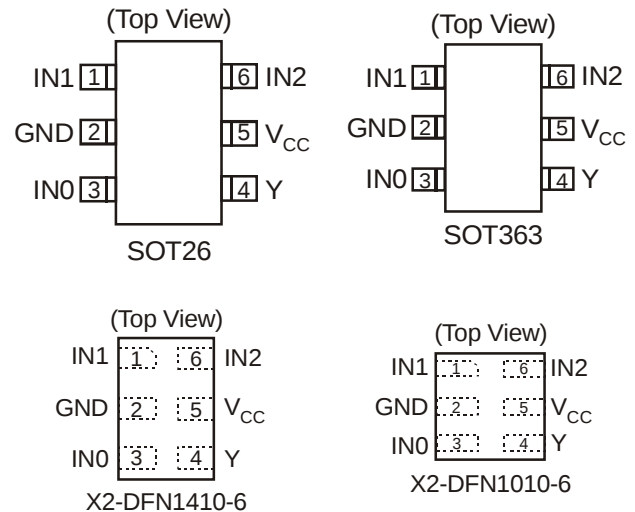
### Features

- 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 II
- Range of Package Options
- SOT26, SOT363, DF1410, and DFN1010: Available in "Green" Molding Compound (no Br, Sb)
- Lead Free Finish/ RoHS Compliant (Note 1)
  - **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
  - **Halogen and Antimony Free. "Green" Device (Note 3)**

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> 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.

### Pin Assignments



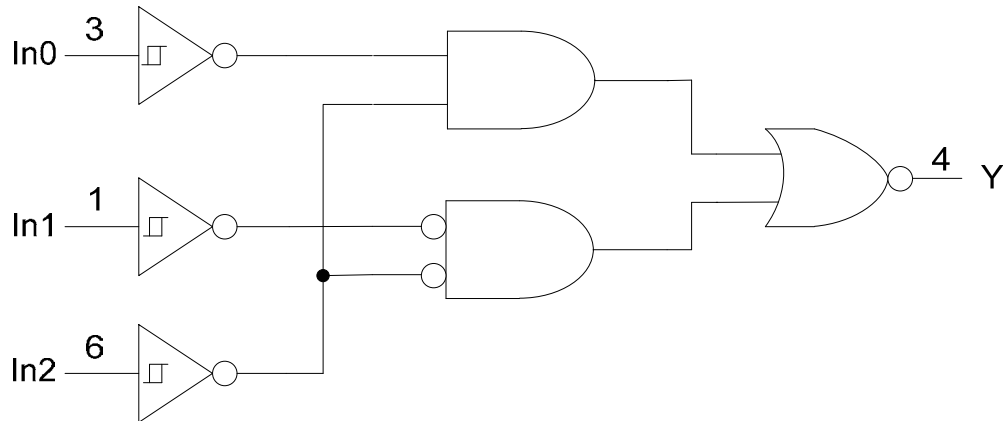
### Applications

- 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

## Pin Descriptions

| Pin Name        | Function       |
|-----------------|----------------|
| IN1             | Data Input     |
| GND             | Ground         |
| IN0             | Data Input     |
| Y               | Data Output    |
| V <sub>CC</sub> | Supply Voltage |
| IN2             | Data Input     |

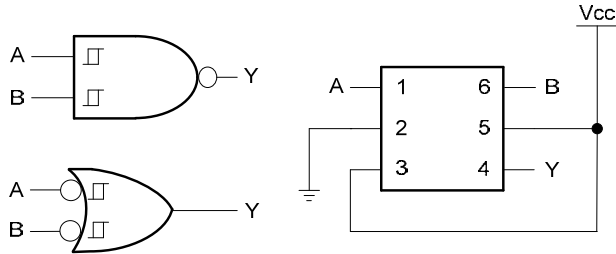
## Logic Diagram



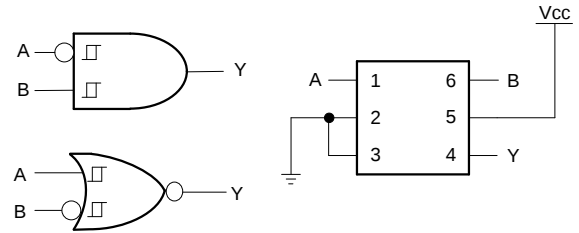
## Function Table

| Inputs |     |     | Output |
|--------|-----|-----|--------|
| IN2    | IN1 | IN0 | Y      |
| L      | L   | L   | L      |
| L      | L   | H   | H      |
| L      | H   | L   | L      |
| L      | H   | H   | H      |
| H      | L   | L   | H      |
| H      | L   | H   | H      |
| H      | H   | L   | L      |
| H      | H   | H   | L      |

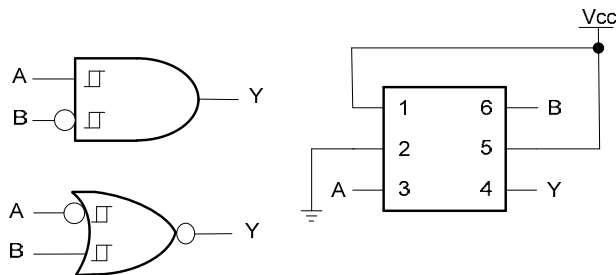
### Logic Configurations



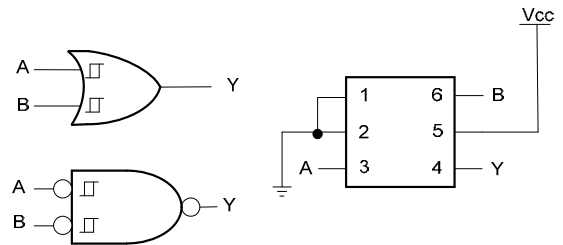
Configuration 1  
2-Input NAND Gate  
2-Input OR Gate with Both Inputs Inverted



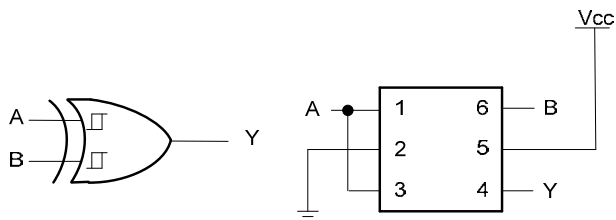
Configuration 2  
2-Input AND Gate with A Input Inverted  
2-Input NOR Gate with B Input Inverted



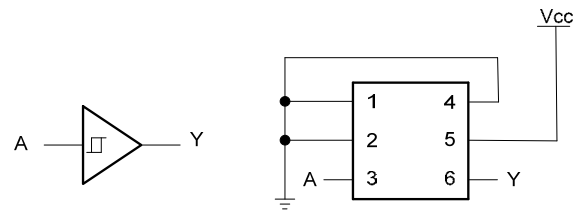
Configuration 3  
2-Input AND Gate with B Input Inverted  
2-Input NOR Gate with A Input Inverted



Configuration 4  
2-Input OR Gate  
2-Input NAND Gate with Both Inputs Inverted



Configuration 5  
2-Input XOR Gate



Configuration 6  
Buffer

| Function Selection Table               |               |
|----------------------------------------|---------------|
| Logic Function                         | Configuration |
| 2-input NAND                           | 1             |
| 2-input NAND with both inputs inverted | 4             |
| 2-input AND with inverted input        | 2, 3          |
| 2-input NOR with inverted input        | 2, 3          |
| 2-input OR                             | 4             |
| 2-input OR with both inputs inverted   | 1             |
| 2-input XOR                            | 5             |
| 1-input Buffer                         | 6             |

### Absolute Maximum Ratings (Note 4)

| Symbol           | Description                                                           | 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   |
|                  | Continuous current through V <sub>DD</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   |

Notes: 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)

| Symbol          | Parameter                          | Min                                         | Max             | Unit |
|-----------------|------------------------------------|---------------------------------------------|-----------------|------|
| V <sub>CC</sub> | Operating Voltage                  | 1.65                                        | 5.5             | V    |
|                 |                                    | 1.5                                         |                 | V    |
| 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-level output current          | V <sub>CC</sub> = 1.65V                     | -4              | mA   |
|                 |                                    | V <sub>CC</sub> = 2.3V                      | -8              |      |
|                 |                                    | V <sub>CC</sub> = 3V                        | -16             |      |
|                 |                                    |                                             | -24             |      |
|                 |                                    | V <sub>CC</sub> = 4.5V                      | -32             |      |
| I <sub>OL</sub> | Low-level output current           | V <sub>CC</sub> = 1.65V                     | 4               | mA   |
|                 |                                    | V <sub>CC</sub> = 2.3V                      | 8               |      |
|                 |                                    | V <sub>CC</sub> = 3V                        | 16              |      |
|                 |                                    |                                             | 24              |      |
|                 |                                    | V <sub>CC</sub> = 4.5V                      | 32              |      |
| Δt/ΔV           | Input transition rise or fall rate | V <sub>CC</sub> = 1.8V ± 0.15V, 2.5V ± 0.2V | 20              | ns/V |
|                 |                                    | V <sub>CC</sub> = 3.3V ± 0.3V               | 10              |      |
|                 |                                    | V <sub>CC</sub> = 5V ± 0.5V                 | 5               |      |
| T <sub>A</sub>  | Operating free-air temperature     | -40                                         | +125            | °C   |

Notes: 5. Unused inputs should be held at V<sub>CC</sub> or Ground.

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

| Symbol          | Parameter                              | Test Conditions                                                        | $V_{CC}$      | Min            | Typ | Max      | Unit          |
|-----------------|----------------------------------------|------------------------------------------------------------------------|---------------|----------------|-----|----------|---------------|
| $V_{T+}$        | Positive-going input threshold voltage |                                                                        | 1.65V         | 0.70           |     | 1.20     |               |
|                 |                                        |                                                                        | 2.3V          | 1.11           |     | 1.60     |               |
|                 |                                        |                                                                        | 3V            | 1.50           |     | 2.00     |               |
|                 |                                        |                                                                        | 4.5V          | 2.16           |     | 2.74     |               |
|                 |                                        |                                                                        | 5.5V          | 2.61           |     | 3.33     |               |
| $V_{T-}$        | Negative-going input threshold voltage |                                                                        | 1.65V         | 0.30           |     | 0.72     |               |
|                 |                                        |                                                                        | 2.3V          | 0.58           |     | 1.00     |               |
|                 |                                        |                                                                        | 3V            | 0.80           |     | 1.30     |               |
|                 |                                        |                                                                        | 4.5V          | 1.21           |     | 1.95     |               |
|                 |                                        |                                                                        | 5.5V          | 1.45           |     | 2.35     |               |
| $\Delta V_T$    | Hysteresis ( $V_{T+} - V_{T-}$ )       |                                                                        | 1.65V         | 0.30           |     | 0.62     |               |
|                 |                                        |                                                                        | 2.3V          | 0.40           |     | 0.80     |               |
|                 |                                        |                                                                        | 3V            | 0.35           |     | 1.00     |               |
|                 |                                        |                                                                        | 4.5V          | 0.55           |     | 1.10     |               |
|                 |                                        |                                                                        | 5.5V          | 0.60           |     | 1.20     |               |
| $V_{OH}$        | 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            |     |          |               |
| $V_{OL}$        | High-level Input 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     |               |
|                 |                                        | $I_{OL} = 32\text{mA}$                                                 | 4.5           |                |     | 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<br>$I_O = 0$                                | 1.65V to 5.5V |                |     | 10       | $\mu\text{A}$ |
| $\Delta I_{CC}$ | Additional Supply Current              | One input at $V_{CC} - 0.6\text{V}$<br>Other inputs at $V_{CC}$ or GND | 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 $V_{CC} = 3.3\text{V}$ , $T_A = +25^{\circ}\text{C}$ )

| Symbol          | Parameter                              | Test Conditions                                                        | $V_{CC}$      | Min            | Typ | Max       | Unit          |
|-----------------|----------------------------------------|------------------------------------------------------------------------|---------------|----------------|-----|-----------|---------------|
| $V_{T+}$        | Positive-going input threshold voltage |                                                                        | 1.65V         | 0.70           |     | 1.20      |               |
|                 |                                        |                                                                        | 2.3V          | 1.11           |     | 1.60      |               |
|                 |                                        |                                                                        | 3V            | 1.50           |     | 2.00      |               |
|                 |                                        |                                                                        | 4.5V          | 2.16           |     | 2.74      |               |
|                 |                                        |                                                                        | 5.5V          | 2.61           |     | 3.33      |               |
| $V_{T-}$        | Negative-going input threshold voltage |                                                                        | 1.65V         | 0.30           |     | 0.75      |               |
|                 |                                        |                                                                        | 2.3V          | 0.58           |     | 1.03      |               |
|                 |                                        |                                                                        | 3V            | 0.80           |     | 1.33      |               |
|                 |                                        |                                                                        | 4.5V          | 1.21           |     | 1.95      |               |
|                 |                                        |                                                                        | 5.5V          | 1.45           |     | 2.35      |               |
| $\Delta V_T$    | Hysteresis ( $V_{T+} - V_{T-}$ )       |                                                                        | 1.65V         | 0.30           |     | 0.62      |               |
|                 |                                        |                                                                        | 2.3V          | 0.37           |     | 0.80      |               |
|                 |                                        |                                                                        | 3V            | 0.32           |     | 1.00      |               |
|                 |                                        |                                                                        | 4.5V          | 0.50           |     | 1.20      |               |
|                 |                                        |                                                                        | 5.5V          | 0.55           |     | 1.40      |               |
| $V_{OH}$        | 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            |     |           |               |
| $V_{OL}$        | High-level Input Voltage               | $I_{OL} = 100\mu\text{A}$                                              | 1.65V to 5.5V |                |     | 0.1       | V             |
|                 |                                        | $I_{OL} = 4\text{mA}$                                                  | 1.65V         |                |     | 0.7       |               |
|                 |                                        | $I_{OL} = 8\text{mA}$                                                  | 2.3V          |                |     | 0.45      |               |
|                 |                                        | $I_{OL} = 16\text{mA}$                                                 | 3V            |                |     | 0.6       |               |
|                 |                                        | $I_{OL} = 24\text{mA}$                                                 |               |                |     | 0.8       |               |
|                 |                                        | $I_{OL} = 32\text{mA}$                                                 | 4.5           |                |     | 0.8       |               |
| $I_I$           | Input Current                          | $V_I = 5.5\text{V}$ or GND                                             | 0 to 5.5V     |                |     | $\pm 100$ | $\mu\text{A}$ |
| $I_{OFF}$       | Power Down Leakage Current             | $V_I$ or $V_O = 5.5\text{V}$                                           | 0             |                |     | $\pm 200$ | $\mu\text{A}$ |
| $I_{CC}$        | Supply Current                         | $V_I = 5.5\text{V}$ of GND<br>$I_O = 0$                                | 1.65V to 5.5V |                |     | 200       | $\mu\text{A}$ |
| $\Delta I_{CC}$ | Additional Supply Current              | One input at $V_{CC} - 0.6\text{V}$<br>Other inputs at $V_{CC}$ or GND | 3V to 5.5V    |                |     | 5000      | $\mu\text{A}$ |

### Electrical Characteristics (All typical values are at $V_{CC} = 3.3V$ , $T_A = +25^\circ C$ )

| 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 |     |              |

Notes: 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

$T_A = -40^\circ C$  to  $+85^\circ C$ ,  $C_L = 30$  or  $50pF$  as noted (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                       | 14.4 | 0.7                      | 8.3 | 0.7                      | 6.3 | 0.7                    | 5.1 | ns   |

$T_A = -40^\circ C$  to  $+125^\circ C$ ,  $C_L = 30$  or  $50pF$  as noted (see Figure 1)

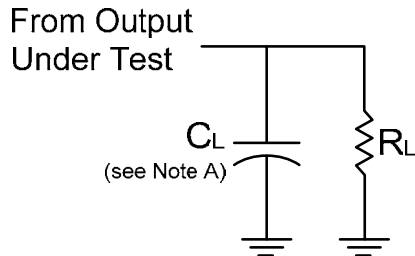
| Parameter | From (Input) | TO (OUTPUT) | $V_{CC} = 1.8V \pm 0.15V$ |      | $V_{CC} = 2.5V \pm 0.2V$ |      | $V_{CC} = 3.3V \pm 0.3V$ |     | $V_{CC} = 5V \pm 0.5V$ |     | Unit |
|-----------|--------------|-------------|---------------------------|------|--------------------------|------|--------------------------|-----|------------------------|-----|------|
|           |              |             | Min                       | Max  | Min                      | Max  | Min                      | Max | Min                    | Max |      |
| $t_{pd}$  | Any          | Y           | 1.0                       | 18.0 | 0.7                      | 10.4 | 0.7                      | 7.9 | 0.7                    | 6.4 | ns   |

### Operating Characteristics

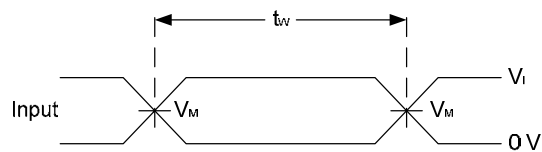
$T_A = +25^\circ C$

| Parameter |                               | Test Conditions      | $V_{CC} = 1.8V$ | $V_{CC} = 2.5V$ | $V_{CC} = 3.3V$ | $V_{CC} = 5V$ | Unit |
|-----------|-------------------------------|----------------------|-----------------|-----------------|-----------------|---------------|------|
|           |                               |                      | Typ.            | Typ.            | Typ.            | Typ.          |      |
| $C_{pd}$  | Power dissipation capacitance | $f = 10 \text{ MHz}$ | 22              | 22              | 23              | 24            | pF   |

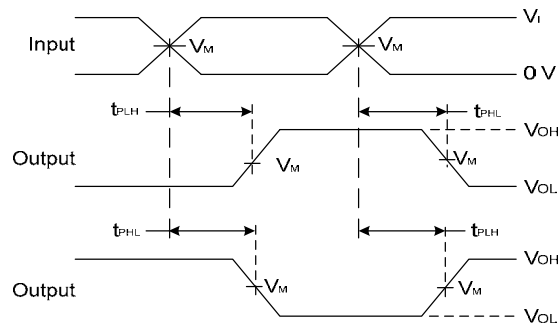
## Parameter Measurement Information



| $V_{CC}$         | 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 $\Omega$ |



**Voltage Waveform  
Pulse Duration**



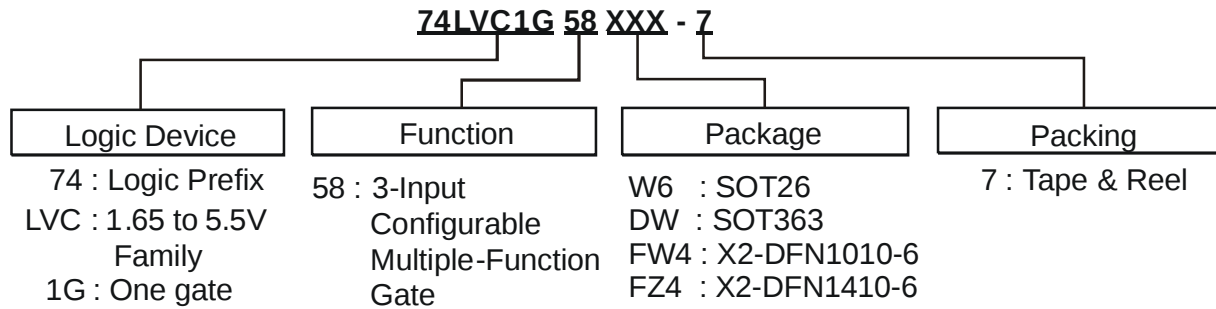
**Voltage Waveform  
Propagation Delay Times  
Inverting and Non Inverting Outputs**

**Figure 1. Load Circuit and Voltage Waveforms**

Notes:

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

### Ordering Information

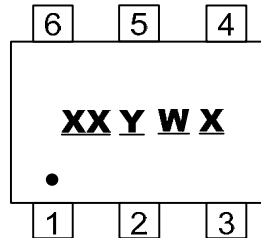


| Device                                                                                            | Package Code | Packaging<br>(Note 7) | 7" Tape and Reel |                    |
|---------------------------------------------------------------------------------------------------|--------------|-----------------------|------------------|--------------------|
|                                                                                                   |              |                       | Quantity         | Part Number Suffix |
|  74LVC1G58W6-7   | W6           | SOT26                 | 3000/Tape & Reel | -7                 |
|  74LVC1G58DW-7   | DW           | SOT363                | 3000/Tape & Reel | -7                 |
|  74LVC1G58FW4-7  | FW4          | X2-DFN1010-6          | 5000/Tape & Reel | -7                 |
|  74LVC1G58FZ4-7 | FZ4          | X2-DFN1410-6          | 5000/Tape & Reel | -7                 |

Notes: 7. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

## Marking Information

### (1) SOT26, SOT363

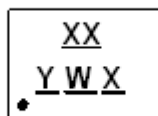


XX : Identification code  
Y : Year 0~9  
W : Week : A~Z : 1~26 week;  
a~z : 27~52 week; z represents  
52 and 53 week  
X : A~Z : Internal Code

| Part Number | Package | Identification Code |
|-------------|---------|---------------------|
| 74LVC1G58W6 | SOT26   | TX                  |
| 74LVC1G58DW | SOT363  | TX                  |

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

#### (Top View)

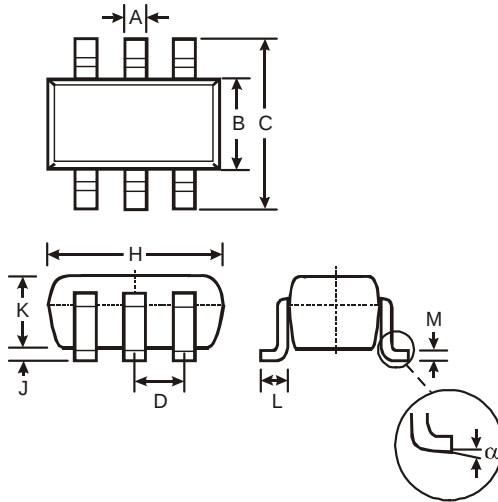


XX : Identification Code  
Y : Year : 0~9  
W : Week : A~Z : 1~26 week;  
a~z : 27~52 week; z represents  
52 and 53 week  
X : A~Z : Internal code

| Part Number  | Package      | Identification Code |
|--------------|--------------|---------------------|
| 74LVC1G58FW4 | X2-DFN1010-6 | TX                  |
| 74LVC1G58FZ4 | X2-DFN1410-6 | TX                  |

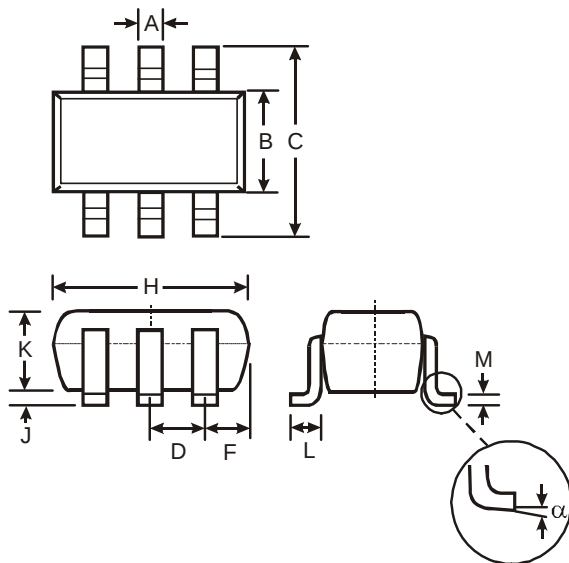
**Package Outline Dimensions (All Dimensions in mm)**

**(1) 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 |
| $\alpha$             | 0°    | 8°   | —    |
| All Dimensions in mm |       |      |      |

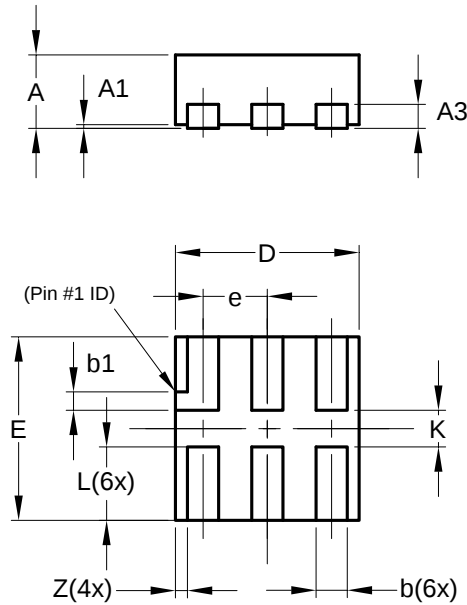
**(2) SOT363**



| 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 |
| $\alpha$             | 0°       | 8°   |
| All Dimensions in mm |          |      |

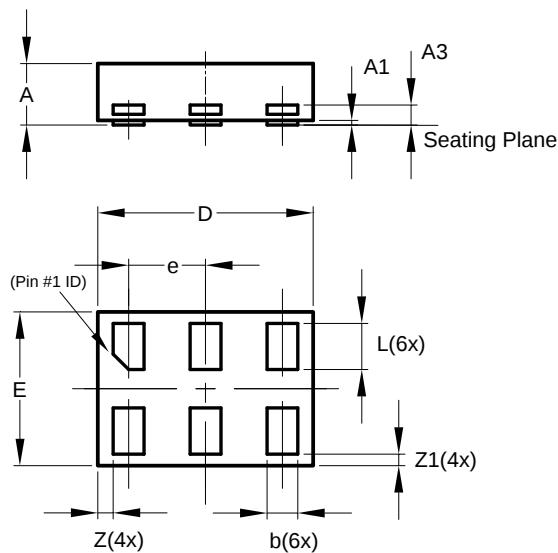
**Package Outline Dimensions (All Dimensions in mm)**

**(3) X2-DFN1010-6**



| 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 |      |      |       |

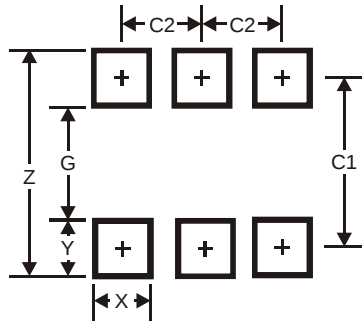
**(4) X2-DFN1410-6**



| 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 |
| All Dimensions in mm |       |       |       |

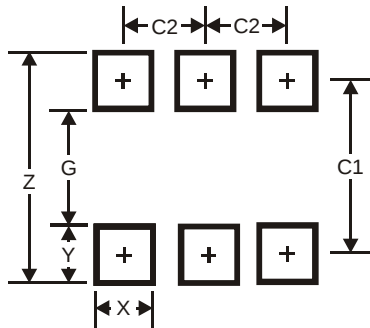
## Suggest Pad Layout

### (1) SOT26



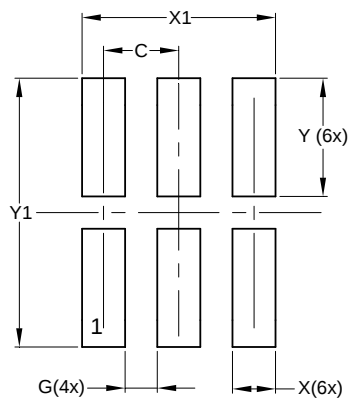
| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 3.20          |
| G          | 1.60          |
| X          | 0.55          |
| Y          | 0.80          |
| C1         | 2.40          |
| C2         | 0.95          |

### (2) SOT363



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

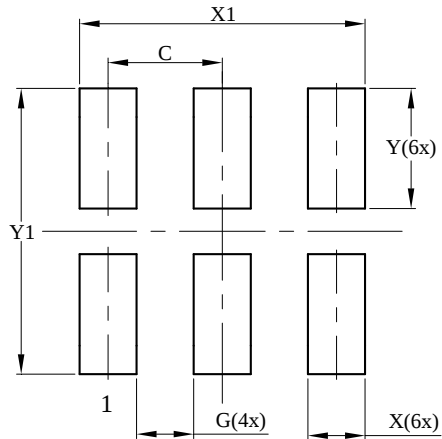
### (3) X2-DFN1010-6



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

## Suggest Pad Layout

### (4) X2-DFN1410-6



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

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)