



**THE DATASHEET OF  
74LVC1G04FW5-7**



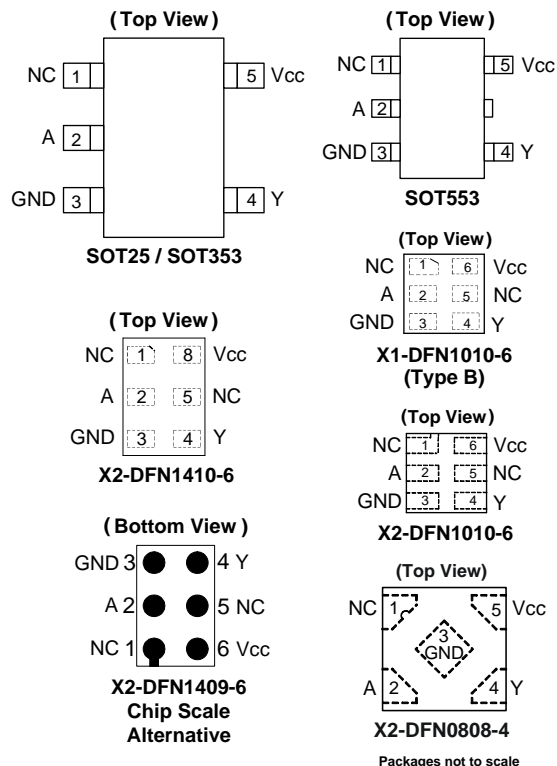
## Description

The 74LVC1G04 is a single inverter 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 I<sub>OFF</sub>. The I<sub>OFF</sub> circuitry disables the output, preventing damaging current backflow when the device is powered down.

The gate performs the positive Boolean function:

$$Y = \overline{A}$$

## Pin Assignments



## Features

- Wide Supply Voltage Range from 1.65 to 5.5V
- ± 24mA Output Drive at 3.3V
- CMOS Low Power Consumption
- I<sub>OFF</sub> Supports Partial-Power-Down Mode Operation
- Inputs Accept Up to 5.5V
- ESD Protection Tested per JESD 22
  - Exceeds 200-V Machine Model (A115)
  - Exceeds 2000-V Human Body Model (A114)
  - Exceeds 1000-V Charged Device Model (C101)
- Latch-Up Exceeds 100mA per JESD 78, Class I
- Range of Package Options
- Direct Interface with TTL Levels
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/contact-us) or your local Diodes representative.**  
<https://www.diodes.com/quality/product-definitions/>

## Applications

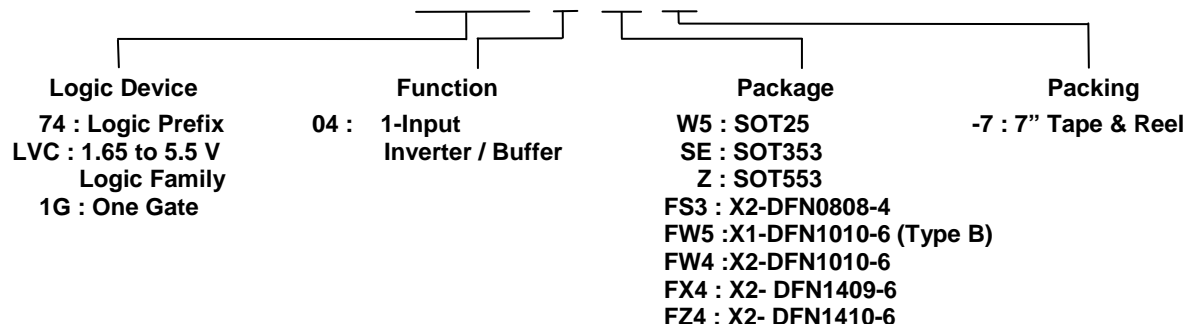
- Voltage Level Shifting
- General Purpose Logic
- Power Down Signal Isolation
- Wide array of products such as:
  - PCs, Networking, Notebooks, Netbooks, PDAs
  - Tablet Computers, E-readers
  - Computer Peripherals, Hard Drives, CD/DVD ROM
  - TV, DVD, DVR, Set Top Box
  - Cell Phones, Personal Navigation/GPS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

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> 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.

**Ordering Information** (Note 4)

**74 LVC1G 04 XXX -7**



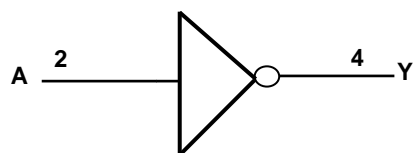
| Part Number    | Package Code | Package (Notes 5 & 6)                  | Package Size  | 7" Tape and Reel  |                    |
|----------------|--------------|--|---|-------------------|--------------------|
|                |              |  |   | Quantity          | Part Number Suffix |
| 74LVC1G04W5-7  | W5           | SOT25                                  | 3.0mm x 2.8mm x 1.2mm<br>0.95 mm lead pitch           | 3,000/Tape & Reel | -7                 |
| 74LVC1G04SE-7  | SE           | SOT353                                 | 2.0mm x 2.0mm x 1.1mm<br>0.65 mm lead pitch           | 3,000/Tape & Reel | -7                 |
| 74LVC1G04Z-7   | Z            | SOT553                                 | 1.6mm x 1.6 mm x 0.62mm<br>0.5 mm lead pitch          | 4,000/Tape & Reel | -7                 |
| 74LVC1G04FS3-7 | FS3          | X2-DFN0808-4                           | 0.8mm x 0.8 mm x 0.35mm<br>0.5 mm pad pitch (diamond) | 5,000/Tape & Reel | -7                 |
| 74LVC1G04FW5-7 | FW5          | X1-DFN1010-6<br>(Type B)               | 1.0mm x 1.0mm x 0.5mm<br>0.35 mm pad pitch            | 5,000/Tape & Reel | -7                 |
| 74LVC1G04FW4-7 | FW4          | X2-DFN1010-6                           | 1.0mm x 1.0mm x 0.4mm<br>0.35 mm pad pitch            | 5,000/Tape & Reel | -7                 |
| 74LVC1G04FX4-7 | FX4          | X2-DFN1409-6<br>Chip scale alternative | 1.4mm x 0.9mm x 0.4mm<br>0.5 mm pad pitch             | 5,000/Tape & Reel | -7                 |
| 74LVC1G04FZ4-7 | FZ4          | X2-DFN1410-6                           | 1.4mm x 1.0mm x 0.4mm<br>0.5 mm pad pitch             | 5,000/Tape & Reel | -7                 |

Notes: 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.  
 5. Pad layout as shown on Diodes Inc. suggested pad layout document which can be found on our website at <http://www.diodes.com/package-outlines.html>  
 6. The taping orientation is located on our website at <http://www.diodes.com/package-outlines.html>.

**Pin Descriptions**

| Pin Name        | Description    |
|-----------------|----------------|
| NC              | No Connection  |
| A               | Data Input     |
| GND             | Ground         |
| Y               | Data Output    |
| V <sub>CC</sub> | Supply Voltage |

**Logic Diagram**



**Function Table**

| Inputs | Output |
|--------|--------|
| A      | Y      |
| H      | L      |
| L      | H      |

**Absolute Maximum Ratings** (Notes 7 & 8) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Symbol                            | Description   | Rating                       | Unit |
|-----------------------------------|---|------------------------------|------|
| ESD HBM                           | Human Body Model ESD Protection                                       | 2                            | kV   |
| ESD CDM                           | Charged Device Model ESD Protection                                   | 1                            | 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.                       | -0.5 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</sub> , I <sub>GN</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   |

- Notes:
- 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.
  - Forcing the maximum allowed voltage could cause a condition exceeding the maximum current or conversely forcing the maximum current could cause a condition exceeding the maximum voltage. The ratings of both current and voltage must be maintained within the controlled range.

**Recommended Operating Conditions** (Note 9) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Symbol          | Parameter                          | Min   | Max                    | Unit                   |      |
|-----------------|------------------------------------|---|------------------------|------------------------|------|
| V <sub>CC</sub> | Operating Voltage                  | Operating                                   | 1.65                   | 5.5                    | V    |
|                 |                                    | Data retention only                         | 1.5                    | —                      | V    |
| V <sub>IH</sub> | High-Level Input Voltage           | V <sub>CC</sub> = 1.65V to 1.95V            | 0.65 x V <sub>CC</sub> | —                      | V    |
|                 |                                    | V <sub>CC</sub> = 2.3V to 2.7V              | 1.7                    | —                      |      |
|                 |                                    | V <sub>CC</sub> = 3V to 3.6V                | 2                      | —                      |      |
|                 |                                    | V <sub>CC</sub> = 4.5V to 5.5V              | 0.7 x V <sub>CC</sub>  | —                      |      |
| V <sub>IL</sub> | Low-Level Input Voltage            | V <sub>CC</sub> = 1.65V to 1.95V            | —                      | 0.35 x V <sub>CC</sub> | V    |
|                 |                                    | V <sub>CC</sub> = 2.3V to 2.7V              | —                      | 0.7                    |      |
|                 |                                    | V <sub>CC</sub> = 3V to 3.6V                | —                      | 0.8                    |      |
|                 |                                    | V <sub>CC</sub> = 4.5V to 5.5V              | —                      | 0.3 x V <sub>CC</sub>  |      |
| 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> = 2.7V                      | —                      | -12                    |      |
|                 |                                    | V <sub>CC</sub> = 3V                        | —                      | -16                    |      |
|                 |                                    | V <sub>CC</sub> = 4.5V                      | —                      | -24                    |      |
| 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> = 2.7V                      | —                      | 12                     |      |
|                 |                                    | V <sub>CC</sub> = 3V                        | —                      | 16                     |      |
|                 |                                    | V <sub>CC</sub> = 4.5V                      | —                      | 24                     |      |
| 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   |

- Note: 9. Unused inputs should be held at V<sub>CC</sub> or Ground.

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

| Symbol          | Parameter                  | Test Conditions                  | $V_{CC}$      | -40°C to +85°C |           |          | -40°C to +125°C |          | Unit    |
|-----------------|----------------------------|----------------------------------|---------------|----------------|-----------|----------|-----------------|----------|---------|
|                 |                            |                                  |               | Min            | Typ.      | Max      | Min             | Max      |         |
| $V_{OH}$        | High-Level Output Voltage  | $I_{OH} = -100\mu A$             | 1.65V to 5.5V | $V_{CC} - 0.1$ | —         | —        | $V_{CC} - 0.1$  | —        | V       |
|                 |                            | $I_{OH} = -4mA$                  | 1.65V         | 1.2            | —         | —        | 0.95            | —        |         |
|                 |                            | $I_{OH} = -8mA$                  | 2.3V          | 1.9            | —         | —        | 1.7             | —        |         |
|                 |                            | $I_{OH} = -12mA$                 | 2.7V          | 2.2            | —         | —        | 1.9             | —        |         |
|                 |                            | $I_{OH} = -16mA$                 | 3V            | 2.4            | —         | —        | 2.2             | —        |         |
|                 |                            | $I_{OH} = -24mA$                 |               | 2.3            | —         | —        | 2.0             | —        |         |
|                 |                            | $I_{OH} = -32mA$                 | 4.5V          | 3.8            | —         | —        | 3.4             | —        |         |
| $V_{OL}$        | Low-Level Output Voltage   | $I_{OL} = 100\mu A$              | 1.65V to 5.5V | —              | —         | 0.1      | —               | 0.1      | V       |
|                 |                            | $I_{OL} = 4mA$                   | 1.65V         | —              | —         | 0.45     | —               | 0.45     |         |
|                 |                            | $I_{OL} = 8mA$                   | 2.3V          | —              | —         | 0.3      | —               | 0.3      |         |
|                 |                            | $I_{OL} = 12mA$                  | 2.7V          | —              | —         | 0.4      | —               | 0.6      |         |
|                 |                            | $I_{OL} = 16mA$                  | 3V            | —              | —         | 0.4      | —               | 0.4      |         |
|                 |                            | $I_{OL} = 24mA$                  |               | —              | —         | 0.55     | —               | 0.55     |         |
|                 |                            | $I_{OL} = 32mA$                  | 4.5V          | —              | —         | 0.55     | —               | 0.55     |         |
| $I_I$           | Input Current              | $V_I = 5.5V$ or GND              | 0 to 5.5V     | —              | $\pm 0.1$ | $\pm 5$  | —               | $\pm 5$  | $\mu A$ |
| $I_{OFF}$       | Power Down Leakage Current | $V_I$ or $V_O = 5.5V$            | 0V            | —              | —         | $\pm 10$ | —               | $\pm 10$ | $\mu A$ |
| $I_{CC}$        | Supply Current             | $V_I = 5.5V$ or GND<br>$I_O = 0$ | 5.5V          | —              | 0.1       | 10       | —               | 10       | $\mu A$ |
| $\Delta I_{CC}$ | Additional Supply Current  | Input at $V_{CC} - 0.6V$         | 3V to 5.5V    | —              | —         | 500      | —               | 5,000    | $\mu A$ |
| $C_i$           | Input Capacitance          | $V_i = V_{CC} -$ or GND          | 3.3V          | —              | 5         | —        | —               | —        | pF      |

**Package 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         |
|---------------|--|-----------------------|-----------|-----|-----|-----|--------------|
| $\theta_{JA}$ | Thermal Resistance Junction-to-Ambient | SOT25                 | (Note 10) | —   | 204 | —   | $^\circ C/W$ |
|               |  | SOT353                |           | —   | 371 | —   |              |
|               |  | SOT553                |           | —   | 231 | —   |              |
|               |  | X2-DFN0808-4          |           | —   | 400 | —   |              |
|               |  | X1-DFN1010-6 (Type B) |           | —   | 435 | —   |              |
|               |  | X2-DFN1010-6          |           | —   | 445 | —   |              |
|               |  | X2-DFN1409-6          |           | —   | 470 | —   |              |
|               |  | X2-DFN1410-6          |           | —   | 460 | —   |              |
| $\theta_{JC}$ | Thermal Resistance Junction-to-Case    | SOT25                 | (Note 10) | —   | 52  | —   | $^\circ C/W$ |
|               |  | SOT353                |           | —   | 143 | —   |              |
|               |  | SOT553                |           | —   | 105 | —   |              |
|               |  | X2-DFN0808-4          |           | —   | 225 | —   |              |
|               |  | X1-DFN1010-6 (Type B) |           | —   | 250 | —   |              |
|               |  | X2-DFN1010-6          |           | —   | 250 | —   |              |
|               |  | X2-DFN1409-6          |           | —   | 275 | —   |              |
|               |  | X2-DFN1410-6          |           | —   | 265 | —   |              |

Note: 10. Test condition for each of the 8 package types: Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

## Switching Characteristics

Figure 1 Typical Values at  $T_A = +25^\circ\text{C}$  and nominal voltages 1.8V, 2.5V, 2.7V, 3.3V, and 5.0V.

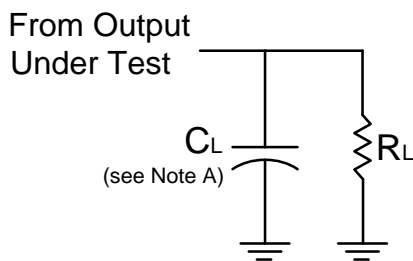
| Parameter       | From Input | To Output | V <sub>CC</sub> | T <sub>A</sub> = -40°C to +85°C |     |     | T <sub>A</sub> = -40°C to +125°C |     | Unit |
|-----------------|------------|-----------|-----------------|---------------------------------|-----|-----|----------------------------------|-----|------|
|                 |            |           |                 | Min                             | Typ | Max | Min                              | Max |      |
| t <sub>pd</sub> | A or B     | Y         | 1.8V ± 0.15V    | 1.0                             | 3.0 | 7.5 | 1.0                              | 9.5 | ns   |
|                 |            |           | 2.5V ± 0.2V     | 0.5                             | 2.0 | 5.0 | 0.5                              | 6.5 |      |
|                 |            |           | 2.7V            | 0.5                             | 2.3 | 5.2 | 0.5                              | 7.0 |      |
|                 |            |           | 3.3V ± 0.3V     | 0.5                             | 2.0 | 4.2 | 0.5                              | 5.5 |      |
|                 |            |           | 5.0V ± 0.5V     | 0.5                             | 1.6 | 3.7 | 0.5                              | 5.0 |      |

## Operating Characteristics

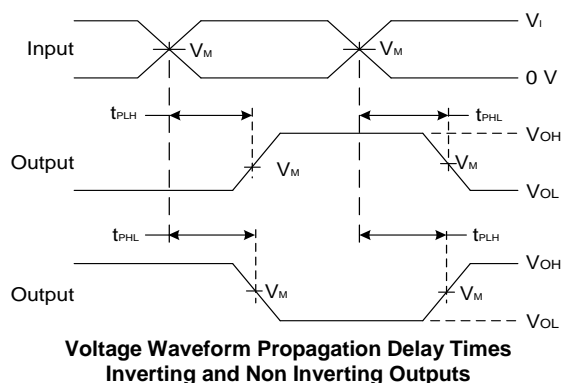
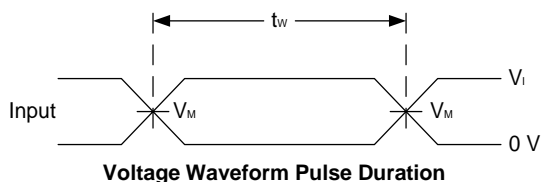
T<sub>A</sub> = +25°C

| Parameter       |                               | Test Conditions | V <sub>CC</sub> = 1.8V | V <sub>CC</sub> = 2.5V | V <sub>CC</sub> = 3.3V | V <sub>CC</sub> = 5V | Unit |
|-----------------|-------------------------------|-----------------|------------------------|------------------------|------------------------|----------------------|------|
|                 |                               |                 | Typ                    | Typ                    | Typ                    | Typ                  |      |
| C <sub>pd</sub> | Power Dissipation Capacitance | f = 10MHz       | 16                     | 16                     | 16                     | 16                   | pF   |

**Parameter Measurement Information**



| V <sub>CC</sub> | Inputs          |                                | V <sub>M</sub>     | C <sub>L</sub> | R <sub>L</sub> |
|-----------------|-----------------|--------------------------------|--------------------|----------------|----------------|
|                 | V <sub>I</sub>  | t <sub>r</sub> /t <sub>f</sub> |                    |                |                |
| 1.8V ± 0.15V    | V <sub>CC</sub> | ≤2ns                           | V <sub>CC</sub> /2 | 30pF           | 1kΩ            |
| 2.5V ± 0.2V     | V <sub>CC</sub> | ≤2ns                           | V <sub>CC</sub> /2 | 30pF           | 500Ω           |
| 2.7V            | V <sub>CC</sub> | ≤2.5ns                         | 1.5V               | 50pF           | 500Ω           |
| 3.3V ± 0.3V     | 3.0V            | ≤2.5ns                         | 1.5V               | 50pF           | 500Ω           |
| 5.0V ± 0.5V     | V <sub>CC</sub> | ≤2.5ns                         | V <sub>CC</sub> /2 | 50pF           | 500Ω           |

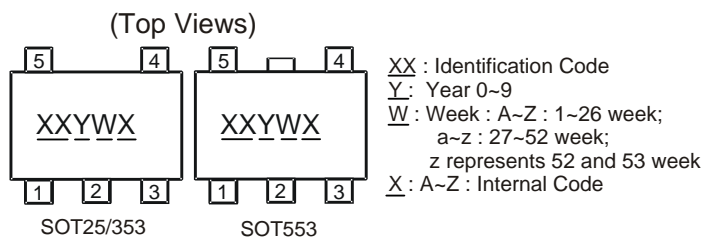


**Figure 1 Load Circuit and Voltage Waveforms**

- Notes:
- A. Includes test lead and test apparatus capacitance.
  - B. All pulses are supplied at pulse repetition rate ≤ 10MHz.
  - C. t<sub>PLH</sub> and t<sub>PHL</sub> are the same as t<sub>PD</sub>.

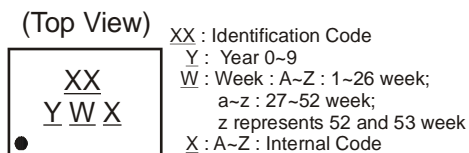
## Marking Information

### (1) SOT25, SOT353 and SOT553



| Part Number   | Package | Identification Code |
|---------------|---------|---------------------|
| 74LVC1G04W5-7 | SOT25   | UU                  |
| 74LVC1G04SE-7 | SOT353  | UU                  |
| 74LVC1G04Z-7  | SOT553  | UU                  |

### (2) DFN Packages

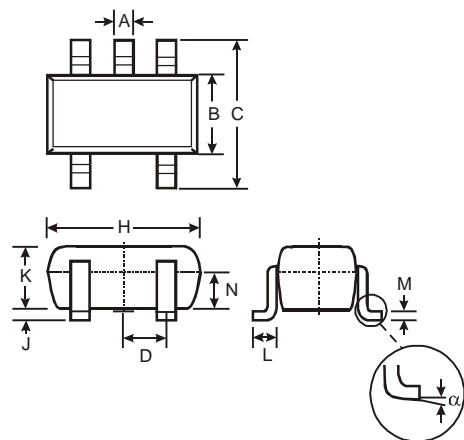


| Part Number    | Package               | Identification Code |
|----------------|-----------------------|---------------------|
| 74LVC1G04FS3-7 | X2-DFN0808-4          | WU                  |
| 74LVC1G04FW5-7 | X1-DFN1010-6 (Type B) | V4                  |
| 74LVC1G04FW4-7 | X2-DFN1010-6          | UU                  |
| 74LVC1G04FX4-7 | X2-DFN1409-6          | MC                  |
| 74LVC1G04FZ4-7 | X2-DFN1410-6          | UU                  |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT25

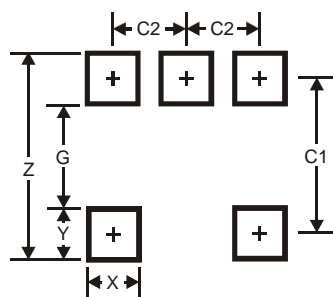


| SOT25                |       |      |      |
|----------------------|-------|------|------|
| Dim                  | Min   | Max  | Typ  |
| A                    | 0.35  | 0.50 | 0.38 |
| B                    | 1.50  | 1.70 | 1.60 |
| C                    | 2.70  | 3.00 | 2.80 |
| D                    | -     | -    | 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 |
| N                    | 0.70  | 0.80 | 0.75 |
| $\alpha$             | 0°    | 8°   | -    |
| All Dimensions in mm |       |      |      |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT25

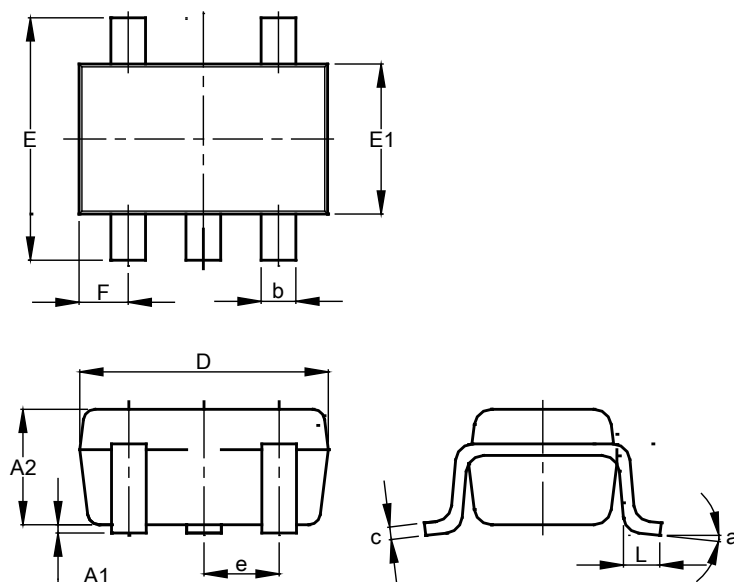


| Dimensions | Value |
|------------|-------|
| Z          | 3.20  |
| G          | 1.60  |
| X          | 0.55  |
| Y          | 0.80  |
| C1         | 2.40  |
| C2         | 0.95  |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT353

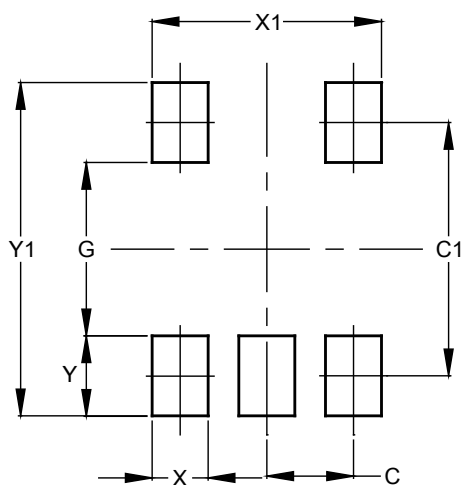


| SOT353               |           |      |       |
|----------------------|-----------|------|-------|
| Dim                  | Min       | Max  | Typ   |
| A1                   | 0.00      | 0.10 | 0.05  |
| A2                   | 0.90      | 1.00 | 1.00  |
| b                    | 0.10      | 0.30 | 0.25  |
| c                    | 0.10      | 0.22 | 0.11  |
| D                    | 1.80      | 2.20 | 2.15  |
| E                    | 2.00      | 2.20 | 2.10  |
| E1                   | 1.15      | 1.35 | 1.30  |
| e                    | 0.650 BSC |      |       |
| F                    | 0.40      | 0.45 | 0.425 |
| L                    | 0.25      | 0.40 | 0.30  |
| a                    | 0°        | 8°   | --    |
| All Dimensions in mm |           |      |       |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT353

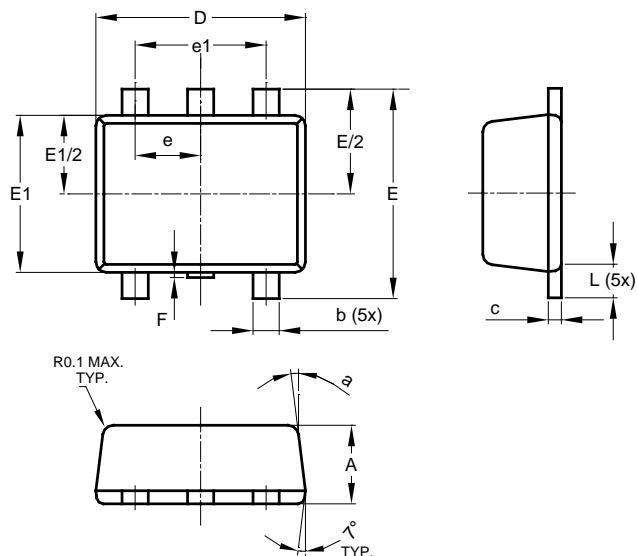


| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 0.650         |
| C1         | 1.900         |
| G          | 1.300         |
| X          | 0.420         |
| X1         | 1.720         |
| Y          | 0.600         |
| Y1         | 2.500         |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT553

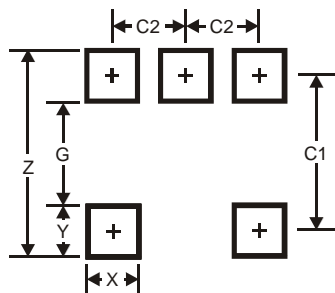


| SOT553               |          |      |      |
|----------------------|----------|------|------|
| Dim                  | Min      | Max  | Typ  |
| A                    | 0.55     | 0.62 | 0.60 |
| b                    | 0.15     | 0.30 | 0.20 |
| c                    | 0.10     | 0.18 | 0.15 |
| D                    | 1.50     | 1.70 | 1.60 |
| E                    | 1.55     | 1.70 | 1.60 |
| E1                   | 1.10     | 1.25 | 1.20 |
| e                    | 0.50 BSC |      |      |
| e1                   | 1.00 BSC |      |      |
| F                    | 0.00     | 0.10 | —    |
| L                    | 0.10     | 0.30 | 0.20 |
| a                    | 6°       | 8°   | 7°   |
| All Dimensions in mm |          |      |      |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT553

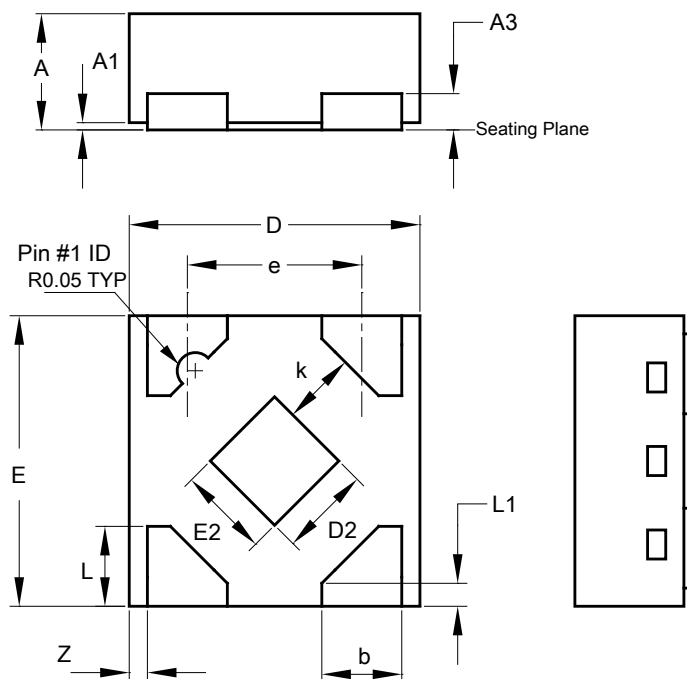


| Dimensions | Value |
|------------|-------|
| Z          | 2.2   |
| G          | 1.2   |
| X          | 0.375 |
| Y          | 0.5   |
| C1         | 1.7   |
| C2         | 0.5   |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**X2-DFN0808-4**

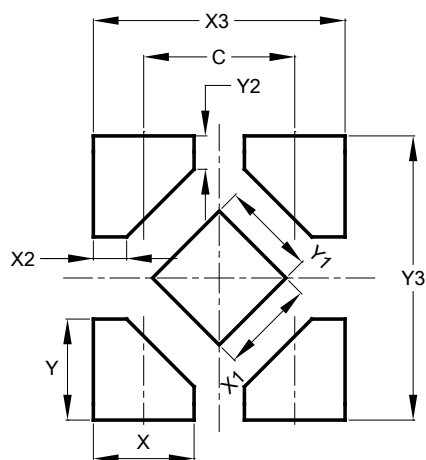


| X2-DFN0808-4         |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 0.25 | 0.35 | 0.30 |
| A1                   | 0    | 0.04 | 0.02 |
| A3                   | -    | -    | 0.13 |
| b                    | 0.17 | 0.27 | 0.22 |
| D                    | 0.75 | 0.85 | 0.80 |
| D2                   | 0.15 | 0.35 | 0.25 |
| E                    | 0.75 | 0.85 | 0.80 |
| E2                   | 0.15 | 0.35 | 0.25 |
| e                    | -    | -    | 0.48 |
| k                    | 0.20 | -    | -    |
| L                    | 0.17 | 0.27 | 0.22 |
| L1                   | 0.02 | 0.12 | 0.07 |
| z                    | -    | -    | 0.05 |
| All Dimensions in mm |      |      |      |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**X2-DFN0808-4**

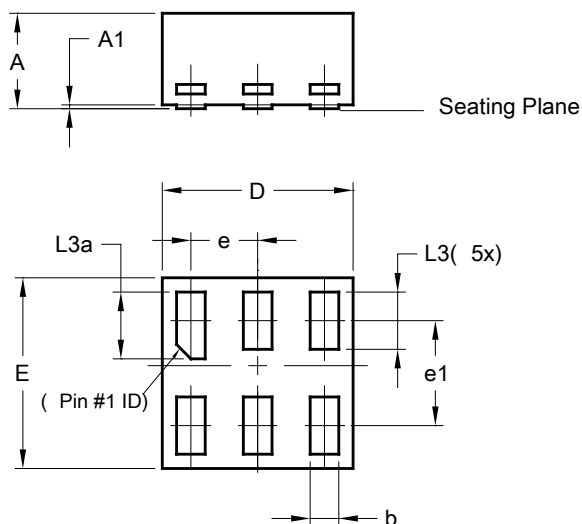


| Dimensions | Value |
|------------|-------|
| C          | 0.480 |
| X          | 0.320 |
| X1         | 0.300 |
| X2         | 0.106 |
| X3         | 0.800 |
| Y          | 0.320 |
| Y1         | 0.300 |
| Y2         | 0.106 |
| Y3         | 0.900 |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

X1-DFN1010-6 (Type B)

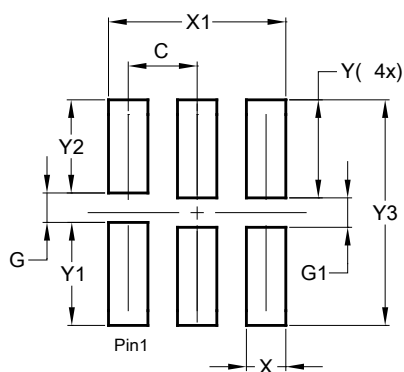


| X1-DFN1010-6<br>(Type B) |          |       |      |
|--------------------------|----------|-------|------|
| Dim                      | Min      | Max   | Typ  |
| A                        | -        | 0.50  | 0.39 |
| A1                       | -        | 0.04  | -    |
| b                        | 0.12     | 0.20  | 0.15 |
| D                        | 0.95     | 1.050 | 1.00 |
| E                        | 0.95     | 1.050 | 1.00 |
| e                        | 0.35 BSC |       |      |
| e1                       | 0.55 BSC |       |      |
| L3                       | 0.27     | 0.30  | 0.30 |
| L3a                      | 0.32     | 0.40  | 0.35 |
| All Dimensions in mm     |          |       |      |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

X1-DFN1010-6 (Type B)

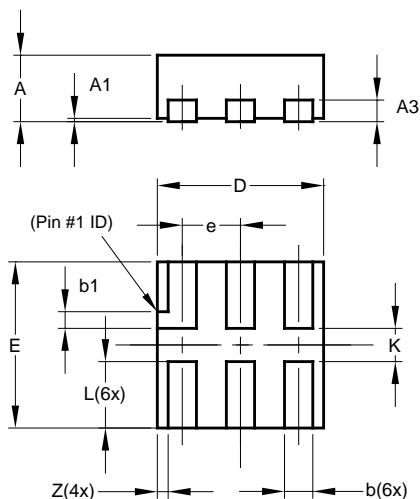


| Dimensions | Value<br>(in mm) |
|------------|------------------|
| C          | 0.350            |
| G          | 0.150            |
| G1         | 0.150            |
| X          | 0.200            |
| X1         | 0.900            |
| Y          | 0.500            |
| Y1         | 0.525            |
| Y2         | 0.475            |
| Y3         | 1.150            |

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**X2-DFN1010-6**

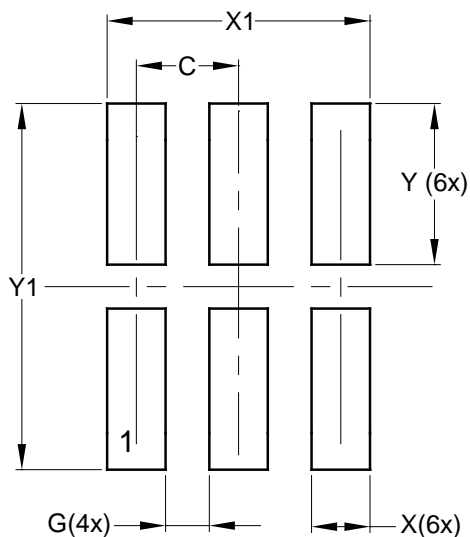


| X2-DFN1010-6         |      |      |       |
|----------------------|------|------|-------|
| Dim                  | Min  | Max  | Typ   |
| A                    | —    | 0.40 | 0.39  |
| A1                   | 0.00 | 0.05 | 0.02  |
| A3                   | —    | —    | 0.13  |
| b                    | 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 |      |      |       |

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**X2-DFN1010-6**

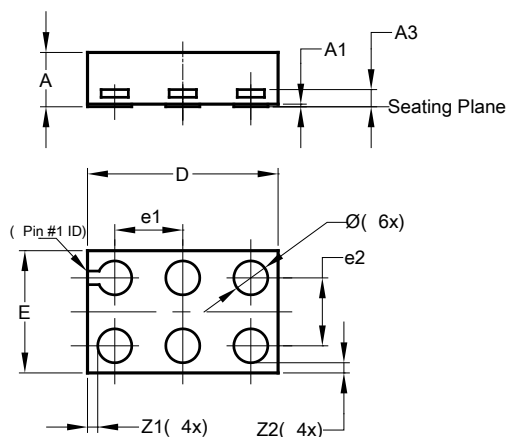


| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 0.350         |
| G          | 0.150         |
| X          | 0.200         |
| X1         | 0.900         |
| Y          | 0.550         |
| Y1         | 1.250         |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### X2-DFN1409-6 CHIP SCALE ALTERNATIVE

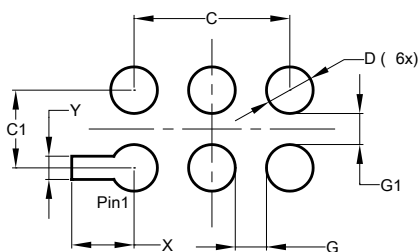


| X2-DFN1409-6                |      |      |       |
|-----------------------------|------|------|-------|
| Dim                         | Min  | Max  | Typ   |
| A                           | -    | 0.40 | 0.39  |
| A1                          | 0    | 0.05 | 0.02  |
| A3                          | -    | -    | 0.13  |
| Ø                           | 0.20 | 0.30 | 0.25  |
| D                           | 1.35 | 1.45 | 1.40  |
| E                           | 0.85 | 0.95 | 0.90  |
| e1                          | -    | -    | 0.50  |
| e2                          | -    | -    | 0.50  |
| Z1                          | -    | -    | 0.075 |
| Z2                          | -    | -    | 0.075 |
| <b>All Dimensions in mm</b> |      |      |       |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### X2-DFN1409-6 CHIP SCALE ALTERNATIVE

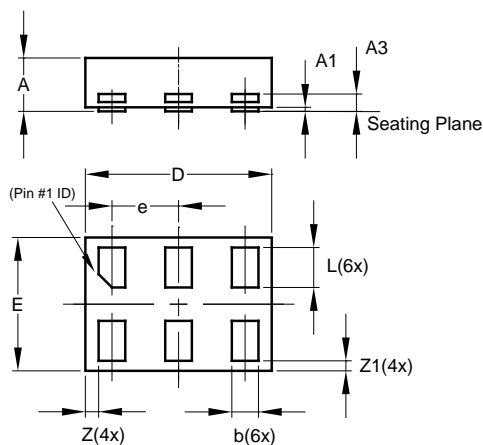


| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 1.000         |
| C1         | 0.500         |
| D          | 0.300         |
| G          | 0.200         |
| G1         | 0.200         |
| X          | 0.400         |
| Y          | 0.150         |

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### X2-DFN1410-6

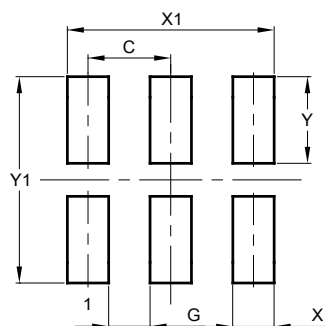


| X2-DFN1410-6         |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Max   | Typ   |
| A                    | —     | 0.40  | 0.39  |
| A1                   | 0.00  | 0.05  | 0.02  |
| A3                   | —     | —     | 0.13  |
| b                    | 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 |       |       |       |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### 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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