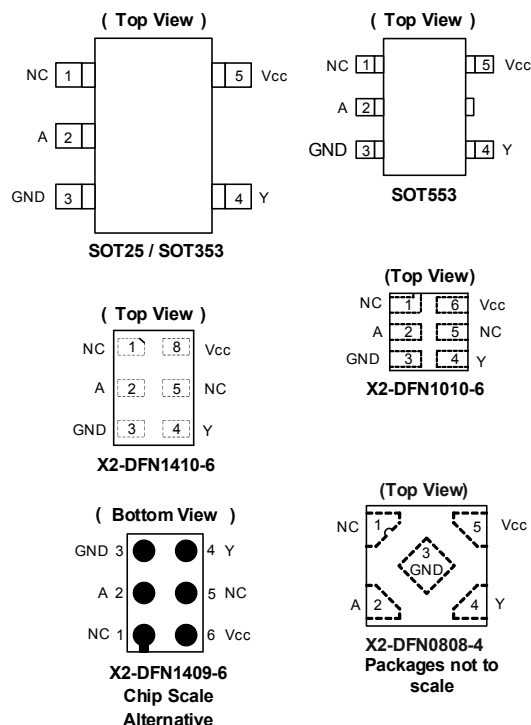


## Description

The 74LVC1G17 is a single 1-input Schmitt-trigger buffer 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  $I_{OFF}$ . The  $I_{OFF}$  circuitry disables the output preventing damaging current backflow when the device is powered down. The gate performs the positive Boolean function:

$$Y = A$$

## Pin Assignments



## Features

- Wide Supply Voltage Range from 1.65V to 5.5V
- $\pm 24\text{mA}$  Output Drive at 3.3V
- CMOS Low Power Consumption
- $I_{OFF}$  Supports Partial-Power-Down Mode Operation
- Inputs Accept up to 5.5V
- ESD Protection Tested per JESD 22
  - 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
- **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](#) or your local Diodes representative.**  
<https://www.diodes.com/quality/product-definitions/>
- **An Automotive-Compliant Part is Available Under Separate Datasheet (74LVC1G17Q)**

## Applications

- Voltage Level Shifting
- General Purpose Logic
- Power Down Signal Isolation
- Wide Array of Products such as:
  - PCs, Networking, Notebooks, Netbooks,
  - Computer Peripherals, Hard Drives, CD/DVD ROM
  - TV, DVD, DVR, Set Top Box
  - Cell Phones, Personal Navigation / GPS
  - MP3 Players, Cameras, Video Recorders

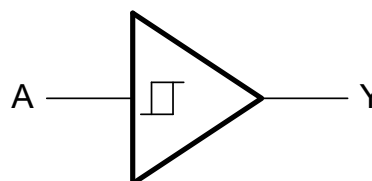
Notes:

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.

## Pin Descriptions

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

## Logic Diagram



## Function Table

| Input    | Output   |
|----------|----------|
| <b>A</b> | <b>Y</b> |
| H        | H        |
| L        | L        |

## Absolute Maximum Ratings (Notes 4 & 5)

| Symbol                             | Description                                                           | Rating                        | Unit |
|------------------------------------|-----------------------------------------------------------------------|-------------------------------|------|
| ESD HBM                            | Human Body Model ESD Protection                                       | 2                             | kV   |
| ESD CDM                            | Charged Device Model ESD Protection                                   | 1                             | kV   |
| 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>GND</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 can 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 6)

| Symbol   | Parameter                      |                     | Min  | Max      | Unit |
|----------|--------------------------------|---------------------|------|----------|------|
| $V_{CC}$ | Operating Voltage              | Operating           | 1.65 | 5.5      | V    |
|          |                                | Data retention only | 1.5  | —        | V    |
| $V_I$    | Input Voltage                  |                     | 0    | 5.5      | V    |
| $V_O$    | Output Voltage                 |                     | 0    | $V_{CC}$ | V    |
| $I_{OH}$ | High-Level Output current      | $V_{CC} = 1.65V$    | —    | -4       | mA   |
|          |                                | $V_{CC} = 2.3V$     | —    | -8       |      |
|          |                                | $V_{CC} = 2.7V$     | —    | -12      |      |
|          |                                | $V_{CC} = 3V$       | —    | -16      |      |
|          |                                |                     | —    | -24      |      |
|          |                                | $V_{CC} = 4.5V$     | —    | -32      |      |
| $I_{OL}$ | Low-Level Output current       | $V_{CC} = 1.65V$    | —    | 4        | mA   |
|          |                                | $V_{CC} = 2.3V$     | —    | 8        |      |
|          |                                | $V_{CC} = 2.7V$     | —    | 12       |      |
|          |                                | $V_{CC} = 3V$       | —    | 16       |      |
|          |                                |                     | —    | 24       |      |
|          |                                | $V_{CC} = 4.5V$     | —    | 32       |      |
| $T_A$    | Operating Free-Air Temperature | —                   | -40  | +125     | °C   |

Note: 6. 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  $V_{CC} = 3.3\text{V}$ ,  $T_A = +25^{\circ}\text{C}$ .)

| 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            | —   | —        |               |
|                 |                                        | $I_{OH} = -12\text{mA}$                 | 2.7V          | 2.2            | —   | —        |               |
|                 |                                        | $I_{OH} = -16\text{mA}$                 | 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      |               |
|                 |                                        | $I_{OL} = 12\text{mA}$                  | 2.7V          | —              | —   | 0.4      |               |
|                 |                                        | $I_{OL} = 16\text{mA}$                  | 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<br>$I_O = 0$ | 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** (continued) (@  $T_A = -40^{\circ}\text{C}$  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            | —   | —        |               |
|                 |                                        | $I_{OH} = -12\text{mA}$                 | 2.7V          | 1.9            | —   | —        |               |
|                 |                                        | $I_{OH} = -16\text{mA}$                 | 3V            | 2.2            | —   | —        |               |
|                 |                                        | $I_{OH} = -24\text{mA}$                 |               | 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         | —              | —   | 0.7      |               |
|                 |                                        | $I_{OL} = 8\text{mA}$                   | 2.3V          | —              | —   | 0.45     |               |
|                 |                                        | $I_{OL} = 12\text{mA}$                  | 2.7V          | —              | —   | 0.6      |               |
|                 |                                        | $I_{OL} = 16\text{mA}$                  | 3V            | —              | —   | 0.6      |               |
|                 |                                        | $I_{OL} = 24\text{mA}$                  |               | —              | —   | 0.8      |               |
|                 |                                        | $I_{OL} = 32\text{mA}$                  | 4.5V          | —              | —   | 0.8      |               |
| $I_I$           | 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              | Input at $V_{CC} - 0.6\text{V}$         | 3V to 5.5V    | —              | —   | 500      | $\mu\text{A}$ |

**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<br>Junction-to-Ambient | SOT25           | (Note 7) | —   | 204 | —   | $^{\circ}C/W$ |
|               |                                           | SOT353          |          | —   | 371 | —   |               |
|               |                                           | SOT553          |          | —   | 231 | —   |               |
|               |                                           | X2-DFN0808-4    |          | —   | 400 | —   |               |
|               |                                           | X2-DFN1010-6    |          | —   | 445 | —   |               |
|               |                                           | X2-DFN1409-6    |          | —   | 470 | —   |               |
|               |                                           | X2-DFN1410-6    |          | —   | 460 | —   |               |
| $\theta_{JC}$ | Thermal Resistance<br>Junction-to-Case    | SOT25           | (Note 7) | —   | 52  | —   | $^{\circ}C/W$ |
|               |                                           | SOT353          |          | —   | 143 | —   |               |
|               |                                           | SOT553          |          | —   | 105 | —   |               |
|               |                                           | X2-DFN0808-4    |          | —   | 225 | —   |               |
|               |                                           | X2-DFN1010-6    |          | —   | 250 | —   |               |
|               |                                           | X2-DFN1409-6    |          | —   | 275 | —   |               |
|               |                                           | X2-DFN1410-6    |          | —   | 265 | —   |               |

Note: 7. Test condition for each of the 7 package types: Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

**Switching Characteristics**

$T_A = -40^{\circ}C$  to  $+85^{\circ}C$ ,  $C_L = 15pF$  as noted (See Figure 1)

| Parameter | From<br>Input | To<br>Output | $V_{CC} = 1.8V$<br>$\pm 0.15V$ |     | $V_{CC} = 2.5V$<br>$\pm 0.2V$ |     | $V_{CC} = 3.3V$<br>$\pm 0.3V$ |     | $V_{CC} = 5V$<br>$\pm 0.5V$ |     | Unit |
|-----------|---------------|--------------|--------------------------------|-----|-------------------------------|-----|-------------------------------|-----|-----------------------------|-----|------|
|           |               |              | Min                            | Max | Min                           | Max | Min                           | Max | Min                         | Max |      |
| $t_{PD}$  | A             | Y            | 1.0                            | 9.9 | 0.7                           | 5.5 | 0.7                           | 4.6 | 0.7                         | 4.4 | ns   |

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

| Parameter | From<br>Input | To<br>Output | $V_{CC} = 1.8V$<br>$\pm 0.15V$ |     | $V_{CC} = 2.5V$<br>$\pm 0.2V$ |     | $V_{CC} = 3.3V$<br>$\pm 0.3V$ |     | $V_{CC} = 5V$<br>$\pm 0.5V$ |     | Unit |
|-----------|---------------|--------------|--------------------------------|-----|-------------------------------|-----|-------------------------------|-----|-----------------------------|-----|------|
|           |               |              | Min                            | Max | Min                           | Max | Min                           | Max | Min                         | Max |      |
| $t_{PD}$  | A             | Y            | 1.0                            | 11  | 0.7                           | 6.5 | 0.7                           | 5.5 | 0.7                         | 5   | ns   |

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

| Parameter | From<br>Input | To<br>Output | $V_{CC} = 1.8V$<br>$\pm 0.15V$ |      | $V_{CC} = 2.5V$<br>$\pm 0.2V$ |     | $V_{CC} = 3.3V$<br>$\pm 0.3V$ |     | $V_{CC} = 5V$<br>$\pm 0.5V$ |     | Unit |
|-----------|---------------|--------------|--------------------------------|------|-------------------------------|-----|-------------------------------|-----|-----------------------------|-----|------|
|           |               |              | Min                            | Max  | Min                           | Max | Min                           | Max | Min                         | Max |      |
| $t_{PD}$  | A             | Y            | 1.0                            | 12.5 | 0.7                           | 7.5 | 0.7                           | 6.5 | 0.7                         | 5.5 | ns   |

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

| Parameter | From<br>Input | To<br>Output | $V_{CC} = 1.8V$<br>$\pm 0.15V$ |      | $V_{CC} = 2.5V$<br>$\pm 0.2V$ |     | $V_{CC} = 3.3V$<br>$\pm 0.3V$ |     | $V_{CC} = 5V$<br>$\pm 0.5V$ |     | Unit |
|-----------|---------------|--------------|--------------------------------|------|-------------------------------|-----|-------------------------------|-----|-----------------------------|-----|------|
|           |               |              | Min                            | Max  | Min                           | Max | Min                           | Max | Min                         | Max |      |
| $t_{PD}$  | A             | Y            | 1.0                            | 14.0 | 0.7                           | 8.5 | 0.7                           | 7.0 | 0.7                         | 6.5 | ns   |

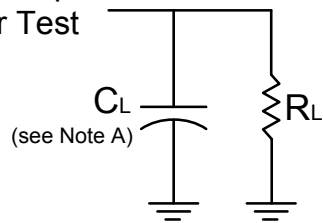
## Operating Characteristics

$T_A = +25^\circ\text{C}$

| 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 | $f = 10\text{MHz}$ | 20                     | 22                     | 23                     | 25                   | 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 $\Omega$ |

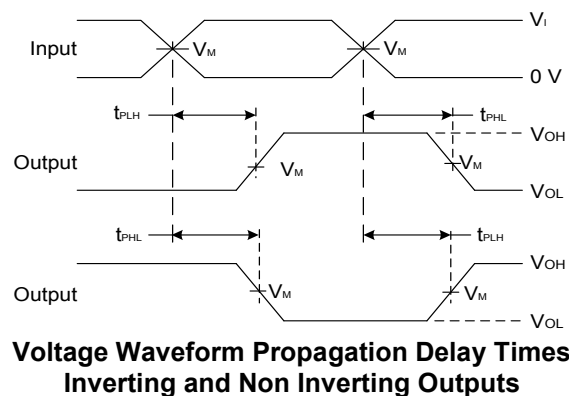
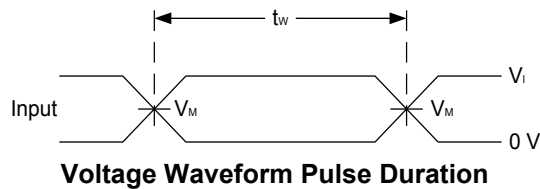
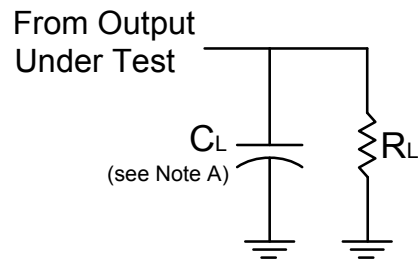


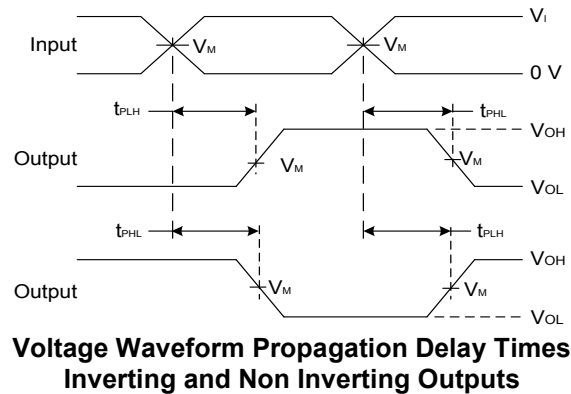
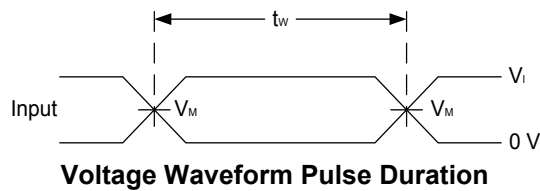
Figure 1. Load Circuit and Voltage Waveforms

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

**Parameter Measurement Information** (continued)

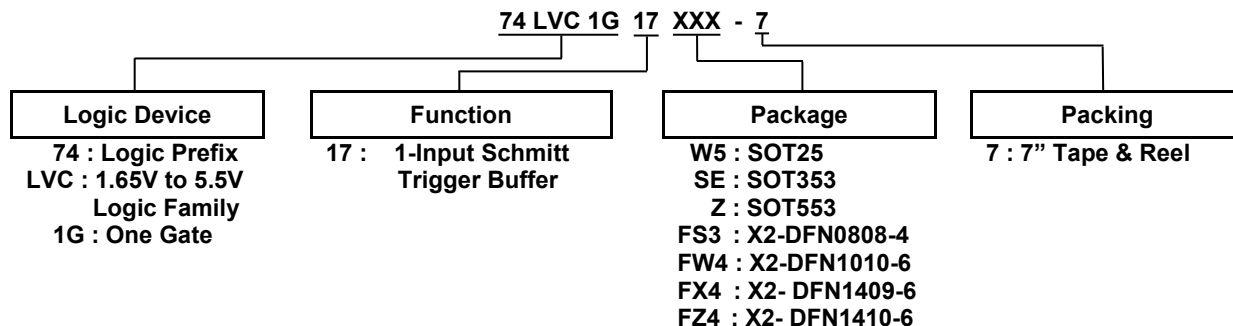


| $V_{CC}$         | Inputs   |              | $V_M$      | $C_L$ | $R_L$        |
|------------------|----------|--------------|------------|-------|--------------|
|                  | $V_I$    | $t_R/t_F$    |            |       |              |
| $1.8V \pm 0.15V$ | $V_{CC}$ | $\leq 2ns$   | $V_{CC}/2$ | 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 $\Omega$ |



**Figure 2. Load Circuit and Voltage Waveforms**

- 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  $t_{PD}$ .

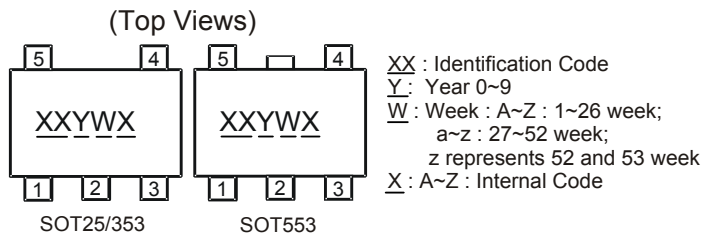
**Ordering Information** (Note 8)


| Device         | Package Code | Package<br>(Notes 9, 10)                 | 7" Tape and Reel  |                    |
|----------------|--------------|------------------------------------------|-------------------|--------------------|
|                |              |                                          | Quantity          | Part Number Suffix |
| 74LVC1G17W5-7  | W5           | SOT25                                    | 3,000/Tape & Reel | -7                 |
| 74LVC1G17SE-7  | SE           | SOT353                                   | 3,000/Tape & Reel | -7                 |
| 74LVC1G17Z-7   | Z            | SOT553                                   | 4,000/Tape & Reel | -7                 |
| 74LVC1G17FS3-7 | FS3          | X2-DFN0808-4                             | 5,000/Tape & Reel | -7                 |
| 74LVC1G17FW4-7 | FW4          | X2-DFN1010-6                             | 5,000/Tape & Reel | -7                 |
| 74LVC1G17FX4-7 | FX4          | X2-DFN1409-6<br>(Chip Scale Alternative) | 5,000/Tape & Reel | -7                 |
| 74LVC1G17FZ4-7 | FZ4          | X2-DFN1410-6                             | 5,000/Tape & Reel | -7                 |

Notes: 8. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.  
 9. Pad layout as shown in Diodes Incorporated's package outline PDFs, which can be found on our website at <http://www.diodes.com/package-outlines.html>.  
 10. The taping orientation is located on our website at <https://www.diodes.com/assets/Packaging-Support-Docs/ap02007.pdf>.

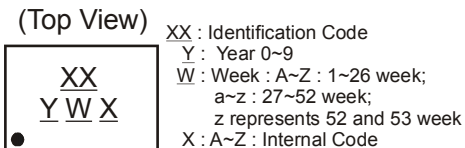
## Marking Information

### (1) SOT25, SOT353 and SOT553



| Part Number   | Package | Identification Code |
|---------------|---------|---------------------|
| 74LVC1G17W5-7 | SOT25   | UR                  |
| 74LVC1G17SE-7 | SOT353  | UR                  |
| 74LVC1G17Z-7  | SOT553  | UR                  |

### (2) DFN Packages

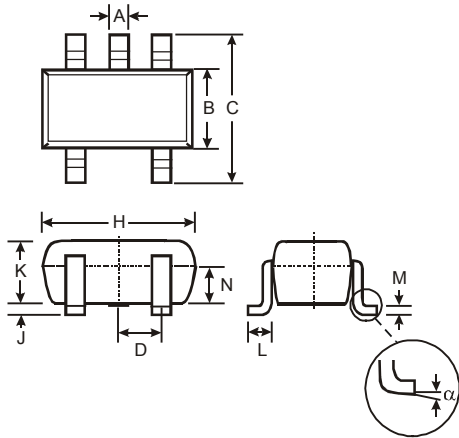


| Part Number    | Package      | Identification Code |
|----------------|--------------|---------------------|
| 74LVC1G17FS3-7 | X2-DFN0808-4 | WR                  |
| 74LVC1G17FW4-7 | X2-DFN1010-6 | UR                  |
| 74LVC1G17FX4-7 | X2-DFN1409-6 | MH                  |
| 74LVC1G17FZ4-7 | X2-DFN1410-6 | UR                  |

## Package Outline Dimensions

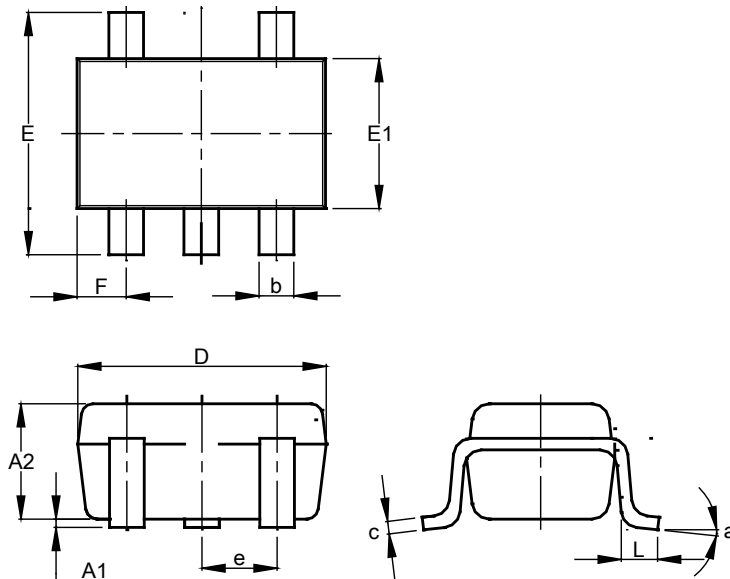
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (1) Package Type: 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 |
| α                    | 0°    | 8°   | -    |
| All Dimensions in mm |       |      |      |

### (2) Package Type: SOT353



| SOT353               |           |      |       |
|----------------------|-----------|------|-------|
| Dim                  | Min       | Max  | Typ   |
| A1                   | 0.00      | 0.10 | 0.05  |
| A2                   | 0.90      | 1.00 | 0.95  |
| 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 |           |      |       |

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

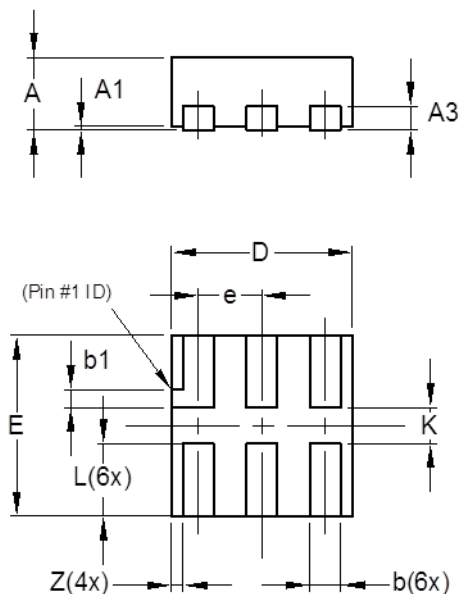
| SOT553               |          |      |      |
|----------------------|----------|------|------|
| Dim                  | Min      | Max  | Typ  |
| A                    | 0.55     | 0.62 | 0.60 |
| b                    | 0.15     | 0.30 | 0.20 |
| c                    | 0.10     | 0.18 | 0.15 |
| 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 |          |      |      |

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

## Package Outline Dimensions (continued)

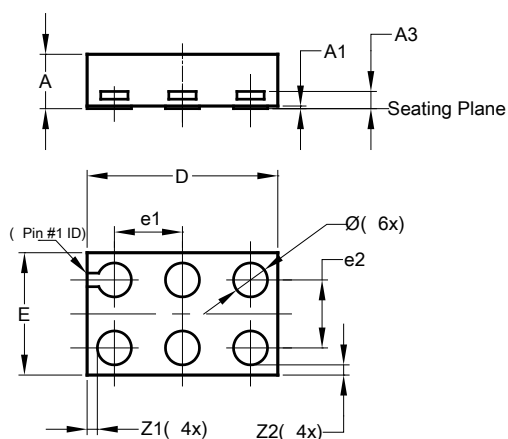
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (5) Package Type: 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 |      |      |       |

### (6) Package Type: X2-DFN1409-6

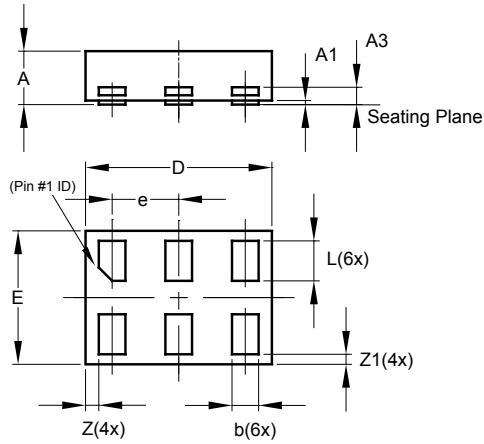


| X2-DFN1409-6         |      |      |       |
|----------------------|------|------|-------|
| Dim                  | Min  | Max  | Typ   |
| A                    | -    | 0.40 | 0.39  |
| A1                   | 0    | 0.05 | 0.02  |
| A3                   | -    | -    | 0.13  |
| Ø                    | 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 |
| All Dimensions in mm |      |      |       |

## Package Outline Dimensions (continued)

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

### (7) Package Type: X2-DFN1410-6

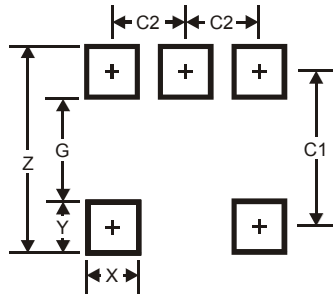


| X2-DFN1410-6         |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Max   | Typ   |
| A                    | —     | 0.40  | 0.39  |
| A1                   | 0.00  | 0.05  | 0.02  |
| A3                   | —     | —     | 0.13  |
| b   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

## Suggested Pad Layout

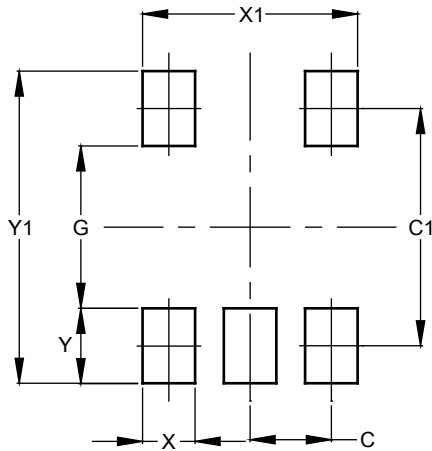
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (1) Package Type: SOT25



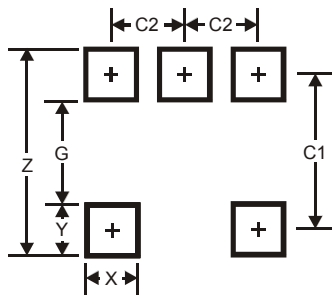
| Dimensions | Value |
|------------|-------|
| Z          | 3.20  |
| G          | 1.60  |
| X          | 0.55  |
| Y          | 0.80  |
| C1         | 2.40  |
| C2         | 0.95  |

### (2) Package Type: 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         |

### (3) Package Type: SOT553

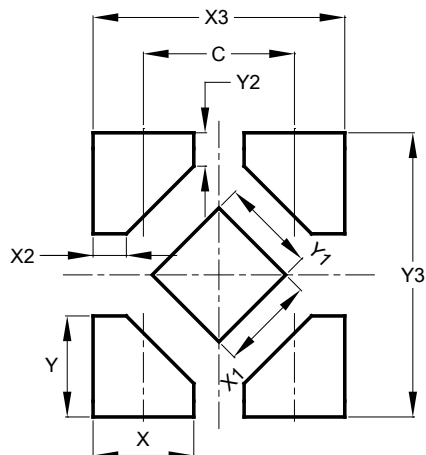


| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 2.2           |
| G          | 1.2           |
| X          | 0.375         |
| Y          | 0.5           |
| C1         | 1.7           |
| C2         | 0.5           |

## Suggested Pad Layout (continued)

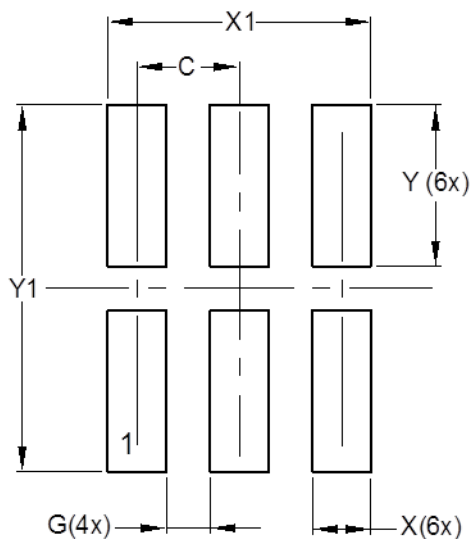
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (4) Package Type: X2-DFN0808-4



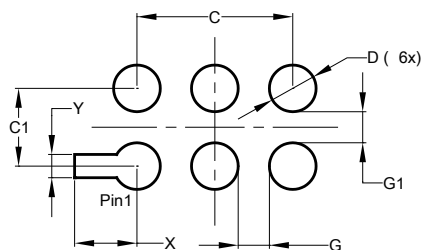
| Dimensions | Value |
|------------|-------|
| C          | 0.480 |
| X          | 0.320 |
| X1         | 0.300 |
| X2         | 0.106 |
| X3         | 0.800 |
| Y          | 0.320 |
| Y1         | 0.300 |
| Y2         | 0.106 |
| Y3         | 0.900 |

### (5) 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         |

### (6) Package Type: X2-DFN1409-6

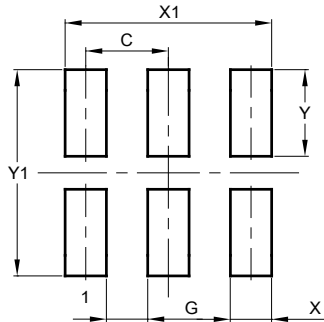


| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 1.000         |
| C1         | 0.500         |
| D          | 0.300         |
| G          | 0.200         |
| G1         | 0.200         |
| X          | 0.400         |
| Y          | 0.150         |

## Suggested Pad Layout (continued)

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

### (7) 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         |

## Mechanical Data

### SOT25

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.016 grams (Approximate)

### SOT353

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.006 grams (Approximate)

### SOT553

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.003 grams (Approximate)

### X2-DFN0808-4

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu Nickel Palladium Gold, Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.001 grams (Approximate)

### X2-DFN1010-6

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu Nickel Palladium Gold, Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.001 grams (Approximate)

### X2-DFN1409-6

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu Nickel Palladium Gold, Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.002 grams (Approximate)

### X2-DFN1410-6

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu Nickel Palladium Gold, Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.002 grams (Approximate)

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