# 74LVC2G14

## Dual inverting Schmitt trigger with 5 V tolerant input

Rev. 13 — 24 January 2022 Product data sheet

## 1. General description

The 74LVC2G14 is a dual inverter with Schmitt-trigger inputs. Inputs can be driven from either 3.3 V or 5 V devices. This feature allows the use of these devices as translators in mixed 3.3 V and 5 V environments.

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

## 2. Features and benefits

- Wide supply voltage range from 1.65 V to 5.5 V
- High noise immunity
- ±24 mA output drive ($V_{CC}$ = 3.0 V)
- CMOS low power dissipation
- Direct interface with TTL levels
- Unlimited rise and fall times
- Overvoltage tolerant inputs to 5.5 V
- $I_{OFF}$ circuitry provides partial Power-down mode operation
- Latch-up performance exceeds 250 mA
- Complies with JEDEC standard:
  - JESD8-7 (1.65 V to 1.95 V)
  - JESD8-5 (2.3 V to 2.7 V)
  - JESD8C (2.7 V to 3.6 V)
  - JESD36 (4.5 V to 5.5 V)
- ESD protection:
  - HBM JESD22-A114F exceeds 2000 V
  - MM JESD22-A115-A exceeds 200 V
- Multiple package options
- Specified from -40 °C to +85 °C and -40 °C to +125 °C.

## 3. Applications

- Wave and pulse shaper
- Astable multivibrator
- Monostable multivibrator

nexperia

## 4. Ordering information

**Table 1. Ordering information**

| Type number | Package | | | |
|---|---|---|---|---|
| | **Temperature range** | **Name** | **Description** | **Version** |
| 74LVC2G14GW | -40 °C to +125 °C | TSSOP6 | plastic thin shrink small outline package; 6 leads; body width 1.25 mm | SOT363-2 |
| 74LVC2G14GV | -40 °C to +125 °C | SC-74; TSOP6 | plastic surface-mounted package; 6 leads | SOT457 |
| 74LVC2G14GM | -40 °C to +125 °C | XSON6 | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm | SOT886 |
| 74LVC2G14GN | -40 °C to +125 °C | XSON6 | extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm | SOT1115 |
| 74LVC2G14GS | -40 °C to +125 °C | XSON6 | extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm | SOT1202 |

## 5. Marking

**Table 2. Marking codes**

| Type number | Marking code [1] |
|---|---|
| 74LVC2G14GW | VK |
| 74LVC2G14GV | V14 |
| 74LVC2G14GM | VK |
| 74LVC2G14GN | VK |
| 74LVC2G14GS | VK |

[1] The pin 1 indicator is located on the lower left corner of the device, below the marking code.

## 6. Functional diagram

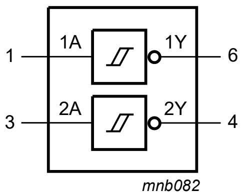


**Fig. 1. Logic symbol**

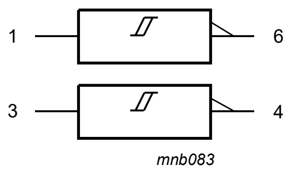


**Fig. 2. IEC logic symbol**

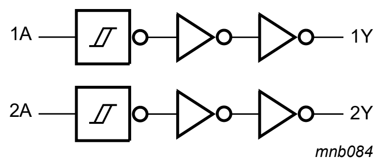


**Fig. 3. Logic diagram**

# 7. Pinning information

## 7.1. Pinning

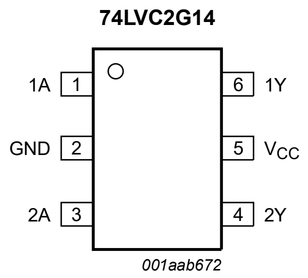



Fig. 4. Pin configuration SOT363-2 (TSSOP6) and SOT457 (SC-74; TSOP6)

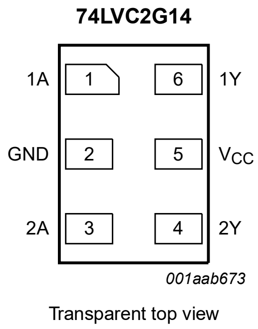



Fig. 5. Pin configuration SOT886 (XSON6)

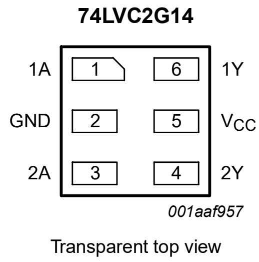



Fig. 6. Pin configuration SOT1115 and SOT1202 (XSON6)

## 7.2. Pin description

**Table 3. Pin description**

| Symbol | Pin | Description |
|---|---|---|
| 1A | 1 | data input |
| GND | 2 | ground (0 V) |
| 2A | 3 | data input |
| 2Y | 4 | data output |
| $V_{CC}$ | 5 | supply voltage |
| 1Y | 6 | data output |

# 8. Functional description

**Table 4. Function table**

*H = HIGH voltage level; L = LOW voltage level.*

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

# 9. Limiting values

**Table 5. Limiting values**

*In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).*

| Symbol | Parameter | Conditions | Min | Max | Unit |
|---|---|---|---|---|---|
| $V_{CC}$ | supply voltage | | -0.5 | +6.5 | V |
| $I_{IK}$ | input clamping current | $V_I$ < 0 V | -50 | - | mA |
| $V_I$ | input voltage | [1] | -0.5 | +6.5 | V |
| $I_{OK}$ | output clamping current | $V_O$ > $V_{CC}$ or $V_O$ < 0 V | - | ±50 | mA |
| $V_O$ | output voltage | Active mode [1] | -0.5 | $V_{CC}$ + 0.5 | V |
| | | Power-down mode; $V_{CC}$ = 0 V [1] | -0.5 | +6.5 | V |
| $I_O$ | output current | $V_O$ = 0 V to $V_{CC}$ | - | ±50 | mA |
| $I_{CC}$ | supply current | | - | 100 | mA |
| $I_{GND}$ | ground current | | -100 | - | mA |
| $P_{tot}$ | total power dissipation | $T_{amb}$ = -40 °C to +125 °C [2] | - | 250 | mW |
| $T_{stg}$ | storage temperature | | -65 | +150 | °C |

[1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

[2] For SOT363-2 (TSSOP6) package: $P_{tot}$ derates linearly with 3.7 mW/K above 83 °C.
For SOT457 (SC-74; TSOP6) package: $P_{tot}$ derates linearly with 4.1 mW/K above 89 °C.
For SOT886 (XSON6) package: $P_{tot}$ derates linearly with 3.3 mW/K above 74 °C.
For SOT1115 (XSON6) package: $P_{tot}$ derates linearly with 3.2 mW/K above 71 °C.
For SOT1202 (XSON6) package: $P_{tot}$ derates linearly with 3.3 mW/K above 74 °C.

# 10. Recommended operating conditions

**Table 6. Recommended operating conditions**

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{CC}$ | supply voltage | | 1.65 | - | 5.5 | V |
| $V_I$ | input voltage | | 0 | - | 5.5 | V |
| $V_O$ | output voltage | Active mode | 0 | - | $V_{CC}$ | V |
| | | Power-down mode; $V_{CC}$ = 0 V | 0 | - | 5.5 | V |
| $T_{amb}$ | ambient temperature | | -40 | - | +125 | °C |

# 11. Static characteristics

**Table 7. Static characteristics**

*At recommended operating conditions; voltages are referenced to GND (ground = 0 V).*

| Symbol | Parameter | Conditions | Min | Typ[1] | Max | Unit |
|---|---|---|---|---|---|---|
| **$T_{amb}$ = -40 °C to +85 °C** | | | | | | |
| $V_{OH}$ | HIGH-level output voltage | $V_I$ = $V_{T+}$ or $V_{T-}$ | | | | |
| | | $I_O$ = -100 µA; $V_{CC}$ = 1.65 V to 5.5 V | $V_{CC}$ - 0.1 | - | - | V |
| | | $I_O$ = -4 mA; $V_{CC}$ = 1.65 V | 1.2 | - | - | V |
| | | $I_O$ = -8 mA; $V_{CC}$ = 2.3 V | 1.9 | - | - | V |
| | | $I_O$ = -12 mA; $V_{CC}$ = 2.7 V | 2.2 | - | - | V |
| | | $I_O$ = -24 mA; $V_{CC}$ = 3.0 V | 2.3 | - | - | V |
| | | $I_O$ = -32 mA; $V_{CC}$ = 4.5 V | 3.8 | - | - | V |

| Symbol | Parameter | Conditions | Min | Typ[1] | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{OL}$ | LOW-level output voltage | $V_I = V_{T+}$ or $V_{T-}$ | | | | |
| | | $I_O$ = 100 μA; $V_{CC}$ = 1.65 V to 5.5 V | - | - | 0.1 | V |
| | | $I_O$ = 4 mA; $V_{CC}$ = 1.65 V | - | - | 0.45 | V |
| | | $I_O$ = 8 mA; $V_{CC}$ = 2.3 V | - | - | 0.3 | V |
| | | $I_O$ = 12 mA; $V_{CC}$ = 2.7 V | - | - | 0.4 | V |
| | | $I_O$ = 24 mA; $V_{CC}$ = 3.0 V | - | - | 0.55 | V |
| | | $I_O$ = 32 mA; $V_{CC}$ = 4.5 V | - | - | 0.55 | V |
| $I_I$ | input leakage current | $V_I$ = 5.5 V or GND; $V_{CC}$ = 0 V to 5.5 V | - | ±0.1 | ±1 | μA |
| $I_{OFF}$ | power-off leakage current | $V_I$ or $V_O$ = 5.5 V; $V_{CC}$ = 0 V | - | ±0.1 | ±2 | μA |
| $I_{CC}$ | supply current | $V_I$ = 5.5 V or GND; $V_{CC}$ = 1.65 V to 5.5 V; $I_O$ = 0 A | - | 0.1 | 4 | μA |
| $\Delta I_{CC}$ | additional supply current | $V_I = V_{CC}$ - 0.6 V; $I_O$ = 0 A; $V_{CC}$ = 2.3 V to 5.5 V | - | 5 | 500 | μA |
| $C_I$ | input capacitance | $V_{CC}$ = 3.3 V; $V_I$ = GND to $V_{CC}$ | - | 3.5 | - | pF |
| **$T_{amb}$ = -40 °C to +125 °C** | | | | | | |
| $V_{OH}$ | HIGH-level output voltage | $V_I = V_{T+}$ or $V_{T-}$ | | | | |
| | | $I_O$ = -100 μA; $V_{CC}$ = 1.65 V to 5.5 V | $V_{CC}$ - 0.1 | - | - | V |
| | | $I_O$ = -4 mA; $V_{CC}$ = 1.65 V | 0.95 | - | - | V |
| | | $I_O$ = -8 mA; $V_{CC}$ = 2.3 V | 1.7 | - | - | V |
| | | $I_O$ = -12 mA; $V_{CC}$ = 2.7 V | 1.9 | - | - | V |
| | | $I_O$ = -24 mA; $V_{CC}$ = 3.0 V | 2.0 | - | - | V |
| | | $I_O$ = -32 mA; $V_{CC}$ = 4.5 V | 3.4 | - | - | V |
| $V_{OL}$ | LOW-level output voltage | $V_I = V_{T+}$ or $V_{T-}$ | | | | |
| | | $I_O$ = 100 μA; $V_{CC}$ = 1.65 V to 5.5 V | - | - | 0.1 | V |
| | | $I_O$ = 4 mA; $V_{CC}$ = 1.65 V | - | - | 0.7 | V |
| | | $I_O$ = 8 mA; $V_{CC}$ = 2.3 V | - | - | 0.45 | V |
| | | $I_O$ = 12 mA; $V_{CC}$ = 2.7 V | - | - | 0.6 | V |
| | | $I_O$ = 24 mA; $V_{CC}$ = 3.0 V | - | - | 0.8 | V |
| | | $I_O$ = 32 mA; $V_{CC}$ = 4.5 V | - | - | 0.8 | V |
| $I_I$ | input leakage current | $V_I$ = 5.5 V or GND; $V_{CC}$ = 0 V to 5.5 V | - | - | ±1 | μA |
| $I_{OFF}$ | power-off leakage current | $V_I$ or $V_O$ = 5.5 V; $V_{CC}$ = 0 V | - | - | ±2 | μA |
| $I_{CC}$ | supply current | $V_I$ = 5.5 V or GND; $V_{CC}$ = 1.65 V to 5.5 V; $I_O$ = 0 A | - | - | 4 | μA |
| $\Delta I_{CC}$ | additional supply current | $V_I = V_{CC}$ - 0.6 V; $I_O$ = 0 A; $V_{CC}$ = 2.3 V to 5.5 V | - | - | 500 | μA |

[1] All typical values are measured at maximum $V_{CC}$ and $T_{amb}$ = 25 °C.

# 12. Transfer characteristics

**Table 8. Transfer characteristics**

*Voltages are referenced to GND (ground = 0 V; for test circuit see Fig. 11*

| Symbol | Parameter | Conditions | -40 °C to +85 °C | | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ[1] | Max | Min | Max | |
| $V_{T+}$ | positive-going threshold voltage | see Fig. 7 and Fig. 8 | | | | | | |
| | | $V_{CC}$ = 1.8 V | 0.70 | 1.10 | 1.50 | 0.70 | 1.70 | V |
| | | $V_{CC}$ = 2.3 V | 1.00 | 1.40 | 1.80 | 1.00 | 2.00 | V |
| | | $V_{CC}$ = 3.0 V; see Fig. 9 | 1.30 | 1.76 | 2.20 | 1.30 | 2.40 | V |
| | | $V_{CC}$ = 4.5 V | 1.90 | 2.47 | 3.10 | 1.90 | 3.30 | V |
| | | $V_{CC}$ = 5.5 V | 2.20 | 2.91 | 3.60 | 2.20 | 3.80 | V |
| $V_{T-}$ | negative-going threshold voltage | see Fig. 7 and Fig. 8 | | | | | | |
| | | $V_{CC}$ = 1.8 V | 0.25 | 0.61 | 0.90 | 0.25 | 1.10 | V |
| | | $V_{CC}$ = 2.3 V | 0.40 | 0.80 | 1.15 | 0.40 | 1.35 | V |
| | | $V_{CC}$ = 3.0 V; see Fig. 9 | 0.60 | 1.04 | 1.50 | 0.60 | 1.70 | V |
| | | $V_{CC}$ = 4.5 V | 1.00 | 1.55 | 2.00 | 1.00 | 2.20 | V |
| | | $V_{CC}$ = 5.5 V | 1.20 | 1.86 | 2.30 | 1.20 | 2.50 | V |
| $V_H$ | hysteresis voltage | ($V_{T+}$ - $V_{T-}$); see Fig. 7 and Fig. 8 | | | | | | |
| | | $V_{CC}$ = 1.8 V | 0.15 | 0.49 | 1.00 | 0.15 | 1.20 | V |
| | | $V_{CC}$ = 2.3 V | 0.25 | 0.60 | 1.10 | 0.25 | 1.30 | V |
| | | $V_{CC}$ = 3.0 V; see Fig. 9 | 0.40 | 0.73 | 1.20 | 0.40 | 1.40 | V |
| | | $V_{CC}$ = 4.5 V | 0.60 | 0.92 | 1.50 | 0.60 | 1.70 | V |
| | | $V_{CC}$ = 5.5 V | 0.70 | 1.02 | 1.70 | 0.70 | 1.90 | V |

[1] All typical values are measured at $T_{amb}$ = 25 °C

## 12.1. Waveforms transfer characteristics

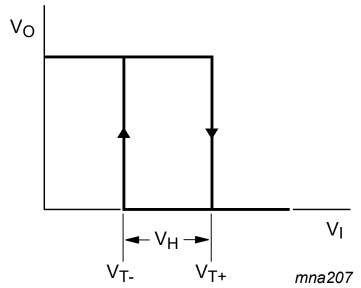
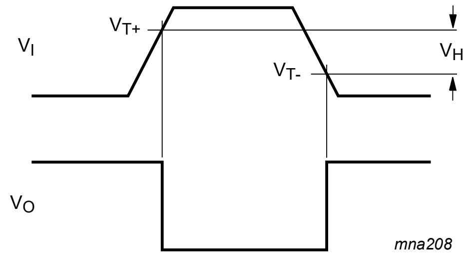
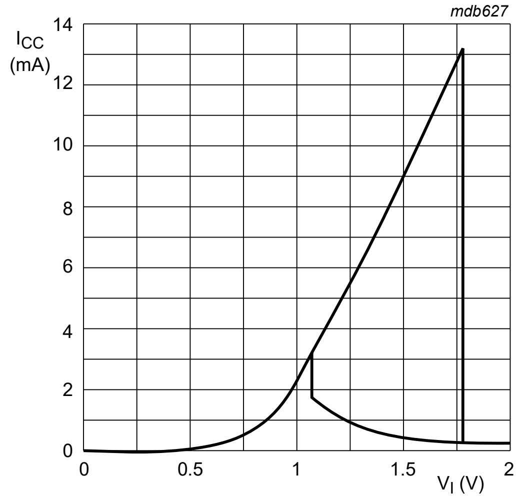



**Fig. 7. Transfer characteristic**




$V_{T+}$ and $V_{T-}$ limits at 70 % and 20 %.

**Fig. 8. Definition of $V_{T+}$, $V_{T-}$ and $V_H$**




$V_{CC}$ = 3.0 V

**Fig. 9. Typical transfer characteristics**

## 13. Dynamic characteristics

**Table 9. Dynamic characteristics**

*Voltages are referenced to GND (ground = 0 V). For test circuit see Fig. 11.*

| Symbol | Parameter | Conditions | -40 °C to +85 °C | | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ[1] | Max | Min | Max | |
| $t_{pd}$ | propagation delay | nA to nY; see Fig. 10 [2] | | | | | | |
| | | $V_{CC}$ = 1.65 V to 1.95 V | 1.0 | 5.6 | 11.0 | 1.0 | 12.0 | ns |
| | | $V_{CC}$ = 2.3 V to 2.7 V | 0.5 | 3.7 | 6.5 | 0.5 | 7.2 | ns |
| | | $V_{CC}$ = 2.7 V | 0.5 | 4.1 | 7.0 | 0.5 | 7.7 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | 0.5 | 3.9 | 6.0 | 0.5 | 6.7 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V | 0.5 | 2.7 | 4.3 | 0.5 | 4.7 | ns |
| $C_{PD}$ | power dissipation capacitance | $V_I$ = GND to $V_{CC}$; $V_{CC}$ = 3.3 V [3] | - | 18.1 | - | - | - | pF |

[1] Typical values are measured at $T_{amb}$ = 25 °C and $V_{CC}$ = 1.8 V, 2.5 V, 2.7 V, 3.3 V and 5.0 V respectively.

[2] $t_{pd}$ is the same as $t_{PLH}$ and $t_{PHL}$.

[3] $C_{PD}$ is used to determine the dynamic power dissipation ($P_D$ in μW).

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

$f_i$ = input frequency in MHz;

$f_o$ = output frequency in MHz;

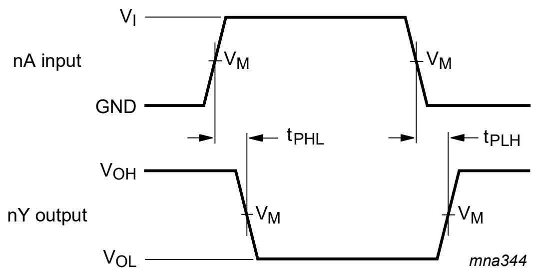
$C_L$ = output load capacitance in pF;

$V_{CC}$ = supply voltage in V;

N = number of inputs switching;

$\sum(C_L \times V_{CC}^2 \times f_o)$ = sum of outputs.

## 13.1. Waveforms and test circuit



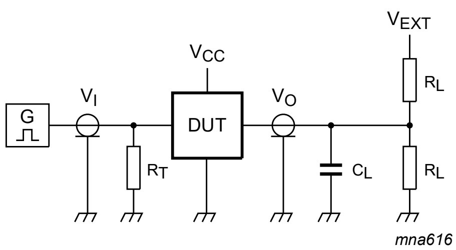

Measurement points are given in Table 10.

$V_{OL}$ and $V_{OH}$ are typical output voltage levels that occur with the output load.

**Fig. 10. The data input (nA) to output (nY) propagation delays**

**Table 10. Measurement points**

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




Test data is given in Table 11.

Definitions for test circuit:

$R_L$ = Load resistance.

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

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

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

**Fig. 11. Test circuit for measuring switching times**

**Table 11. Test data**

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

## 14. Application information

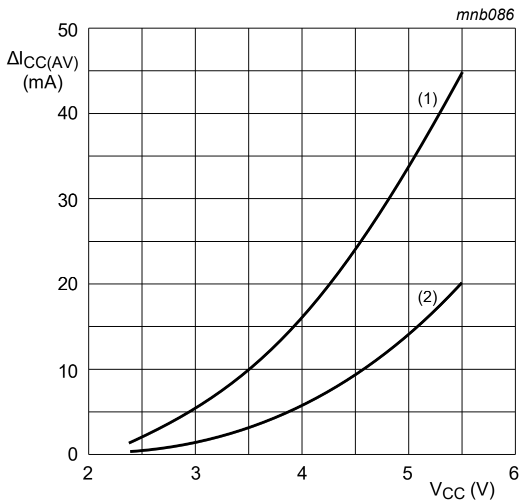
The slow input rise and fall times cause additional power dissipation, which can be calculated using the following formula:

$P_{add} = f_i \times (t_r \times \Delta I_{CC(AV)} + t_f \times \Delta I_{CC(AV)}) \times V_{CC}$ where:

$P_{add}$ = additional power dissipation (μW);
$f_i$ = input frequency (MHz);
$t_r$ = input rise time (ns); 10 % to 90 %;
$t_f$ = input fall time (ns); 90 % to 10 %;
$\Delta I_{CC(AV)}$ = average additional supply current (μA).

$\Delta I_{CC(AV)}$ differs with positive or negative input transitions, as shown in Fig. 12.

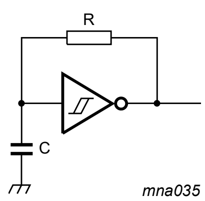
An example of a relaxation circuit using the 74LVC2G14 is shown in Fig. 13.




Linear change of $V_I$ between 0.8 V to 2.0 V. All values given are typical unless otherwise specified.

(1) Positive-going edge.
(2) Negative-going edge.

**Fig. 12. Average $I_{CC}$ as a function of $V_{CC}$**




$$f = \frac{1}{T} \approx \frac{1}{K \times RC}$$

For K-factor, see Fig. 14

**Fig. 13. Relaxation oscillator**

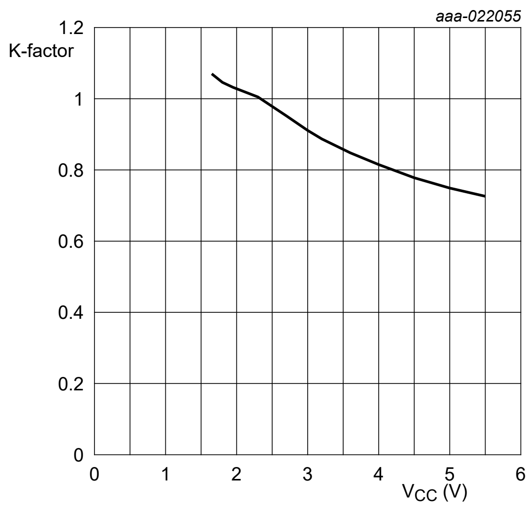
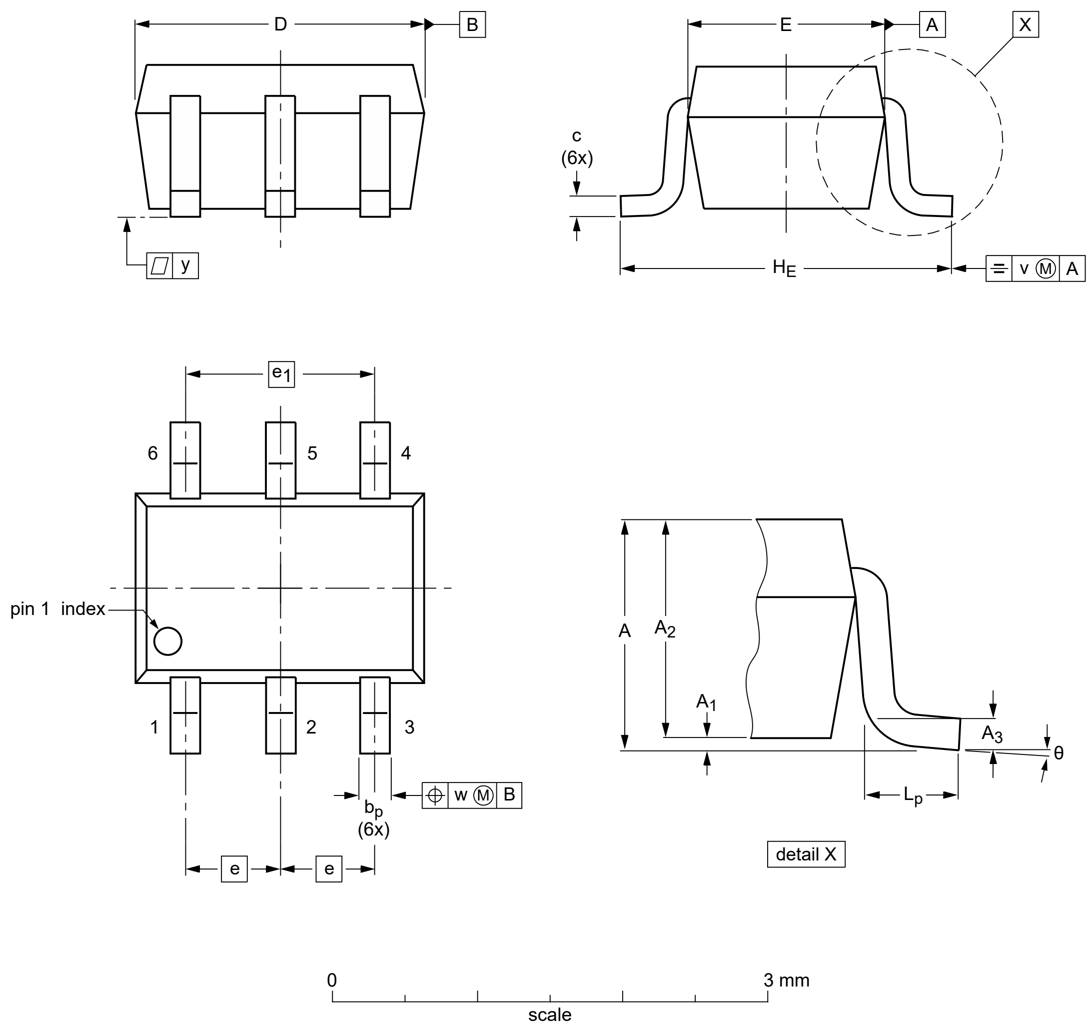



**Fig. 14. Typical K-factor for relaxation oscillator**

## 15. Package outline

**TSSOP6: plastic thin shrink small outline package; 6 leads; body width 1.25 mm** **SOT363-2**




Dimensions (mm are the original dimensions)

| Unit | | A | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | D[1] | E[1] | e | $e_1$ | $H_E$ | $L_p$ | v | w | y | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.1 | 0.1 | 1.0 | 0.15 | 0.30 | 0.25 | 2.2 | 1.35 | 0.65 | 1.3 | 2.4 | 0.46 | 0.3 | 0.1 | 0.1 | 8° |
| | min | 0.8 | 0 | 0.8 | | 0.15 | 0.08 | 1.8 | 1.15 | | | 1.8 | 0.26 | | | | 0° |

Note

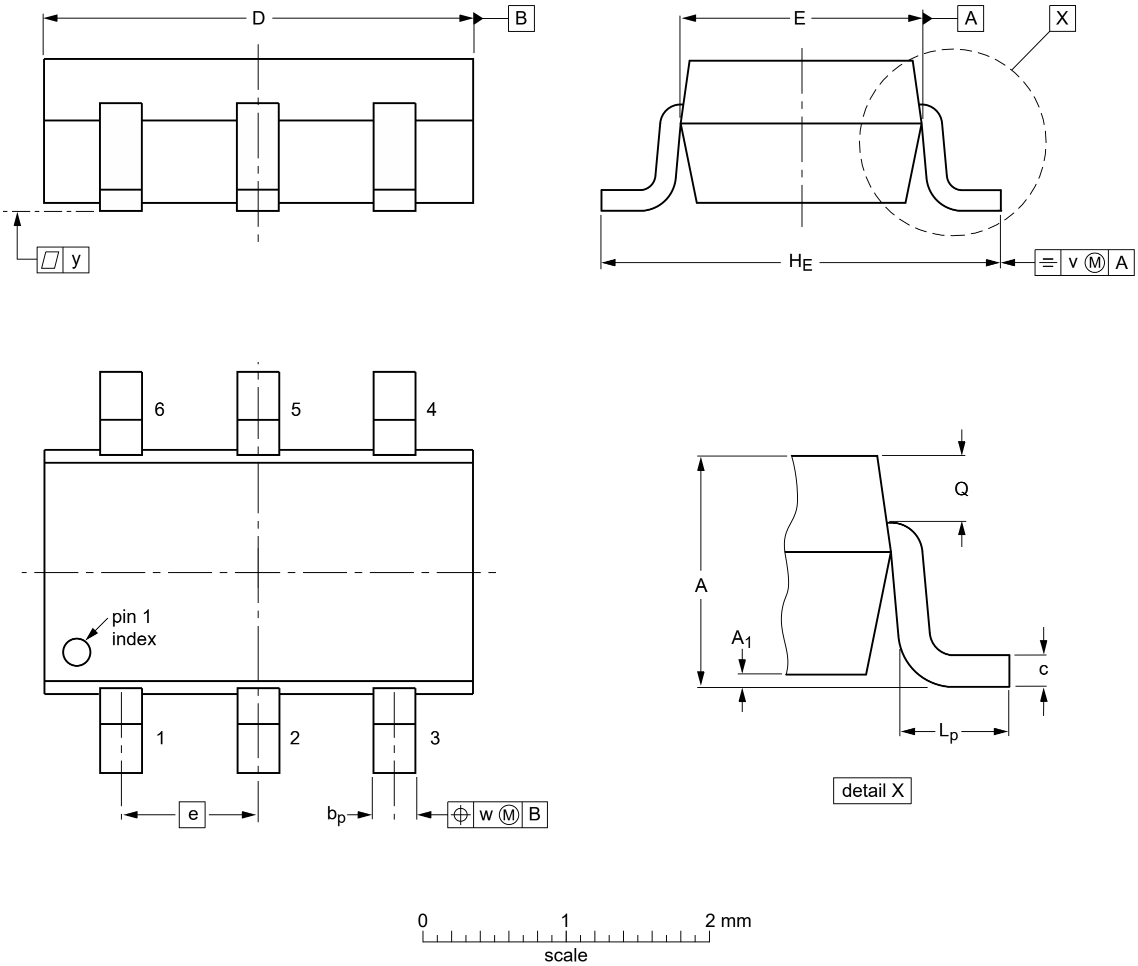
1. Plastic or metal protrusions of 0.2 mm maximum per side are not included.

*sot363-2_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT363-2 | | MO-203 | SC-88A | | | ~~21-12-15~~<br>21-12-16 |

**Fig. 15. Package outline SOT363-2 (TSSOP6)**

**Plastic, surface-mounted package (SC-74; TSOP6); 6 leads** **SOT457**




Dimensions (mm are the original dimensions)

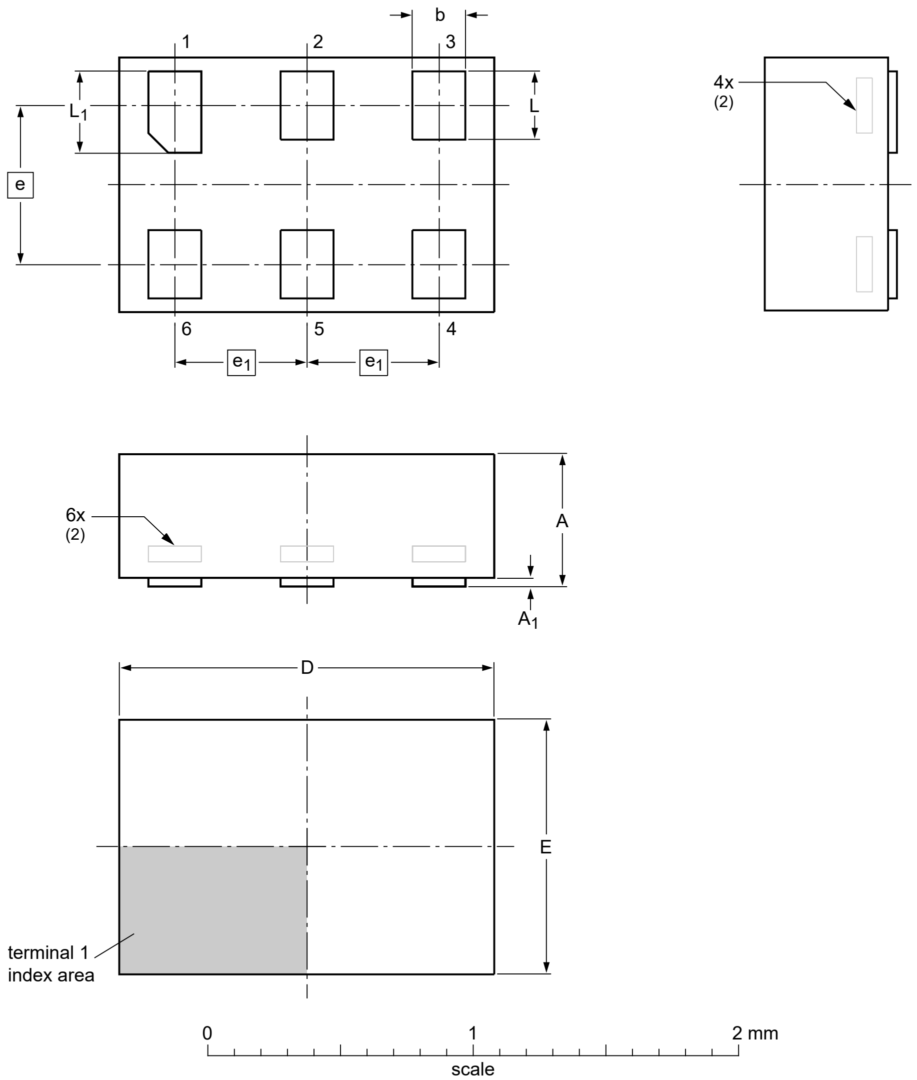
| Unit | | A | $A_1$ | $b_p$ | c | D | E | e | $H_E$ | $L_p$ | Q | v | w | y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.1 | 0.1 | 0.40 | 0.26 | 3.1 | 1.7 | | 3.0 | 0.6 | 0.33 | | | |
| | nom | | | | | | | 0.95 | | | | 0.2 | 0.2 | 0.1 |
| | min | 0.9 | 0.013 | 0.25 | 0.10 | 2.7 | 1.3 | | 2.5 | 0.2 | 0.23 | | | |

*sot457_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT457 | | | SC-74 | | | ~~06-03-16~~ 18-11-27 |

**Fig. 16. Package outline SOT457 (SC-74; TSOP6)**

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm — SOT886




Dimensions (mm are the original dimensions)

| Unit | | $A^{(1)}$ | $A_1$ | b | D | E | e | $e_1$ | L | $L_1$ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 0.5 | 0.04 | 0.25 | 1.50 | 1.05 | | | 0.35 | 0.40 |
| | nom | | | 0.20 | 1.45 | 1.00 | 0.6 | 0.5 | 0.30 | 0.35 |
| | min | | | 0.17 | 1.40 | 0.95 | | | 0.27 | 0.32 |

Notes
1. Including plating thickness.
2. Can be visible in some manufacturing processes.

*sot886_po*

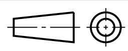
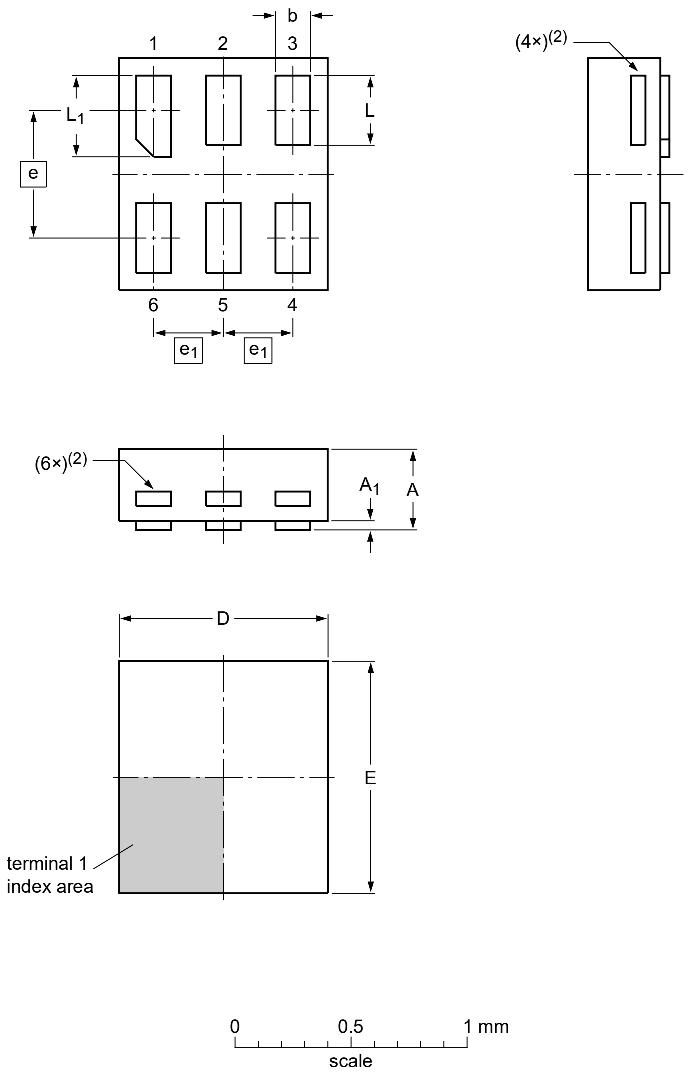
| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT886 | | MO-252 | | |  | ~~04-07-22~~ 12-01-05 |

**Fig. 17. Package outline SOT886 (XSON6)**

**XSON6: extremely thin small outline package; no leads;
6 terminals; body 0.9 x 1.0 x 0.35 mm** **SOT1115**




Dimensions

| Unit | | $A^{(1)}$ | $A_1$ | b | D | E | e | $e_1$ | L | $L_1$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | max | 0.35 | 0.04 | 0.20 | 0.95 | 1.05 | | | 0.35 | 0.40 |
| mm | nom | | | 0.15 | 0.90 | 1.00 | 0.55 | 0.3 | 0.30 | 0.35 |
| | min | | | 0.12 | 0.85 | 0.95 | | | 0.27 | 0.32 |

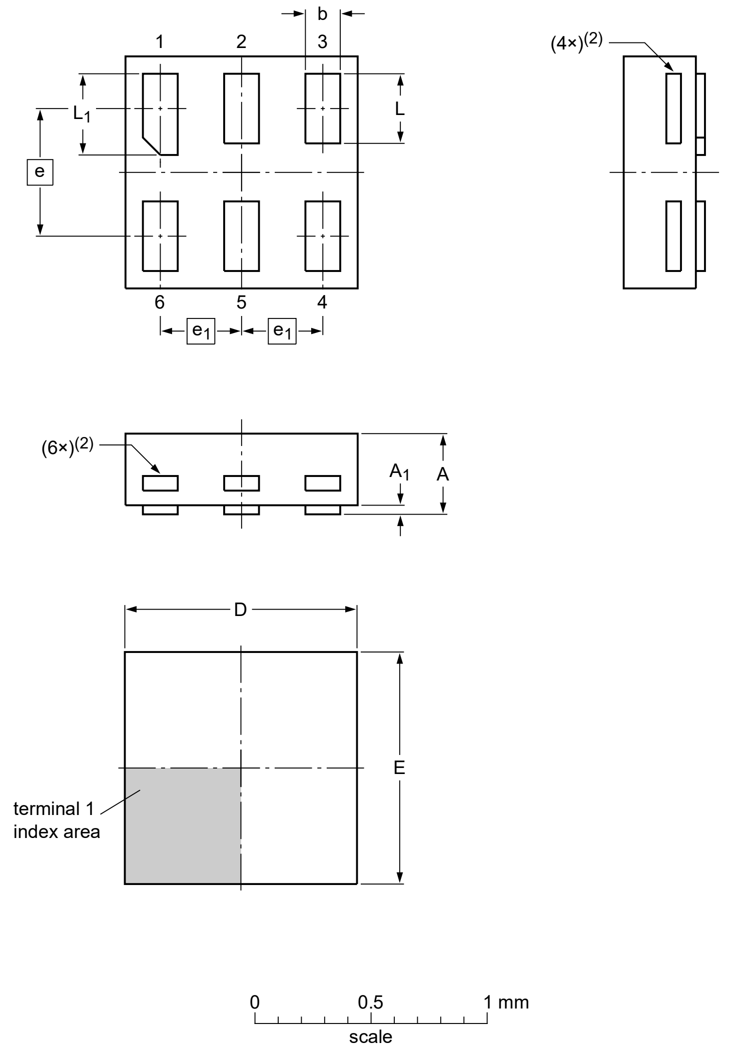
Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

*sot1115_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT1115 | | | | | | ~~10-04-02~~<br>10-04-07 |

**Fig. 18. Package outline SOT1115 (XSON6)**

**XSON6: extremely thin small outline package; no leads;
6 terminals; body 1.0 x 1.0 x 0.35 mm** **SOT1202**




Dimensions

| Unit | | A(1) | A1 | b | D | E | e | e1 | L | L1 |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 0.35 | 0.04 | 0.20 | 1.05 | 1.05 | | | 0.35 | 0.40 |
| | nom | | | 0.15 | 1.00 | 1.00 | 0.55 | 0.35 | 0.30 | 0.35 |
| | min | | | 0.12 | 0.95 | 0.95 | | | 0.27 | 0.32 |

Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

*sot1202_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT1202 | | | | | | ~~10-04-02~~ 10-04-06 |

**Fig. 19. Package outline SOT1202 (XSON6)**

## 16. Abbreviations

**Table 12. Abbreviations**

| Acronym | Description |
|---|---|
| CMOS | Complementary Metal-Oxide Semiconductor |
| DUT | Device Under Test |
| ESD | ElectroStatic Discharge |
| HBM | Human Body Model |
| MM | Machine Model |
| TTL | Transistor-Transistor Logic |

## 17. Revision history

**Table 13. Revision history**

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| 74LVC2G14 v.13 | 20220124 | Product data sheet | - | 74LVC2G14 v.12 |
| Modifications: | • Package SOT363 (SC-88) changed to SOT363-2 (TSSOP6). | | | |
| 74LVC2G14 v.12 | 20210611 | Product data sheet | - | 74LVC2G14 v.11 |
| Modifications: | • Type number 74LVC2G14GF (SOT891 / XSON6) removed.<br>• Section 1 updated.<br>• Section 7.2: pin 6 description corrected (Errata).<br>• Section 9: Derating values for $P_{tot}$ total power dissipation updated.<br>• Fig. 16: Package outline drawing SOT457 (SC-74) updated. | | | |
| 74LVC2G14 v.11 | 20180810 | Product data sheet | - | 74LVC2G14 v.10 |
| Modifications: | • The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.<br>• Legal texts have been adapted to the new company name where appropriate. | | | |
| 74LVC2G14 v.10 | 20161215 | Product data sheet | - | 74LVC2G14 v.9 |
| Modifications: | • Table 7: The maximum limits for leakage current and supply current have changed. | | | |
| 74LVC2G14 v.9 | 20160315 | Product data sheet | - | 74LVC2G14 v.8 |
| Modifications: | • Fig. 14 added (typical K-factor for relaxation oscillator). | | | |
| 74LVC2G14 v.8 | 20140910 | Product data sheet | - | 74LVC2G14 v.7 |
| Modifications: | • Package outline drawing of SOT886 (Fig. 17) modified. | | | |
| 74LVC2G14 v.7 | 20111130 | Product data sheet | - | 74LVC2G14 v.6 |
| 74LVC2G14 v.6 | 20110923 | Product data sheet | - | 74LVC2G14 v.5 |
| 74LVC2G14 v.5 | 20101029 | Product data sheet | - | 74LVC2G14 v.4 |
| 74LVC2G14 v.4 | 20070904 | Product data sheet | - | 74LVC2G14 v.3 |
| 74LVC2G14 v.3 | 20070220 | Product data sheet | - | 74LVC2G14 v.2 |
| 74LVC2G14 v.2 | 20040908 | Product specification | - | 74LVC2G14 v.1 |
| 74LVC2G14 v.1 | 20030731 | Product specification | - | - |

# 18. Legal information

### Data sheet status

| Document status [1][2] | Product status [3] | Definition |
|---|---|---|
| Objective [short] data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet | Qualification | This document contains data from the preliminary specification. |
| Product [short] data sheet | Production | This document contains the product specification. |

[1] Please consult the most recently issued document before initiating or completing a design.
[2] The term 'short data sheet' is explained in section "Definitions".
[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at https://www.nexperia.com.

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