

# 74LVC132A-Q100

## Quad 2-input NAND Schmitt trigger

Rev. 2 — 6 July 2020

Product data sheet

## 1. General description

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The 74LVC132A-Q100 provides four 2-input NAND gates with Schmitt trigger inputs. It can transform slowly changing input signals into sharply defined, jitter-free output signals.

The inputs switch at different points for positive and negative-going signals. The difference between the positive voltage  $V_{T+}$  and the negative voltage  $V_{T-}$  is defined as the input hysteresis voltage  $V_H$ .

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 environment.

This product has been qualified to the Automotive Electronics Council (AEC) standard Q100 (Grade 1) and is suitable for use in automotive applications.

## 2. Features and benefits

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- Automotive product qualification in accordance with AEC-Q100 (Grade 1)
  - Specified from -40 °C to +85 °C and from -40 °C to +125 °C
- Wide supply voltage range from 1.2 V to 3.6 V
- 5 V tolerant inputs for interfacing with 5 V logic
- CMOS low-power consumption
- Direct interface with TTL levels
- Unlimited input rise and fall times
- Inputs accept voltages up to 5.5 V
- Complies with JEDEC standard JESD8-C/JESD36 (2.7 V to 3.6 V)
- ESD protection:
  - MIL-STD-883, method 3015 exceeds 2000 V
  - HBM JESD22-A114F exceeds 2000 V
  - MM JESD22-A115-A exceeds 200 V (C = 200 pF, R = 0 Ω)
- Multiple package options
- DHVQFN package with Side-Wettable Flanks enabling Automatic Optical Inspection (AOI) of solder joints

## 3. Applications

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- Wave and pulse shapers for highly noisy environments
- Astable multivibrator
- Monostable multivibrator.

4. Ordering information

Table 1. Ordering information

| Type number      | Package           |          |                                                                                                                              |          |
|------------------|-------------------|----------|------------------------------------------------------------------------------------------------------------------------------|----------|
|                  | Temperature range | Name     | Description                                                                                                                  | Version  |
| 74LVC132AD-Q100  | -40 °C to +125 °C | SO14     | plastic small outline package; 14 leads; body width 3.9 mm                                                                   | SOT108-1 |
| 74LVC132APW-Q100 | -40 °C to +125 °C | TSSOP14  | plastic thin shrink small outline package; 14 leads; body width 4.4 mm                                                       | SOT402-1 |
| 74LVC132ABQ-Q100 | -40 °C to +125 °C | DHVQFN14 | plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads; 14 terminals; body 2.5 × 3 × 0.85 mm | SOT762-1 |

5. Functional diagram

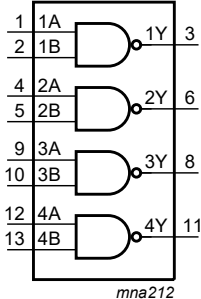


Fig. 1. Logic symbol

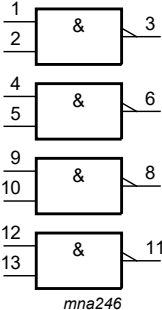


Fig. 2. IEC logic symbol

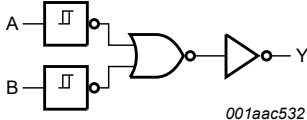


Fig. 3. Logic diagram (one gate)

6. Pinning information

6.1. Pinning

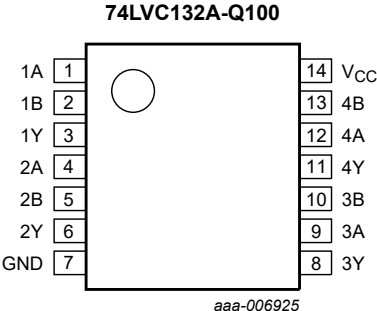


Fig. 4. Pin configuration SOT108-1 (SO14) and SOT402-1 (TSSOP14)

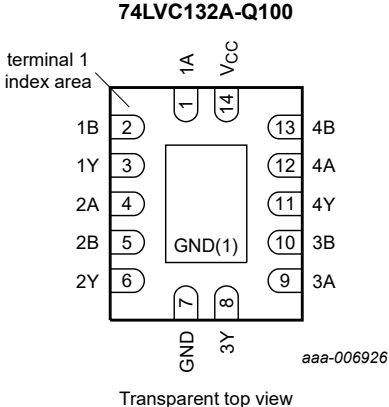


Fig. 5. Pin configuration SOT762-1 (DHVQFN14)

## 6.2. Pin description

Table 2. Pin description

| Symbol          | Pin          | Description    |
|-----------------|--------------|----------------|
| 1A, 2A, 3A, 4A  | 1, 4, 9, 12  | data input     |
| 1B, 2B, 3B, 4B  | 2, 5, 10, 13 | data input     |
| 1Y, 2Y, 3Y, 4Y  | 3, 6, 8, 11  | data output    |
| GND             | 7            | ground (0 V)   |
| V <sub>CC</sub> | 14           | supply voltage |

## 7. Functional description

Table 3. Function table

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

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

## 8. Limiting values

Table 4. 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 <sub>CC</sub>  | supply voltage          |                                                          | -0.5 | +6.5                  | V    |
| V <sub>I</sub>   | input voltage           | [1]                                                      | -0.5 | +6.5                  | V    |
| V <sub>O</sub>   | output voltage          | [2]                                                      | -0.5 | V <sub>CC</sub> + 0.5 | V    |
| I <sub>IK</sub>  | input clamping current  | V <sub>I</sub> < 0 V                                     | -50  | -                     | mA   |
| I <sub>OK</sub>  | output clamping current | V <sub>O</sub> > V <sub>CC</sub> or V <sub>O</sub> < 0 V | -    | ±50                   | mA   |
| I <sub>O</sub>   | output current          | V <sub>O</sub> = 0 V to V <sub>CC</sub>                  | -    | ±50                   | mA   |
| I <sub>CC</sub>  | supply current          |                                                          | -    | 100                   | mA   |
| I <sub>GND</sub> | ground current          |                                                          | -100 | -                     | mA   |
| T <sub>stg</sub> | storage temperature     |                                                          | -65  | +150                  | °C   |
| P <sub>tot</sub> | total power dissipation | T <sub>amb</sub> = -40 °C to +125 °C [3]                 | -    | 500                   | mW   |

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

[2] The output voltage ratings may be exceeded if the output current ratings are observed.

[3] For SOT108-1 (SO14) package: P<sub>tot</sub> derates linearly with 10.1 mW/K above 100 °C.  
 For SOT402-1 (TSSOP14) package: P<sub>tot</sub> derates linearly with 7.3 mW/K above 81 °C.  
 For SOT762-1 (DHVQFN14) package: P<sub>tot</sub> derates linearly with 9.6 mW/K above 98 °C.

## 9. Recommended operating conditions

Table 5. Recommended operating conditions

| Symbol           | Parameter           | Conditions | Min  | Typ | Max             | Unit |
|------------------|---------------------|------------|------|-----|-----------------|------|
| V <sub>CC</sub>  | supply voltage      |            | 1.65 | -   | 3.6             | V    |
|                  |                     | functional | 1.2  | -   | -               | V    |
| V <sub>I</sub>   | input voltage       |            | 0    | -   | 5.5             | V    |
| V <sub>O</sub>   | output voltage      |            | 0    | -   | V <sub>CC</sub> | V    |
| T <sub>amb</sub> | ambient temperature |            | -40  | -   | +125            | °C   |

## 10. Static characteristics

Table 6. Static characteristics

At recommended operating conditions. Voltages are referenced to GND (ground = 0 V).

| Symbol                              | Parameter                 | Conditions                                                                                                      | Min                    | Typ [1] | Max  | Unit |
|-------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------|---------|------|------|
| T <sub>amb</sub> = -40 °C to +85 °C |                           |                                                                                                                 |                        |         |      |      |
| V <sub>OH</sub>                     | HIGH-level output voltage | V <sub>I</sub> = V <sub>T+</sub> or V <sub>T-</sub>                                                             |                        |         |      |      |
|                                     |                           | I <sub>O</sub> = -100 µA; V <sub>CC</sub> = 1.65 V to 3.6 V                                                     | V <sub>CC</sub> - 0.2  | -       | -    | V    |
|                                     |                           | I <sub>O</sub> = -4 mA; V <sub>CC</sub> = 1.65 V                                                                | V <sub>CC</sub> - 0.45 | -       | -    | V    |
|                                     |                           | I <sub>O</sub> = -8 mA; V <sub>CC</sub> = 2.3 V                                                                 | V <sub>CC</sub> - 0.5  | -       | -    | V    |
|                                     |                           | I <sub>O</sub> = -12 mA; V <sub>CC</sub> = 2.7 V                                                                | V <sub>CC</sub> - 0.5  | -       | -    | V    |
|                                     |                           | I <sub>O</sub> = -18 mA; V <sub>CC</sub> = 3.0 V                                                                | V <sub>CC</sub> - 0.6  | -       | -    | V    |
|                                     |                           | I <sub>O</sub> = -24 mA; V <sub>CC</sub> = 3.0 V                                                                | V <sub>CC</sub> - 0.8  | -       | -    | V    |
| V <sub>OL</sub>                     | LOW-level output voltage  | V <sub>I</sub> = V <sub>T+</sub> or V <sub>T-</sub>                                                             |                        |         |      |      |
|                                     |                           | I <sub>O</sub> = 100 µA; V <sub>CC</sub> = 1.65 V to 3.6 V                                                      | -                      | -       | 0.2  | V    |
|                                     |                           | I <sub>O</sub> = 4 mA; V <sub>CC</sub> = 1.65 V                                                                 | -                      | -       | 0.45 | V    |
|                                     |                           | I <sub>O</sub> = 8 mA; V <sub>CC</sub> = 2.3 V                                                                  | -                      | -       | 0.6  | V    |
|                                     |                           | I <sub>O</sub> = 12 mA; V <sub>CC</sub> = 2.7 V                                                                 | -                      | -       | 0.4  | V    |
|                                     |                           | I <sub>O</sub> = 24 mA; V <sub>CC</sub> = 3.0 V                                                                 | -                      | -       | 0.55 | V    |
| I <sub>I</sub>                      | input leakage current     | V <sub>CC</sub> = 3.6 V; V <sub>I</sub> = 5.5 V or GND                                                          | -                      | ±0.1    | ±5   | µA   |
| I <sub>CC</sub>                     | supply current            | V <sub>CC</sub> = 3.6 V; V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A                          | -                      | 0.1     | 10   | µA   |
| ΔI <sub>CC</sub>                    | additional supply current | per input pin; V <sub>CC</sub> = 2.7 V to 3.6 V; V <sub>I</sub> = V <sub>CC</sub> - 0.6 V; I <sub>O</sub> = 0 A | -                      | 5       | 500  | µA   |
| C <sub>I</sub>                      | input capacitance         | V <sub>CC</sub> = 0 V to 3.6 V; V <sub>I</sub> = GND to V <sub>CC</sub>                                         | -                      | 4.0     | -    | pF   |

| Symbol                                     | Parameter                 | Conditions                                                                                                      | Min                    | Typ [1] | Max  | Unit |
|--------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------|---------|------|------|
| <b>T<sub>amb</sub> = -40 °C to +125 °C</b> |                           |                                                                                                                 |                        |         |      |      |
| V <sub>OH</sub>                            | HIGH-level output voltage | V <sub>I</sub> = V <sub>T+</sub> or V <sub>T-</sub>                                                             |                        |         |      |      |
|                                            |                           | I <sub>O</sub> = -100 µA; V <sub>CC</sub> = 1.65 V to 3.6 V                                                     | V <sub>CC</sub> - 0.3  | -       | -    | V    |
|                                            |                           | I <sub>O</sub> = -4 mA; V <sub>CC</sub> = 1.65 V                                                                | V <sub>CC</sub> - 0.6  | -       | -    | V    |
|                                            |                           | I <sub>O</sub> = -8 mA; V <sub>CC</sub> = 2.3 V                                                                 | V <sub>CC</sub> - 0.65 | -       | -    | V    |
|                                            |                           | I <sub>O</sub> = -12 mA; V <sub>CC</sub> = 2.7 V                                                                | V <sub>CC</sub> - 0.65 | -       | -    | V    |
|                                            |                           | I <sub>O</sub> = -18 mA; V <sub>CC</sub> = 3.0 V                                                                | V <sub>CC</sub> - 0.75 | -       | -    | V    |
|                                            |                           | I <sub>O</sub> = -24 mA; V <sub>CC</sub> = 3.0 V                                                                | V <sub>CC</sub> - 1    | -       | -    | V    |
| V <sub>OL</sub>                            | LOW-level output voltage  | V <sub>I</sub> = V <sub>T+</sub> or V <sub>T-</sub>                                                             |                        |         |      |      |
|                                            |                           | I <sub>O</sub> = 100 µA; V <sub>CC</sub> = 1.65 V to 3.6 V                                                      | -                      | -       | 0.3  | V    |
|                                            |                           | I <sub>O</sub> = 4 mA; V <sub>CC</sub> = 1.65 V                                                                 | -                      | -       | 0.65 | V    |
|                                            |                           | I <sub>O</sub> = 8 mA; V <sub>CC</sub> = 2.3 V                                                                  | -                      | -       | 0.8  | V    |
|                                            |                           | I <sub>O</sub> = 12 mA; V <sub>CC</sub> = 2.7 V                                                                 | -                      | -       | 0.6  | V    |
|                                            |                           | I <sub>O</sub> = 24 mA; V <sub>CC</sub> = 3.0 V                                                                 | -                      | -       | 0.8  | V    |
| I <sub>I</sub>                             | input leakage current     | V <sub>CC</sub> = 3.6 V; V <sub>I</sub> = 5.5 V or GND                                                          | -                      | -       | ±20  | µA   |
| I <sub>CC</sub>                            | supply current            | V <sub>CC</sub> = 3.6 V; V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A                          | -                      | -       | 40   | µA   |
| ΔI <sub>CC</sub>                           | additional supply current | per input pin; V <sub>CC</sub> = 2.7 V to 3.6 V; V <sub>I</sub> = V <sub>CC</sub> - 0.6 V; I <sub>O</sub> = 0 A | -                      | -       | 5    | mA   |

[1] All typical values are measured at V<sub>CC</sub> = 3.3 V (unless stated otherwise) and T<sub>amb</sub> = 25 °C.

## 11. Dynamic characteristics

**Table 7. Dynamic characteristics**

Voltages are referenced to GND (ground = 0 V). For test circuit see Fig. 7.

| Symbol             | Parameter                     | Conditions                                              | -40 °C to +85 °C |         |      | -40 °C to +125 °C |      | Unit |
|--------------------|-------------------------------|---------------------------------------------------------|------------------|---------|------|-------------------|------|------|
|                    |                               |                                                         | Min              | Typ [1] | Max  | Min               | Max  |      |
| t <sub>pd</sub>    | propagation delay             | nA, nB to nY; see Fig. 6 [2]                            |                  |         |      |                   |      |      |
|                    |                               | V <sub>CC</sub> = 1.2 V                                 | -                | 18.0    | -    | -                 | -    | ns   |
|                    |                               | V <sub>CC</sub> = 1.65 V to 1.95 V                      | 2.0              | 7.2     | 12.8 | 2.0               | 16.0 | ns   |
|                    |                               | V <sub>CC</sub> = 2.3 V to 2.7 V                        | 1.5              | 4.0     | 7.6  | 1.5               | 9.6  | ns   |
|                    |                               | V <sub>CC</sub> = 2.7 V                                 | 1.5              | 3.8     | 7.6  | 1.5               | 9.6  | ns   |
|                    |                               | V <sub>CC</sub> = 3.0 V to 3.6 V                        | 1.5              | 3.4     | 6.4  | 1.5               | 8.0  | ns   |
| t <sub>sk(o)</sub> | output skew time              | [3]                                                     | -                | -       | 1.0  | -                 | 1.5  | ns   |
| C <sub>PD</sub>    | power dissipation capacitance | per buffer; V <sub>I</sub> = GND to V <sub>CC</sub> [4] |                  |         |      |                   |      |      |
|                    |                               | V <sub>CC</sub> = 1.65 V to 1.95 V                      | -                | 10.5    | -    | -                 | -    | pF   |
|                    |                               | V <sub>CC</sub> = 2.3 V to 2.7 V                        | -                | 10.8    | -    | -                 | -    | pF   |
|                    |                               | V <sub>CC</sub> = 3.0 V to 3.6 V                        | -                | 11.4    | -    | -                 | -    | pF   |

[1] Typical values are measured at T<sub>amb</sub> = 25 °C and V<sub>CC</sub> = 1.2 V, 1.8 V, 2.5 V, 2.7 V, and 3.3 V respectively.

[2] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.

[3] Skew between any two outputs of the same package switching in the same direction. This parameter is guaranteed by design.

[4] C<sub>PD</sub> is used to determine the dynamic power dissipation (P<sub>D</sub> in µW). P<sub>D</sub> = C<sub>PD</sub> × V<sub>CC</sub><sup>2</sup> × f<sub>i</sub> × N + Σ(C<sub>L</sub> × V<sub>CC</sub><sup>2</sup> × f<sub>o</sub>) where:

f<sub>i</sub> = input frequency in MHz; f<sub>o</sub> = output frequency in MHz;

N = number of inputs switching;

C<sub>L</sub> = output load capacitance in pF;

V<sub>CC</sub> = supply voltage in V;

Σ(C<sub>L</sub> × V<sub>CC</sub><sup>2</sup> × f<sub>o</sub>) = sum of outputs.

11.1. Waveforms and test circuit

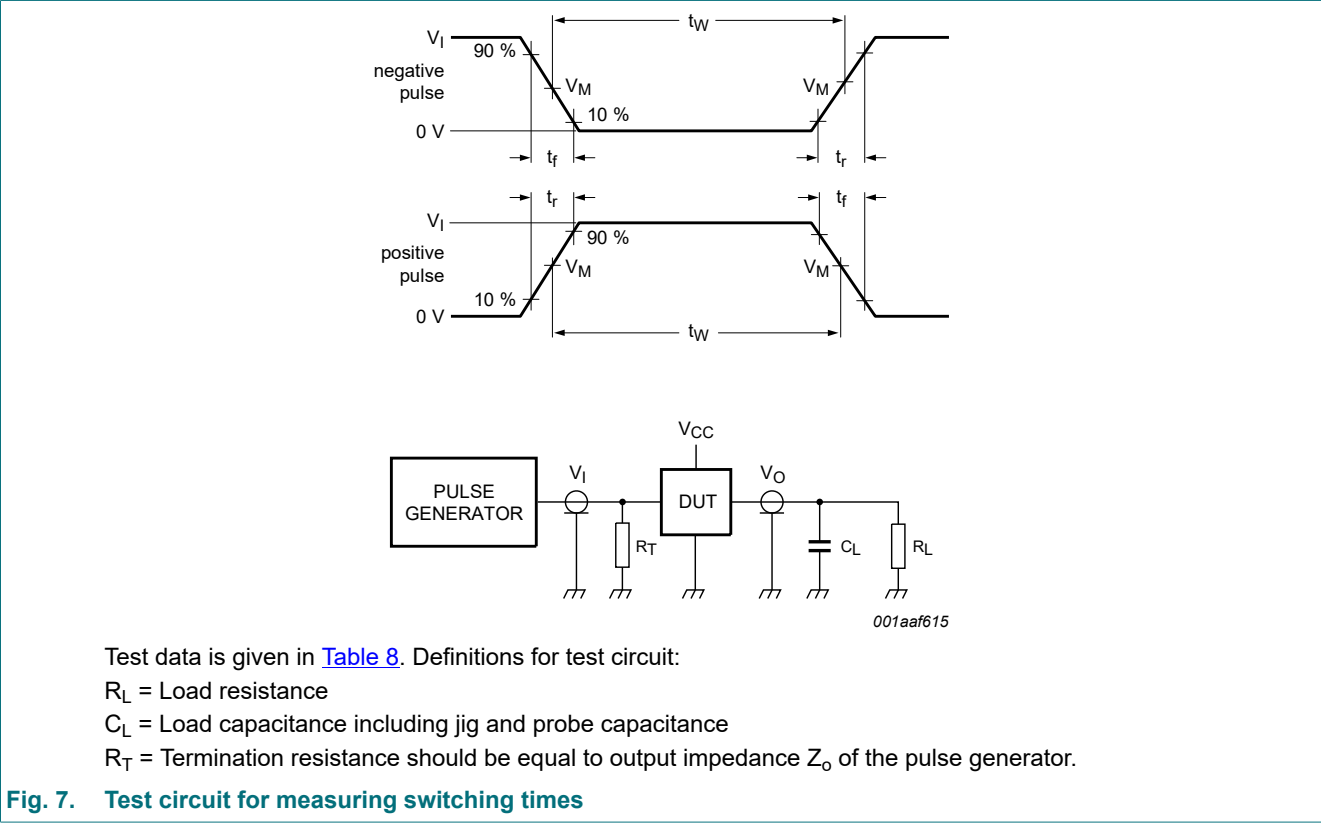
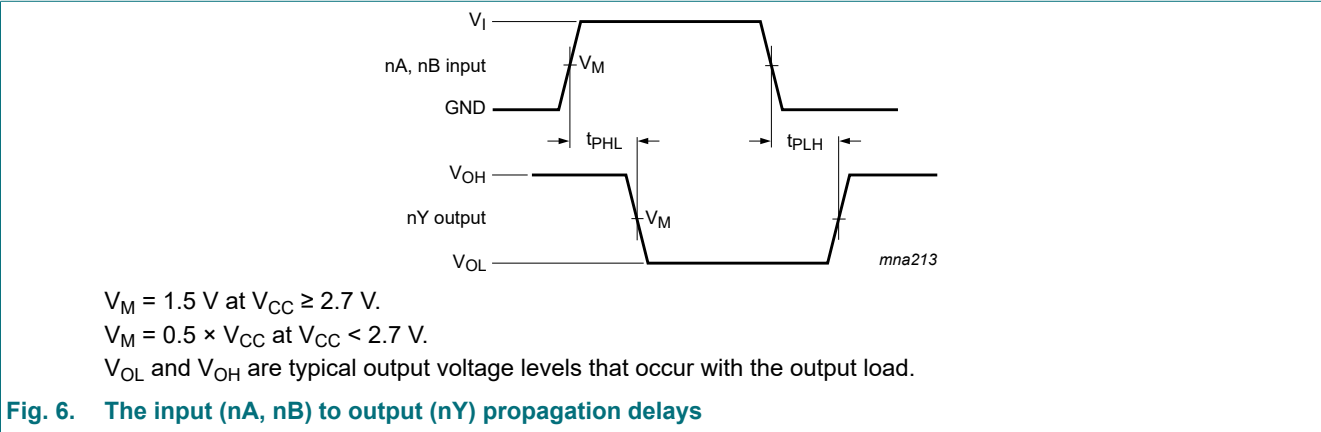


Table 8. Test data

| Supply voltage   | Input    |                      | Load  |              |
|------------------|----------|----------------------|-------|--------------|
|                  | $V_I$    | $t_r, t_f$           | $C_L$ | $R_L$        |
| 1.2 V            | $V_{CC}$ | $\leq 2\text{ ns}$   | 30 pF | 1 k $\Omega$ |
| 1.65 V to 1.95 V | $V_{CC}$ | $\leq 2\text{ ns}$   | 30 pF | 1 k $\Omega$ |
| 2.3 V to 2.7 V   | $V_{CC}$ | $\leq 2\text{ ns}$   | 30 pF | 500 $\Omega$ |
| 2.7 V            | 2.7 V    | $\leq 2.5\text{ ns}$ | 50 pF | 500 $\Omega$ |
| 3.0 V to 3.6 V   | 2.7 V    | $\leq 2.5\text{ ns}$ | 50 pF | 500 $\Omega$ |

## 12. Transfer characteristics

**Table 9. Transfer characteristics**

Voltages are referenced to GND (ground = 0 V); see Fig. 8.

| Symbol          | Parameter                                               | Conditions                  | -40 °C to +85 °C |      | -40 °C to +125 °C |      | Unit |
|-----------------|---------------------------------------------------------|-----------------------------|------------------|------|-------------------|------|------|
|                 |                                                         |                             | Min              | Max  | Min               | Max  |      |
| V <sub>T+</sub> | positive-going threshold voltage                        | V <sub>CC</sub> = 1.2 V     | 0.2              | 1.0  | 0.2               | 1.0  | V    |
|                 |                                                         | V <sub>CC</sub> = 1.65 V    | 0.4              | 1.3  | 0.4               | 1.3  | V    |
|                 |                                                         | V <sub>CC</sub> = 1.95 V    | 0.6              | 1.5  | 0.6               | 1.5  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.3 V     | 0.8              | 1.7  | 0.8               | 1.7  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.5 V     | 0.9              | 1.7  | 0.9               | 1.7  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.7 V     | 1.1              | 2    | 1.1               | 2    | V    |
|                 |                                                         | V <sub>CC</sub> = 3 V       | 1.2              | 2    | 1.2               | 2    | V    |
|                 |                                                         | V <sub>CC</sub> = 3.6 V     | 1.2              | 2    | 1.2               | 2    | V    |
| V <sub>T-</sub> | negative-going threshold voltage                        | V <sub>CC</sub> = 1.2 V     | 0.12             | 0.75 | 0.12              | 0.75 | V    |
|                 |                                                         | V <sub>CC</sub> = 1.65 V    | 0.15             | 0.85 | 0.15              | 0.85 | V    |
|                 |                                                         | V <sub>CC</sub> = 1.95 V    | 0.25             | 0.95 | 0.25              | 0.95 | V    |
|                 |                                                         | V <sub>CC</sub> = 2.3 V     | 0.4              | 1.1  | 0.4               | 1.1  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.5 V     | 0.4              | 1.2  | 0.4               | 1.2  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.7 V     | 0.8              | 1.4  | 0.8               | 1.4  | V    |
|                 |                                                         | V <sub>CC</sub> = 3 V       | 0.8              | 1.5  | 0.8               | 1.5  | V    |
|                 |                                                         | V <sub>CC</sub> = 3.6 V     | 0.8              | 1.5  | 0.8               | 1.5  | V    |
| V <sub>H</sub>  | hysteresis voltage (V <sub>T+</sub> - V <sub>T-</sub> ) | V <sub>CC</sub> = 1.2 V     | 0.1              | 1.0  | 0.1               | 1.0  | V    |
|                 |                                                         | V <sub>CC</sub> = 1.65 V    | 0.2              | 1.15 | 0.2               | 1.15 | V    |
|                 |                                                         | V <sub>CC</sub> = 1.95 V    | 0.2              | 1.25 | 0.2               | 1.25 | V    |
|                 |                                                         | V <sub>CC</sub> = 2.3 V     | 0.3              | 1.3  | 0.3               | 1.3  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.5 V     | 0.3              | 1.3  | 0.3               | 1.3  | V    |
|                 |                                                         | V <sub>CC</sub> = 2.7 V     | 0.3              | 1.1  | 0.3               | 1.1  | V    |
|                 |                                                         | V <sub>CC</sub> = 3 V       | 0.3              | 1.2  | 0.3               | 1.2  | V    |
|                 |                                                         | V <sub>CC</sub> = 3.6 V [1] | 0.3              | 1.2  | 0.3               | 1.2  | V    |

[1] Typical transfer characteristic is displayed in Fig. 9.

12.1. Waveforms transfer characteristics

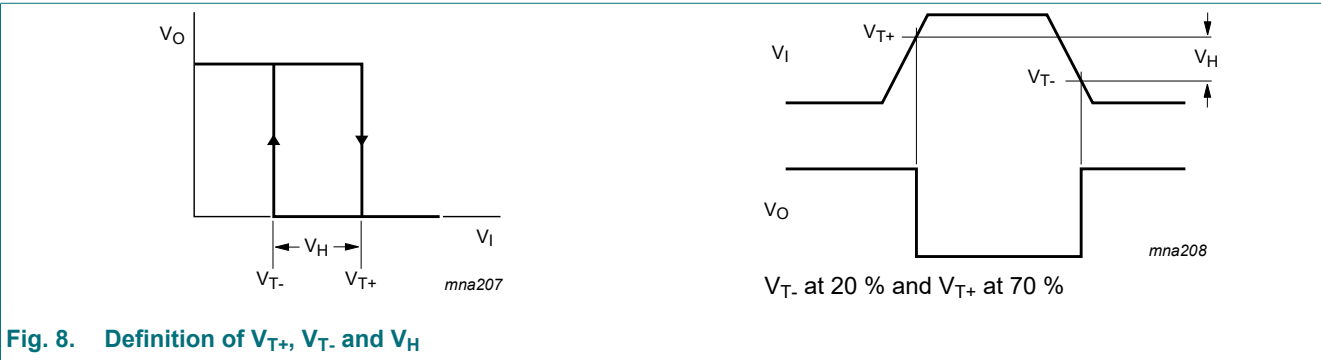


Fig. 8. Definition of  $V_{T+}$ ,  $V_{T-}$  and  $V_H$

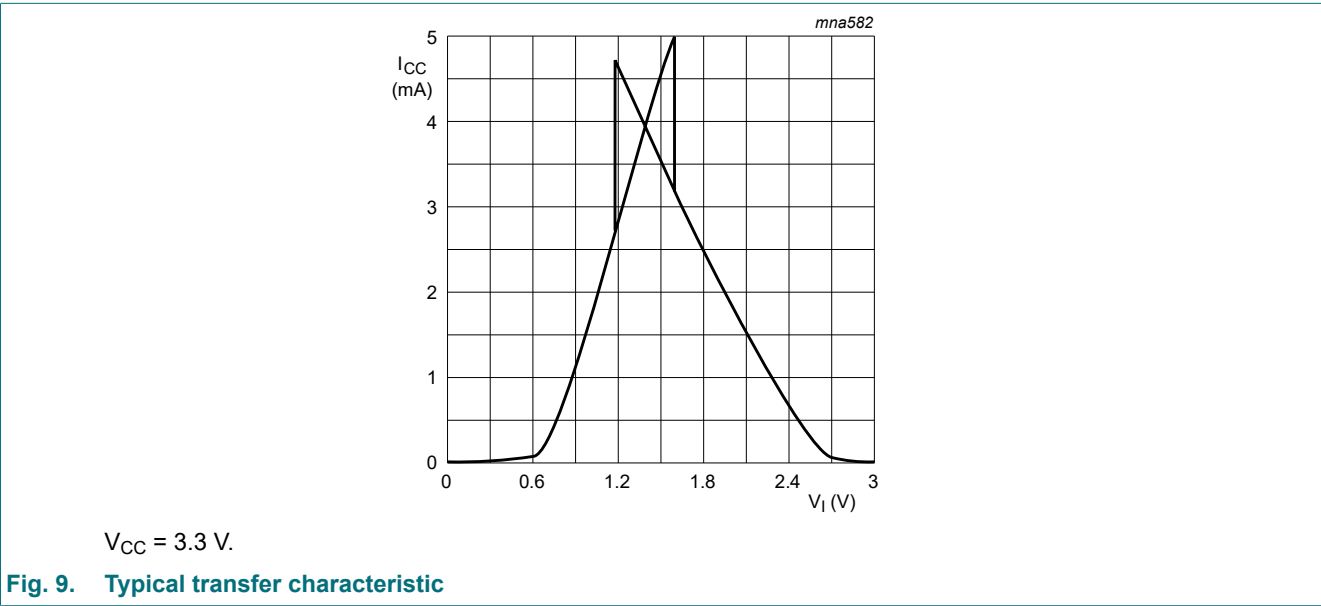


Fig. 9. Typical transfer characteristic

13. Package outline

SO14: plastic small outline package; 14 leads; body width 3.9 mm

SOT108-1

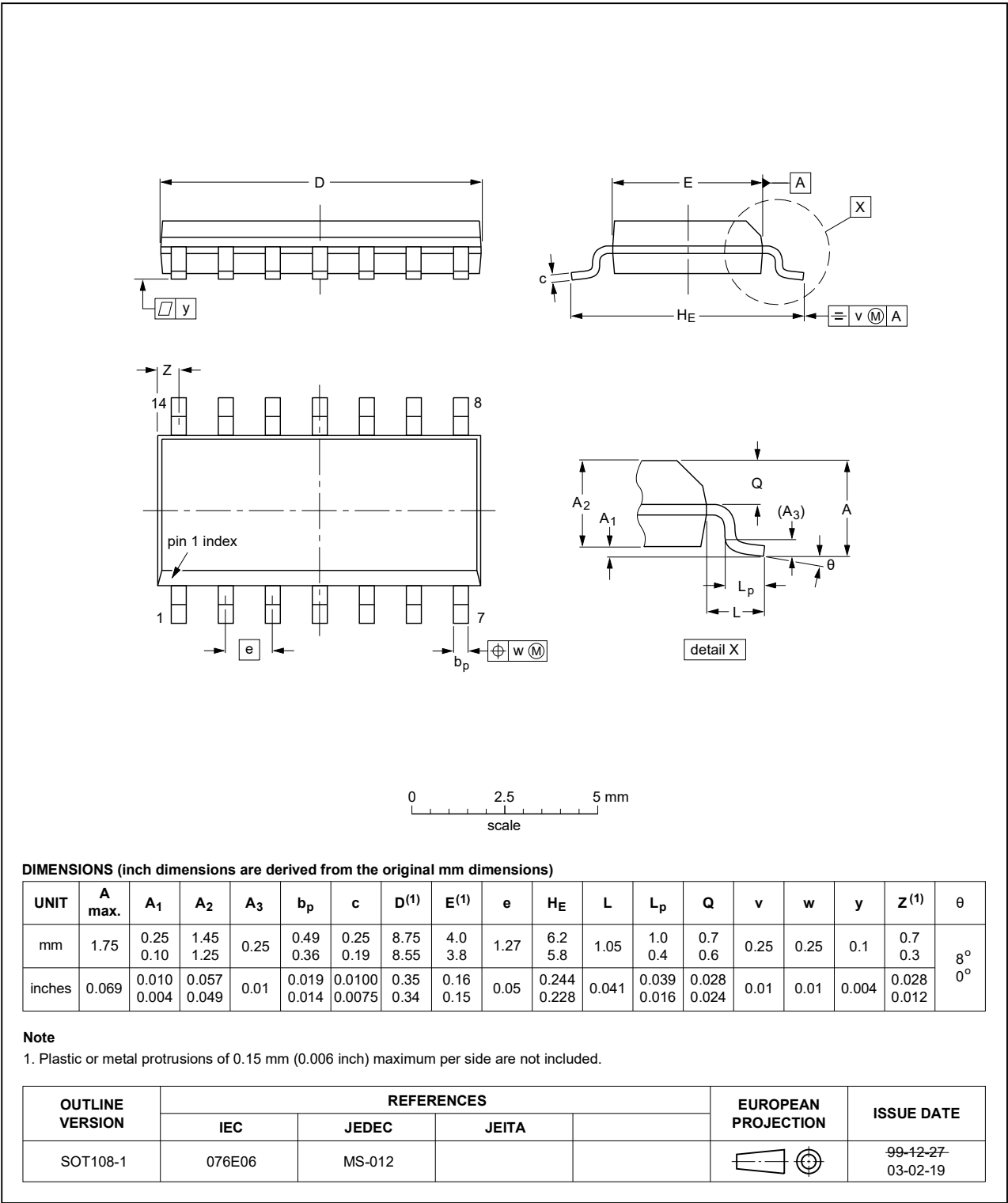


Fig. 10. Package outline SOT108-1 (SO14)

TSSOP14: plastic thin shrink small outline package; 14 leads; body width 4.4 mm

SOT402-1



Fig. 11. Package outline SOT402-1 (TSSOP14)

DHVQFN14: plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads;  
14 terminals; body 2.5 x 3 x 0.85 mm

SOT762-1



Fig. 12. Package outline SOT762-1 (DHVQFN14)

## 14. Abbreviations

Table 10. Abbreviations

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

## 15. Revision history

Table 11. Revision history

| Document ID        | Release date                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data sheet status  | Change notice | Supersedes         |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|--------------------|
| 74LVC132A_Q100 v.2 | 20200706                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Product data sheet | -             | 74LVC132A_Q100 v.1 |
| Modifications:     | <ul style="list-style-type: none"><li>The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.</li><li>Legal texts have been adapted to the new company name where appropriate.</li><li><a href="#">Section 2</a> updated.</li><li><a href="#">Table 4</a>: Derating values for <math>P_{tot}</math> total power dissipation updated.</li><li><a href="#">Fig. 12</a>: Package outline drawing SOT762-1 (DHVQFN14) updated.</li></ul> |                    |               |                    |
| 74LVC132A_Q100 v.1 | 20130404                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Product data sheet | -             | -                  |

## 16. Legal information

### Data sheet status

| Document status<br>[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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For more information, please visit: <http://www.nexperia.com>

For sales office addresses, please send an email to: [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)

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**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331