# 74HC423-Q100

## Dual retriggerable monostable multivibrator with reset

Rev. 1.1 — 13 March 2024 | Product data sheet

## 1. General description

The 74HC423-Q100 is a dual retriggerable monostable multivibrator with output pulse width control by two methods. The basic pulse time is programmed by selection of an external resistor ($R_{EXT}$) and capacitor ($C_{EXT}$). Once triggered, the basic output pulse width may be extended by retriggering (n$\overline{A}$) or (nB). By repeating this process, the output pulse period (nQ = HIGH, n$\overline{Q}$ = LOW) can be made as long as desired. When n$\overline{RD}$ is LOW, it forces the nQ output LOW, the n$\overline{Q}$ output HIGH and also inhibits the triggering. Schmitt-trigger action in the n$\overline{A}$ and nB inputs, makes the circuit highly tolerant to slower input rise and fall times. The '423' is identical to the '123' but cannot be triggered via the reset input. Inputs include clamp diodes. This enables the use of current limiting resistors to interface inputs to voltages in excess of $V_{CC}$.

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

- Automotive product qualification in accordance with AEC-Q100 (Grade 1)
  - Specified from -40 °C to +85 °C and from -40 °C to +125 °C
- DC triggered from active HIGH or active LOW inputs
- Retriggerable for very long pulses up to 100 % duty factor
- Direct reset terminates output pulse
- Schmitt-trigger action on all inputs except for the reset input
- Wide supply voltage range from 2.0 V to 6.0 V
- CMOS low power dissipation
- High noise immunity
- Latch-up performance exceeds 100 mA per JESD 78 Class II Level B
- Complies with JEDEC standard no. 7A
- CMOS input level
- ESD protection:
  - HBM: ANSI/ESDA/JEDEC JS-001 class 2 exceeds 2000 V
  - CDM: ANSI/ESDA/JEDEC JS-002 class C3 exceeds 1000 V
- DHVQFN package with Side-Wettable Flanks enabling Automatic Optical Inspection (AOI) of solder joints

## 3. Ordering information

**Table 1. Ordering information**

| Type number | Package | | | |
|---|---|---|---|---|
| | Temperature range | Name | Description | Version |
| 74HC423D-Q100 | -40 °C to +125 °C | SO16 | plastic small outline package; 16 leads; body width 3.9 mm | SOT109-1 |

nexperia

# 4. Functional diagram

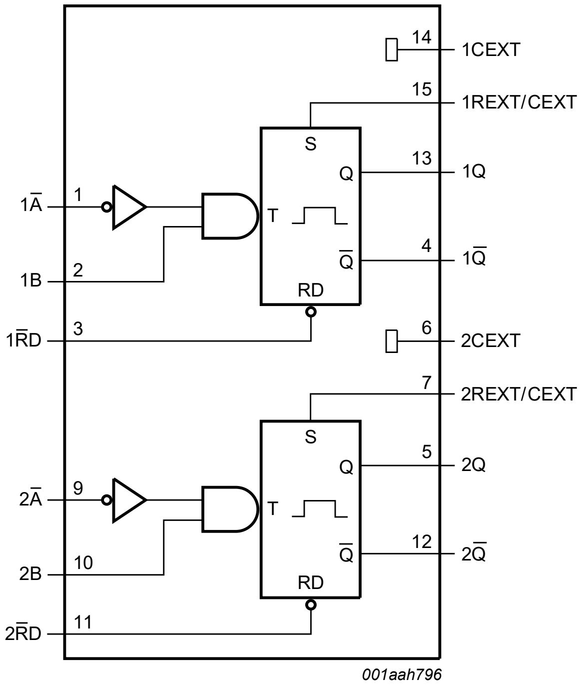



**Fig. 1. Functional diagram**

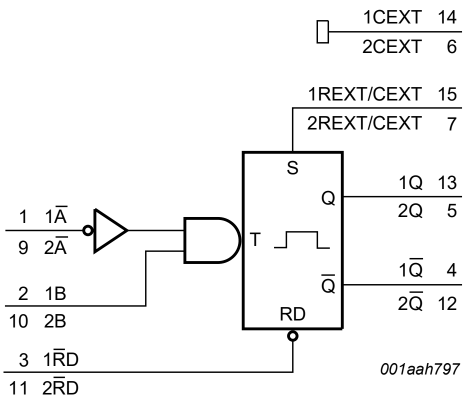



**Fig. 2. Logic symbol**

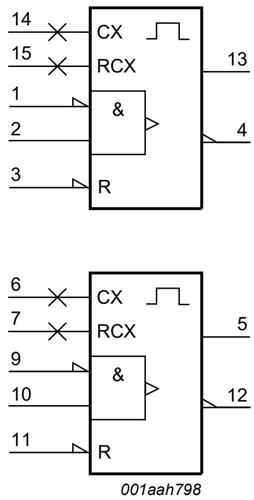



**Fig. 3. IEC logic symbol**

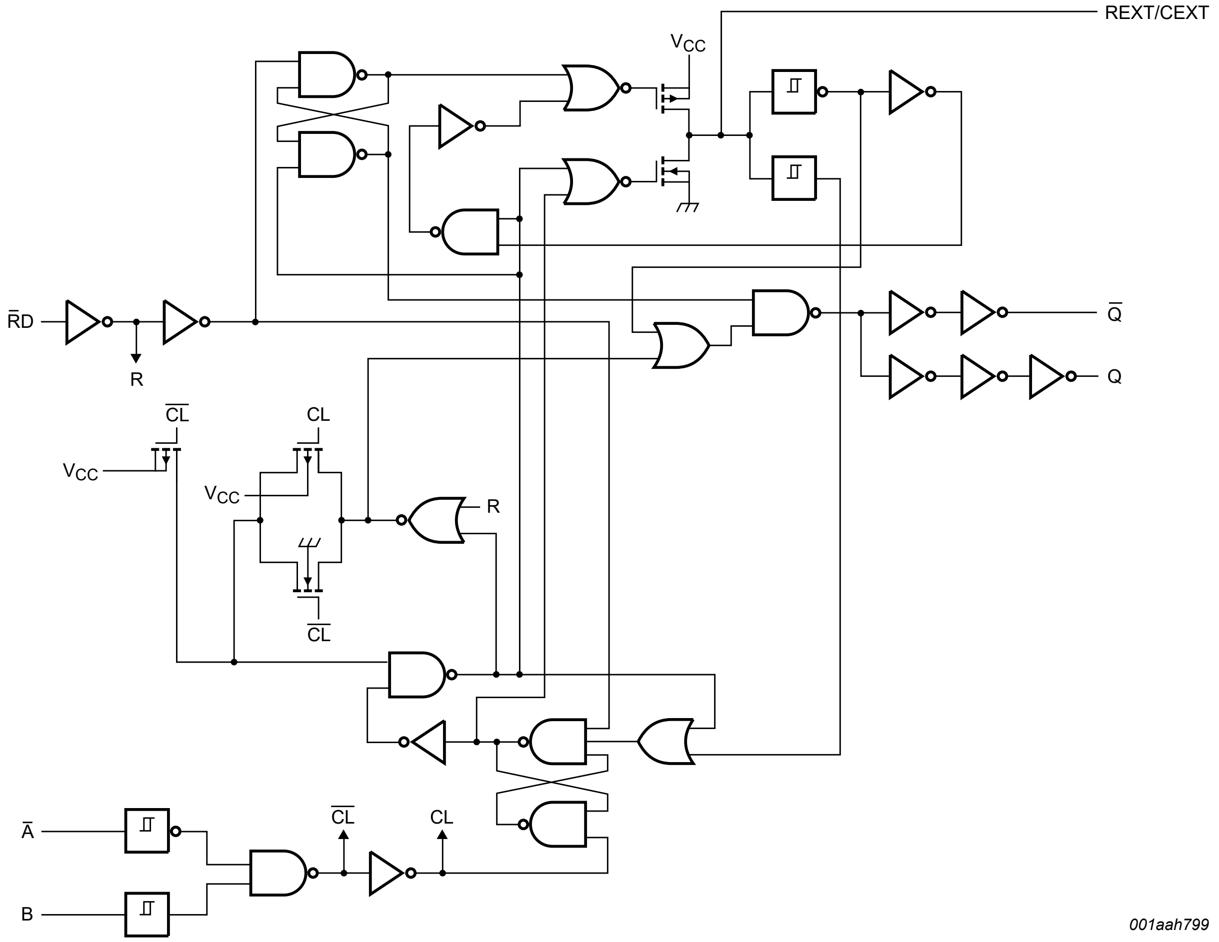
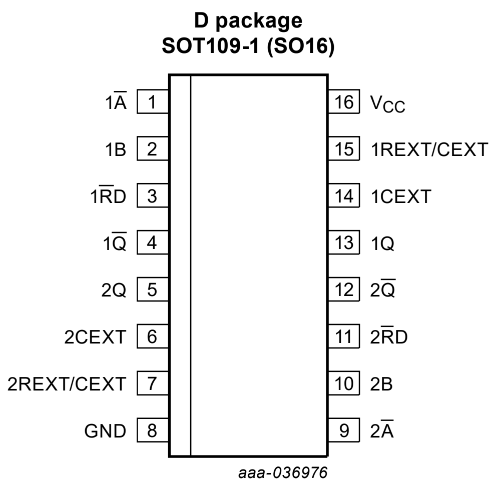



Fig. 4. Logic diagram

# 5. Pinning information

## 5.1. Pinning



### 5.2. Pin description

**Table 2. Pin description**

| Symbol | Pin | Description |
|---|---|---|
| 1$\overline{\mathrm{A}}$, 2$\overline{\mathrm{A}}$ | 1, 9 | trigger input (negative edge triggered) |
| 1B, 2B | 2, 10 | trigger input (positive edge triggered) |
| 1$\overline{\mathrm{RD}}$, 2$\overline{\mathrm{RD}}$ | 3, 11 | direct reset (active LOW) |
| 1$\overline{\mathrm{Q}}$, 2$\overline{\mathrm{Q}}$ | 4, 12 | output (active LOW) |
| GND | 8 | ground (0 V) |
| 1Q, 2Q | 13, 5 | output (active HIGH) |
| 1CEXT, 2CEXT | 14, 6 | external capacitor connection |
| 1REXT/CEXT, 2REXT/CEXT | 15, 7 | external resistor/capacitor connection |
| $V_{CC}$ | 16 | supply voltage |

## 6. Functional description

**Table 3. Function table**

*H = HIGH voltage level; L = LOW voltage level; X = don't care; ↑ = LOW-to-HIGH transition; ↓= HIGH-to-LOW transition; ⊓ = one HIGH level output pulse; ⊔ = one LOW level output pulse.*

| Input | | | Output | |
|---|---|---|---|---|
| **n$\overline{\mathrm{RD}}$** | **n$\overline{\mathrm{A}}$** | **nB** | **nQ** | **n$\overline{\mathrm{Q}}$** |
| L | X | X | L | H |
| X | H | X | L [1] | H [1] |
| X | X | L | L [1] | H [1] |
| H | L | ↑ | ⊓ | ⊔ |
| H | ↓ | H | ⊓ | ⊔ |

[1] If the monostable multivibrator was triggered before this condition was established, the pulse will continue as programmed.

## 7. 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 |
|---|---|---|---|---|---|---|
| $V_{CC}$ | supply voltage | | | -0.5 | +7 | V |
| $I_{IK}$ | input clamping current | $V_I$ < -0.5 V or $V_I$ > $V_{CC}$ + 0.5 V | [1] | - | ±20 | mA |
| $I_{OK}$ | output clamping current | $V_O$ < -0.5 V or $V_O$ > $V_{CC}$ + 0.5 V | [1] | - | ±20 | mA |
| $I_O$ | output current | -0.5 V < $V_O$ < $V_{CC}$ + 0.5 V;<br>except for pins nREXT/CEXT | | - | ±25 | mA |
| $I_{CC}$ | supply current | | | - | 50 | mA |
| $I_{GND}$ | ground current | | | -50 | - | mA |
| $T_{stg}$ | storage temperature | | | -65 | +150 | °C |
| $P_{tot}$ | total power dissipation | SO16 and DHVQFN16 packages | [2] | - | 500 | mW |

[1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.
[2] For SOT109-1 (SO16) package: $P_{tot}$ derates linearly with 12.4 mW/K above 110 °C.

## 8. Recommended operating conditions

**Table 5. Recommended operating conditions**

*Voltages are referenced to GND (ground = 0 V).*

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{CC}$ | supply voltage | | 2.0 | 5.0 | 6.0 | V |
| $V_I$ | input voltage | | 0 | - | $V_{CC}$ | V |
| $V_O$ | output voltage | | 0 | - | $V_{CC}$ | V |
| $T_{amb}$ | ambient temperature | | -40 | - | +125 | °C |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CC}$ = 2.0 V | - | - | 625 | ns/V |
| | | $V_{CC}$ = 4.5 V | - | 1.67 | 139 | ns/V |
| | | $V_{CC}$ = 6.0 V | - | - | 83 | ns/V |

## 9. Static characteristics

**Table 6. Static characteristics**

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

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +85 °C | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC}$ = 2.0 V | 1.5 | 1.2 | - | 1.5 | - | 1.5 | - | V |
| | | $V_{CC}$ = 4.5 V | 3.15 | 2.4 | - | 3.15 | - | 3.15 | - | V |
| | | $V_{CC}$ = 6.0 V | 4.2 | 3.2 | - | 4.2 | - | 4.2 | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC}$ = 2.0 V | - | 0.8 | 0.5 | - | 0.5 | - | 0.5 | V |
| | | $V_{CC}$ = 4.5 V | - | 2.1 | 1.35 | - | 1.35 | - | 1.35 | V |
| | | $V_{CC}$ = 6.0 V | - | 2.8 | 1.8 | - | 1.8 | - | 1.8 | V |
| $V_{OH}$ | HIGH-level output voltage | $V_I = V_{IH}$ or $V_{IL}$ | | | | | | | | |
| | | $I_O$ = -20 μA; $V_{CC}$ = 2.0 V | 1.9 | 2.0 | - | 1.9 | - | 1.9 | - | V |
| | | $I_O$ = -20 μA; $V_{CC}$ = 4.5 V | 4.4 | 4.5 | - | 4.4 | - | 4.4 | - | V |
| | | $I_O$ = -20 μA; $V_{CC}$ = 6.0 V | 5.9 | 6.0 | - | 5.9 | - | 5.9 | - | V |
| | | $I_O$ = -4.0 mA; $V_{CC}$ = 4.5 V | 3.98 | 4.32 | - | 3.84 | - | 3.7 | - | V |
| | | $I_O$ = -5.2 mA; $V_{CC}$ = 6.0 V | 5.48 | 5.81 | - | 5.34 | - | 5.2 | - | V |
| $V_{OL}$ | LOW-level output voltage | $V_I = V_{IH}$ or $V_{IL}$ | | | | | | | | |
| | | $I_O$ = 20 μA; $V_{CC}$ = 2.0 V | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O$ = 20 μA; $V_{CC}$ = 4.5 V | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O$ = 20 μA; $V_{CC}$ = 6.0 V | - | 0 | 0.1 | - | 0.1 | - | 0.1 | V |
| | | $I_O$ = 4.0 mA; $V_{CC}$ = 4.5 V | - | 0.15 | 0.26 | - | 0.33 | - | 0.4 | V |
| | | $I_O$ = 5.2 mA; $V_{CC}$ = 6.0 V | - | 0.16 | 0.26 | - | 0.33 | - | 0.4 | V |
| $I_I$ | input leakage current | $V_I = V_{CC}$ or GND; $V_{CC}$ = 6.0 V | - | - | ±0.1 | - | ±1.0 | - | ±1.0 | μA |
| $I_{CC}$ | supply current | $V_I = V_{CC}$ or GND; $I_O$ = 0 A; $V_{CC}$ = 6.0 V | - | - | 8.0 | - | 80 | - | 160 | μA |
| $C_I$ | input capacitance | | - | 3.5 | - | - | - | - | - | pF |

## 10. Dynamic characteristics

**Table 7. Dynamic characteristics**

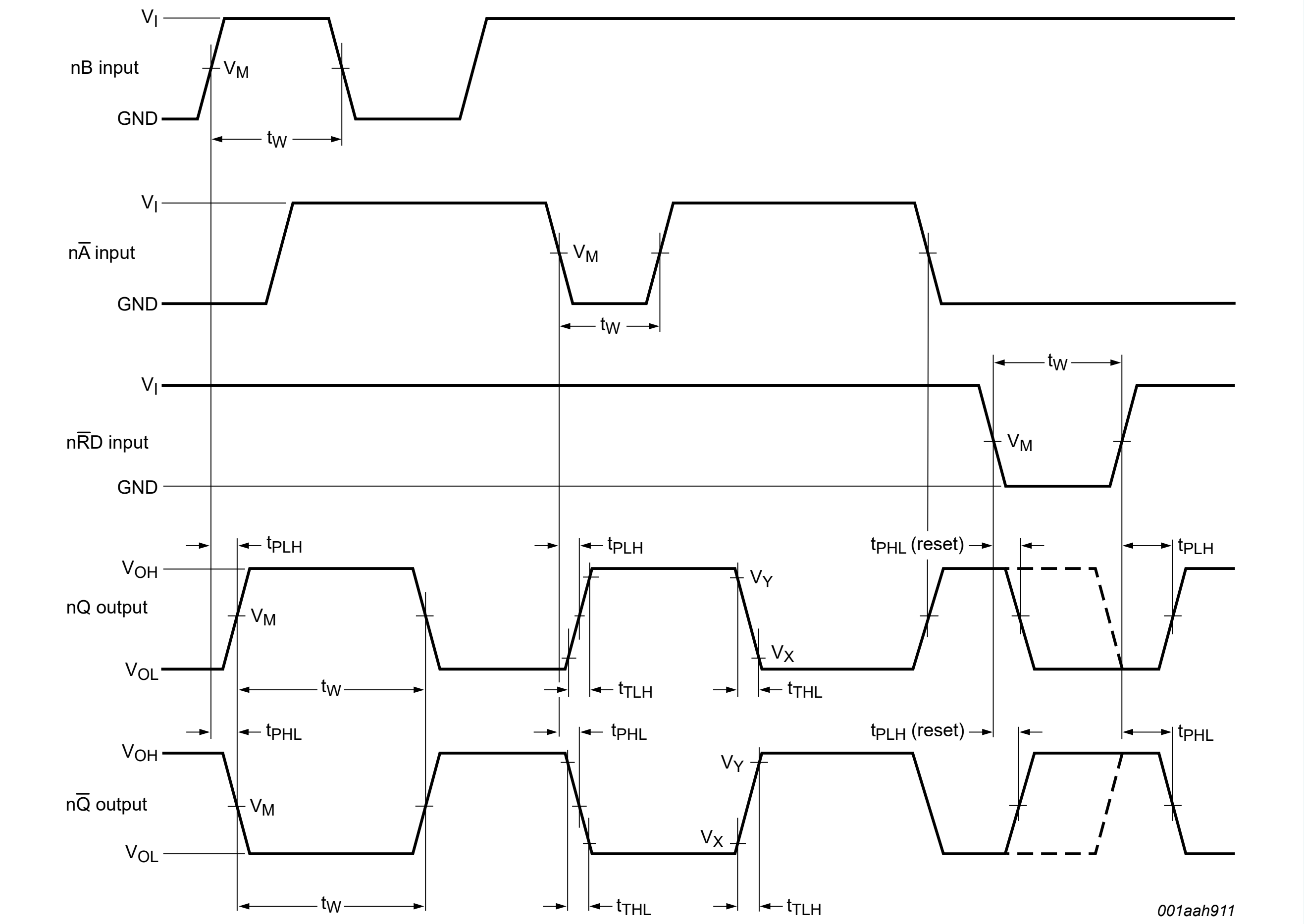
*GND = 0 V; for test circuit see Fig. 10.*

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +85 °C | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| $t_{pd}$ | propagation delay | n$\overline{A}$ or nB to nQ or n$\overline{Q}$; $R_{EXT}$ = 5 kΩ; $C_{EXT}$ = 0 pF; see Fig. 5 [1] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 80 | 255 | - | 320 | - | 385 | ns |
| | | $V_{CC}$ = 4.5 V | - | 29 | 51 | - | 64 | - | 77 | ns |
| | | $V_{CC}$ = 5.0 V; $C_L$ = 15 pF | - | 25 | - | - | - | - | - | ns |
| | | $V_{CC}$ = 6.0 V | - | 23 | 43 | - | 54 | - | 65 | ns |
| | | n$\overline{RD}$ to nQ or n$\overline{Q}$; see Fig. 5 [1] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 66 | 215 | - | 270 | - | 325 | ns |
| | | $V_{CC}$ = 4.5 V | - | 24 | 43 | - | 54 | - | 65 | ns |
| | | $V_{CC}$ = 5.0 V; $C_L$ = 15 pF | - | 20 | - | - | - | - | - | ns |
| | | $V_{CC}$ = 6.0 V | - | 19 | 37 | - | 46 | - | 55 | ns |
| $t_t$ | transition time | see Fig. 5 [2] | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | - | 19 | 75 | - | 95 | - | 110 | ns |
| | | $V_{CC}$ = 4.5 V | - | 7 | 15 | - | 19 | - | 22 | ns |
| | | $V_{CC}$ = 6.0 V | - | 6 | 13 | - | 16 | - | 19 | ns |
| $t_W$ | pulse width | n$\overline{A}$ input LOW; see Fig. 5 and Fig. 6 | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | 100 | 11 | - | 125 | - | 150 | - | ns |
| | | $V_{CC}$ = 4.5 V | 20 | 4 | - | 25 | - | 30 | - | ns |
| | | $V_{CC}$ = 6.0 V | 17 | 3 | - | 21 | - | 26 | - | ns |
| | | nB input HIGH; see Fig. 5 and Fig. 6 | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | 100 | 17 | - | 125 | - | 150 | - | ns |
| | | $V_{CC}$ = 4.5 V | 20 | 6 | - | 25 | - | 30 | - | ns |
| | | $V_{CC}$ = 6.0 V | 17 | 5 | - | 21 | - | 26 | - | ns |
| | | n$\overline{RD}$ input LOW; see Fig. 5 and Fig. 6 | | | | | | | | |
| | | $V_{CC}$ = 2.0 V | 100 | 14 | - | 125 | - | 150 | - | ns |
| | | $V_{CC}$ = 4.5 V | 20 | 5 | - | 25 | - | 30 | - | ns |
| | | $V_{CC}$ = 6.0 V | 17 | 4 | - | 21 | - | 26 | - | ns |
| | | nQ HIGH or n$\overline{Q}$ LOW; $V_{CC}$ = 5.0 V; $R_{EXT}$ = 10 kΩ; $C_{EXT}$ = 100 nF; see Fig. 5 and Fig. 6 | - | 450 | - | - | - | - | - | μs |
| | | nQ HIGH or n$\overline{Q}$ LOW; $V_{CC}$ = 5.0 V; $R_{EXT}$ = 5 kΩ; $C_{EXT}$ = 0 pF; $V_I$ = GND to $V_{CC}$; see Fig. 5 and Fig. 6 [3] | - | 75 | - | - | - | - | - | ns |
| $t_{rtrig}$ | retrigger time | n$\overline{A}$ or nB input; $V_{CC}$ = 5.0 V; $R_{EXT}$ = 5 kΩ; $C_{EXT}$ = 0 pF; see Fig. 8 [4] | - | 110 | - | - | - | - | - | ns |
| $R_{EXT}$ | external timing resistor | $V_{CC}$ = 2.0 V; see Fig. 6 | 10 | - | 1000 | - | - | - | - | kΩ |
| | | $V_{CC}$ = 5.0 V | 2 | - | 1000 | - | - | - | - | kΩ |

| Symbol | Parameter | Conditions | | 25 °C | | | -40 °C to +85 °C | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Min | Typ | Max | Min | Max | Min | Max | |
| $C_{EXT}$ | external timing capacitor | $V_{CC}$ = 5.0 V; see Fig. 6 | [5] | no limits | | | | | | | pF |
| $C_{PD}$ | power dissipation capacitance | per package; $V_I$ = GND to $V_{CC}$ | [6] | - | 54 | - | - | - | - | - | pF |

[1] $t_{pd}$ is the same as $t_{PHL}$ and $t_{PLH}$.
[2] $t_t$ is the same as $t_{THL}$ and $t_{TLH}$.
[3] For other $R_{EXT}$ and $C_{EXT}$ combinations see Fig. 6. If $C_{EXT}$ > 10 pF, the following formula is valid:
$t_W = K \times R_{EXT} \times C_{EXT}$ (typ.), where:
$t_W$ = output pulse width in ns;
$R_{EXT}$ = external resistor in kΩ;
$C_{EXT}$ = external capacitor in pF;
K = 0.55 for $V_{CC}$ = 2.0 V , K = 0.45 for $V_{CC}$ = 5.0 V; see Fig. 7.
Inherent test jig and pin capacitance at pins 15 and 7 (nREXT/CEXT) is 7 pF.
[4] The time to retrigger the monostable multivibrator depends on the values of $R_{EXT}$ and $C_{EXT}$. The output pulse width will only be extended when the time between the active-going edges of the trigger input pulses meets the minimum retrigger time.
If $C_{EXT}$ > 10 pF, the following formula (where $V_{CC}$ = 5.0 V) for the set-up time of a retrigger pulse is valid:
$t_{rtrig} = 30 + 0.19 \times R_{EXT} \times C_{EXT}^{0.9} + 13 \times R_{EXT}^{1.05}$ (typ.); where:
$t_{rtrig}$ = retrigger time in ns;
$C_{EXT}$ = external capacitor in pF;
$R_{EXT}$ = external resistor in kΩ.
Inherent test jig and pin capacitance at pins 15 and 7 (nREXT/CEXT) is 7 pF.
[5] When the device is powered-up, initiate the device via a reset pulse, when $C_{EXT}$ < 50 pF.
[6] $C_{PD}$ is used to determine the dynamic power dissipation ($P_D$ in μW):
$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \Sigma(C_L \times V_{CC}^2 \times f_o)$; 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;
$\Sigma(C_L \times V_{CC}^2 \times f_o)$ = sum of outputs.

## 10.1. Waveforms and test circuit



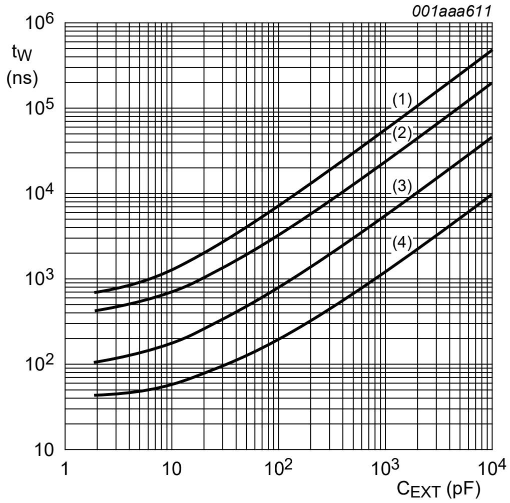

Measurement points are given in Table 8.

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

**Fig. 5. Pulse widths, propagation delays from inputs (nĀ, nB, nR̄D) to outputs (nQ, nQ̄) and output transition times**

**Table 8. Measurement points**

| Input | | Output | | |
|---|---|---|---|---|
| $V_I$ | $V_M$ | $V_M$ | $V_X$ | $V_Y$ |
| $V_{CC}$ | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ | $0.1 \times V_{CC}$ | $0.9 \times V_{CC}$ |




$V_{CC}$ = 5.0 V and $T_{amb}$ = 25 °C.

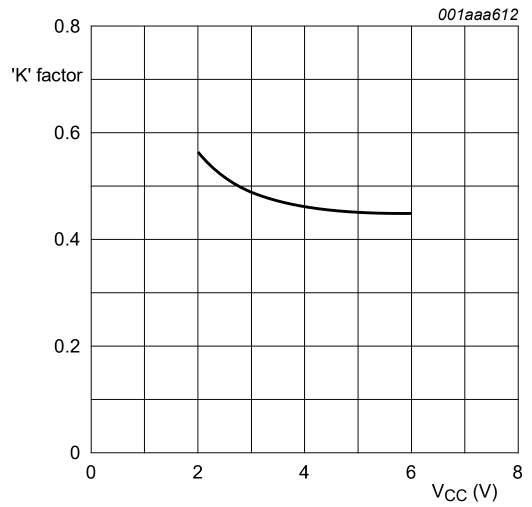
(1) $R_{EXT}$ = 100 kΩ.

(2) $R_{EXT}$ = 50 kΩ.

(3) $R_{EXT}$ = 10 kΩ.

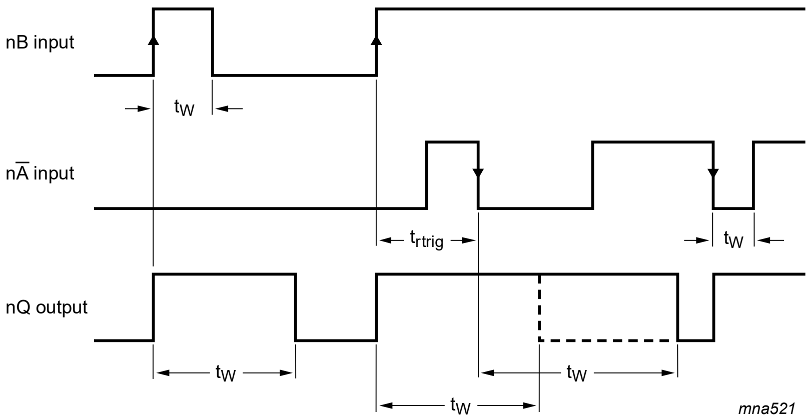
(4) $R_{EXT}$ = 2 kΩ.

**Fig. 6. Typical output pulse width as a function of the external capacitor values**



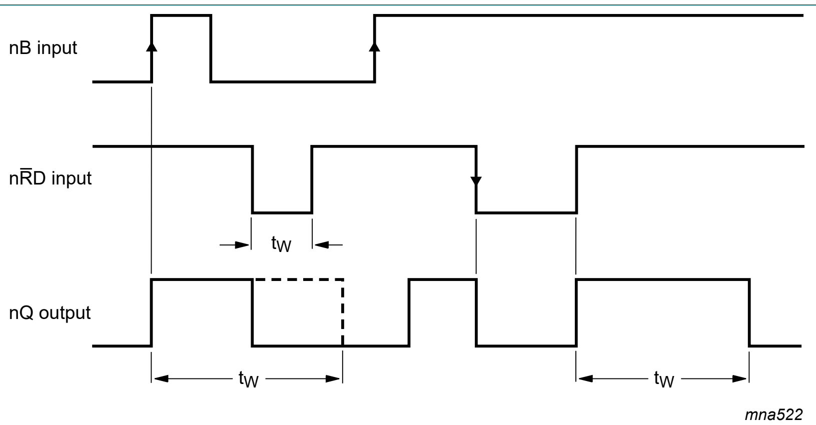

External capacitance = 10 nF, external resistance = 10 kΩ to 100 kΩ, and $T_{amb}$ = 25 °C.

**Fig. 7. Typical 'K' factor**



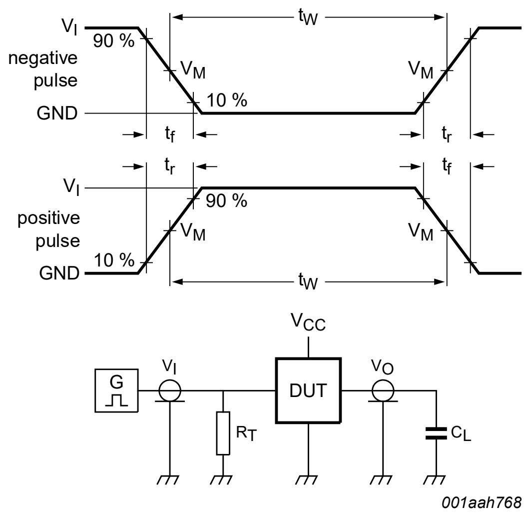

nR̅D̅ = HIGH.

**Fig. 8. Output pulse control using retrigger pulse ($t_{rtrig}$)**




nA̅ = LOW.

**Fig. 9. Output pulse control using reset input nR̅D̅**




Test data is given in Table 9.
Definitions for test circuit:
$R_T$ = Termination resistance should be equal to output impedance $Z_o$ of the pulse generator;
$C_L$ = Load capacitance including jig and probe capacitance.

**Fig. 10. Test circuit for measuring switching times**

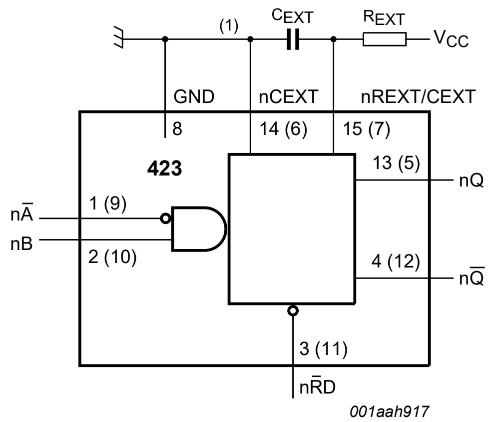
**Table 9. Test data**

| Supply | Input | | Load |
|---|---|---|---|
| $V_{CC}$ | $V_I$ | $t_r$, $t_f$ | $C_L$ |
| 2.0 V to 6.0 V | $V_{CC}$ | 6 ns | 15 pF, 50 pF |

# 11. Application information

## 11.1. Timing component connections

The basic output pulse width is essentially determined by the values of the external timing components $R_{EXT}$ and $C_{EXT}$.




(1) For minimum noise generation it is recommended that the nCEXT pins (6, 14) are connected to ground externally to the GND pin (8).

**Fig. 11. Timing component connections**

### 11.1.1. Minimum monostable pulse width

To set the minimum pulse width, when $C_{EXT}$ < 10 nF, see Fig. 6 and when $C_{EXT}$ > 10 nF, the output pulse width is defined as:

$t_W = 0.45 \times R_{EXT} \times C_{EXT}$ (typ.), where:

$t_W$ = pulse width in μs;

$R_{EXT}$ = external resistor in kΩ;

$C_{EXT}$ = external capacitor in nF.

## 11.2. Power-up considerations

When the monostable is powered-up it may produce an output pulse, with a pulse width defined by the values of $R_{EXT}$ and $C_{EXT}$, this output pulse can be eliminated using the circuit shown in Fig. 12.

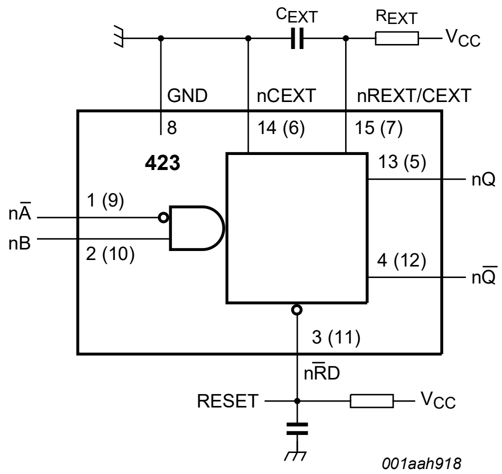



Fig. 12. Power-up output pulse elimination circuit

## 11.3. Power-down considerations

A large capacitor $C_{EXT}$ may cause problems when powering-down the monostable due to the capacitor's stored energy. When a system containing this device is powered-down or a rapid decrease of $V_{CC}$ to zero occurs, the monostable may sustain damage, due to the capacitor discharging through the input protection diodes. To avoid this possibility, use a damping diode $D_{EXT}$ preferably a germanium or Schottky type diode able to withstand large current surges and connect as shown in Fig. 13.

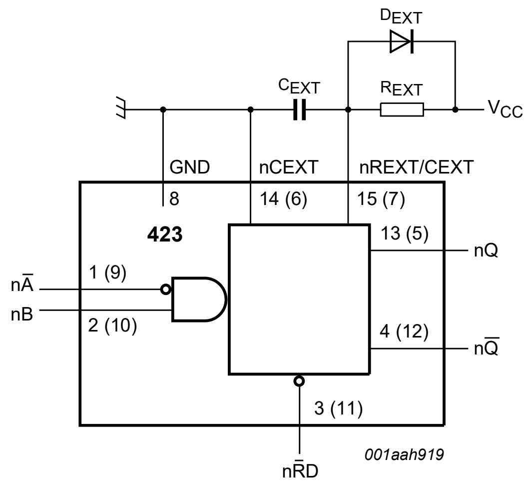
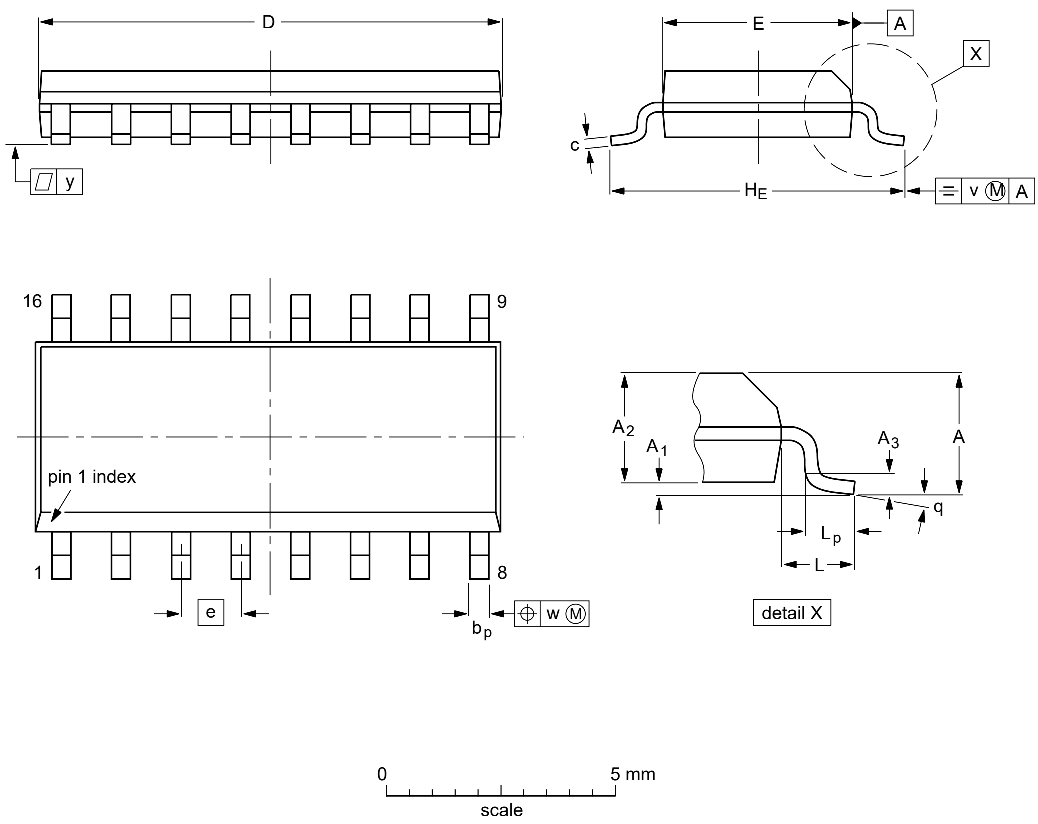



Fig. 13. Power-down protection circuit

## 12. Package outline

**SO16: plastic small outline package; 16 leads; body width 3.9 mm** **SOT109-1**




Dimensions (inch dimensions are derived from the original mm dimensions)

| Unit | | A | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | $D^{(1)}$ | $E^{(1)}$ | e | $H_E$ | L | $L_p$ | v | w | y | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.75 | 0.25 | | | 0.51 | 0.25 | 10.0 | 4.0 | | 6.2 | | 1.27 | | | | 8° |
| | nom | | | | 0.25 | | | | | 1.27 | | 1.05 | | 0.2 | 0.25 | 0.1 | |
| | min | | 0.10 | 1.25 | | 0.31 | 0.10 | 9.8 | 3.8 | | 5.8 | | 0.4 | | | | 0° |
| inches | max | 0.069 | 0.010 | | | 0.020 | 0.010 | 0.394 | 0.16 | | 0.244 | | 0.05 | | | | 8° |
| | nom | | | | 0.01 | | | | | 0.05 | | 0.041 | | 0.008 | 0.01 | 0.004 | |
| | min | | 0.004 | 0.049 | | 0.012 | 0.004 | 0.386 | 0.15 | | 0.228 | | 0.016 | | | | 0° |

Note
1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

*sot109-1_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT109-1 | | MS-012 | | | | ~~03-02-19~~<br>23-10-27 |

**Fig. 14. Package outline SOT109-1 (SO16)**

## 13. Abbreviations

**Table 10. Abbreviations**

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

## 14. Revision history

**Table 11. Revision history**

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| 74HC423_Q100 v.1.1 | 20240313 | Product data sheet | - | - |
| Modifications: | • v.1.1: Section 6: Corrected typo. | | | |

## 15. 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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