D-C Triggered from Active-High or Active-Low Gated Logic Inputs

Retriggerable for Very Long Output Pulses, Up to 100% Duty Cycle

Overriding Clear Terminates Output Pulse

'122 and 'LS122 Have Internal Timing Resistors

description

These d-c triggered multivibrators feature output pulse-duration control by three methods. The basic pulse time is programmed by selection of external resistance and capacitance values (see typical application data). The '122 and 'LS122 have internal timing resistors that allow the circuits to be used with only an external capacitor, if so desired. Once triggered, the basic pulse duration may be extended by retriggering the gated low-level-active (A) or high-level-active (B) inputs, or be reduced by use of the overriding clear. Figure 1 illustrates pulse control by retriggering and early clear.

The 'LS122 and 'LS123 are provided enough Schmitt hysteresis to ensure jitter-free triggering from the B input with transition rates as slow as 0.1 millivolt per nanosecond.

The R_{int} in nominall 10 kΩ for '122 and 'LS122.

NOTES: 1. An external timing capacitor may be connected between C_{ext} and R_{ext/C_{ext}} (positive).
2. To use the internal timing resistor of '122 or 'LS122, connect R_{int} to VCC.
3. For improved pulse duration accuracy and repeatability, connect an external resistor between R_{ext/C_{ext}} and VCC with R_{int} open-circuited.
4. To obtain variable pulse durations, connect an external variable resistance between R_{int} or R_{ext/C_{ext}} and VCC.
**SN54122, SN54123, SN54130, SN54LS122, SN54LS123, SN74122, SN74123, SN74130, SN74LS122, SN74LS123**

**RETRIGGERABLE MONOSTABLE MULTIVIBRATORS**


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**DESCRIPTION (CONTINUED)**

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**NOTE:** Retrigger pulses starting before 0.22 $C_{ext}$ (in picofrads) nanoseconds after the initial trigger pulse will be ignored and the output duration will remain unchanged.

**FIGURE 1—TYPICAL INPUT/OUTPUT PULSES**

---

**FUNCTION TABLE**

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEAR</td>
<td>A1 A2 B1 B2 Q Q</td>
</tr>
<tr>
<td>L</td>
<td>X X X X L H</td>
</tr>
<tr>
<td>X</td>
<td>H H X X L H</td>
</tr>
<tr>
<td>X</td>
<td>X X L X L H</td>
</tr>
<tr>
<td>X</td>
<td>X X X X L H</td>
</tr>
<tr>
<td>H</td>
<td>L X H H L H</td>
</tr>
<tr>
<td>H</td>
<td>L X H H L H</td>
</tr>
<tr>
<td>H</td>
<td>X L H H L H</td>
</tr>
<tr>
<td>H</td>
<td>X L H H L H</td>
</tr>
<tr>
<td>H</td>
<td>L H H H L H</td>
</tr>
<tr>
<td>H</td>
<td>L H H H L H</td>
</tr>
<tr>
<td>↑</td>
<td>L X H H L H</td>
</tr>
<tr>
<td>↑</td>
<td>X L H H L H</td>
</tr>
</tbody>
</table>

See explanation of function tables on page

† These lines of the functional tables assume that the indicated steady-state conditions at the A and B inputs have been set up long enough to complete any pulse started before the set up.
SN54122, SN54123, SN54130, SN54LS122, SN54LS123, SN74122, SN74123, SN74130, SN74LS122, SN74LS123
RETRIGGERABLE MONOSTABLE MULTIVIBRATORS

logic diagram (positive logic)

\[ \text{'122, 'LS122} \]

\[ \text{A1 (1)} \]
\[ \text{A2 (2)} \]
\[ \text{B1 (3)} \]
\[ \text{B2 (4)} \]
\[ \text{CLR (6)} \]

\[ \text{R_{int}/C_{ext}} \]
\[ \text{R_{int}} \]
\[ \text{C_{ext}} \]
\[ \text{(9)} \]
\[ \text{(11)} \]
\[ \text{(8)} \]
\[ \text{(6)} \]

\[ \text{Q} \]
\[ \text{Q} \]

\[ R_{int} \text{ is nominally 10 kΩ for '122 and 'LS122} \]

logic diagram (positive logic) (each multivibrator)

\[ \text{'123, '130, 'LS123} \]

\[ \text{A} \]
\[ \text{B} \]
\[ \text{CLR} \]

\[ \text{R_{ext}/C_{ext}} \]
\[ \text{C_{ext}} \]
\[ \text{Q} \]
\[ \text{Q} \]

\[ \text{Pin numbers shown are for D, J, N. and W packages.} \]

logic symbol†

\[ \text{'122, 'LS122} \]

\[ \text{A1 (1)} \]
\[ \text{A2 (2)} \]
\[ \text{B1 (3)} \]
\[ \text{B2 (4)} \]
\[ \text{CLR (5)} \]

\[ \text{R_{int}} \]
\[ \text{C_{ext}} \]
\[ \text{R_{ext}/C_{ext}} \]

\[ \text{(8)} \]
\[ \text{(6)} \]

\[ \text{Q} \]

logic symbol†

\[ \text{'123, '130, 'LS123} \]

\[ \text{1A (1)} \]
\[ \text{1B (2)} \]
\[ \text{1CLR (3)} \]
\[ \text{1C_{ext} (14)} \]
\[ \text{1R_{ext}/C_{ext} (15)} \]
\[ \text{2A (9)} \]
\[ \text{2B (10)} \]
\[ \text{2CLR (11)} \]
\[ \text{2C_{ext} (6)} \]
\[ \text{2R_{ext}/C_{ext} (7)} \]

\[ \text{1Q} \]
\[ \text{1Q} \]
\[ \text{Q} \]
\[ \text{Q} \]

\[ \text{CX} \]

\[ \text{RX/CX} \]

†These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.
schematics of inputs and outputs

'122, '123, '130 CIRCUITS

EQUIVALENT OF EACH INPUT

TYPICAL OF ALL OUTPUTS

Clear inputs: \( R_{eq} = 2 \, \text{k}\Omega \) NOM
Other inputs: \( R_{eq} = 4 \, \text{k}\Omega \) NOM

'LS122, 'LS123 CIRCUITS

EQUIVALENT OF EACH INPUT

TYPICAL OF ALL OUTPUTS

\( 17 \, \text{k}\Omega \) NOM

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, \( V_{CC} \) (see Note 1) ......................... 7 V
Input voltage: '122, '123, '130 ......................... 5.5 V
'LS122, 'LS123 ......................... 7 V
Operating free-air temperature range: SN54' ......................... \(-55^\circ C \) to 125°C
SN74' ......................... 0°C to 70°C
Storage temperature range ......................... \(-65^\circ C \) to 150°C

NOTE 1: Voltage values are with respect to network ground terminal.
## Recommended Operating Conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SN54’</th>
<th>SN74’</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage, $V_{CC}$</td>
<td>MIN: 4.5</td>
<td>NOM: 5</td>
<td>MAX: 5.5</td>
</tr>
<tr>
<td>High-level output current, $I_{OH}$</td>
<td>MIN: -800</td>
<td>NOM: -800</td>
<td>MAX: 5.25</td>
</tr>
<tr>
<td>Low-level output current, $I_{OL}$</td>
<td>16 mA</td>
<td>16 mA</td>
<td></td>
</tr>
<tr>
<td>Pulse duration, $t_w$</td>
<td>40 ns</td>
<td>40 ns</td>
<td></td>
</tr>
<tr>
<td>External timing resistance, $R_{EXT}$</td>
<td>5 kΩ</td>
<td>5 kΩ</td>
<td></td>
</tr>
<tr>
<td>External capacitance, $C_{EXT}$</td>
<td>No restriction</td>
<td>No restriction</td>
<td></td>
</tr>
<tr>
<td>Wiring capacitance at $R_{EXT}/C_{EXT}$ terminal</td>
<td>50 pF</td>
<td>50 pF</td>
<td></td>
</tr>
<tr>
<td>Operating free-air temperature, $T_A$</td>
<td>-55 °C</td>
<td>125 °C</td>
<td>0 °C</td>
</tr>
</tbody>
</table>

## Electrical Characteristics Over Recommended Free-Air Operating Temperature Range (Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions†</th>
<th>‘122</th>
<th>‘123, ‘130</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{IH}$ High-level input voltage</td>
<td>$V_{CC} = MIN$, $I_I = -12$ mA</td>
<td>0.8</td>
<td>0.8</td>
<td>V</td>
</tr>
<tr>
<td>$V_{IL}$ Low-level input voltage</td>
<td></td>
<td>2 V</td>
<td>2 V</td>
<td></td>
</tr>
<tr>
<td>$V_{OH}$ High-level output voltage</td>
<td>$V_{CC} = MIN$, $I_{OH} = -800$ μA, See Note 5</td>
<td>2.4</td>
<td>3.4</td>
<td>2.4</td>
</tr>
<tr>
<td>$V_{OL}$ Low-level output voltage</td>
<td>$V_{CC} = MIN$, $I_{OL} = 16$ mA, See Note 5</td>
<td>0.2</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>$I_I$ Input current at maximum input voltage</td>
<td>$V_{CC} = MAX$, $V_I = 5.5$ V</td>
<td>1 mA</td>
<td>1 mA</td>
<td></td>
</tr>
<tr>
<td>$I_{IH}$ High-level input current</td>
<td>Data inputs</td>
<td>40 μA</td>
<td>40 μA</td>
<td></td>
</tr>
<tr>
<td>$I_{IL}$ Low-level input current</td>
<td>Clear input</td>
<td>80 μA</td>
<td>80 μA</td>
<td></td>
</tr>
<tr>
<td>$I_{OS}$ Short-circuit output current‡</td>
<td>$V_{CC} = MAX$, See Note 5</td>
<td>-1.6 mA</td>
<td>-1.6 mA</td>
<td></td>
</tr>
<tr>
<td>$I_{CC}$ Supply current (quiescent or triggered)</td>
<td>$V_{CC} = MAX$, See Notes 6 and 7</td>
<td>29 mA</td>
<td>46 mA</td>
<td>36 mA</td>
</tr>
</tbody>
</table>

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ Not more than one output should be shorted at a time.

### Notes:
5. Ground $C_{EXT}$ to measure $V_{OH}$ at Q, $V_{OL}$ at $\overline{Q}$, or $I_{OS}$ at Q. $C_{EXT}$ is open to measure $V_{OH}$ at $\overline{Q}$, $V_{OL}$ at Q, or $I_{OS}$ at $\overline{Q}$.
6. Quiescent $I_{CC}$ is measured (after clearing) with 4.5 V applied to all clear and A inputs, B inputs grounded, all outputs open and $R_{EXT} = 25$ kΩ, $R_{INT}$ of ‘122 is open.
7. $I_{CC}$ is measured in the triggered state with 2.4 V applied to all clear and B inputs, A inputs grounded, all outputs open, $C_{EXT} = 0.02$ μF, and $R_{EXT} = 25$ kΩ. $R_{INT}$ of ‘122 is open.

## Switching Characteristics

$V_{CC} = 5$ V, $T_A = 25^\circ$ C, see note 8

<table>
<thead>
<tr>
<th>Parameter†</th>
<th>From (Input)</th>
<th>To (Output)</th>
<th>Test Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{PLH}$</td>
<td>A</td>
<td>Q</td>
<td>$R_{EXT} = 5$ kΩ, $C_{EXT} = 0$, $C_{L} = 15$ pF, $R_{L} = 400$ Ω</td>
</tr>
<tr>
<td>$t_{PHL}$</td>
<td>B</td>
<td>A</td>
<td>$R_{EXT} = 5$ kΩ, $C_{EXT} = 0$, $C_{L} = 15$ pF, $R_{L} = 400$ Ω</td>
</tr>
<tr>
<td>$t_{PLH}$</td>
<td>Clear</td>
<td>Q</td>
<td>$R_{EXT} = 5$ kΩ, $C_{EXT} = 0$, $C_{L} = 15$ pF, $R_{L} = 400$ Ω</td>
</tr>
<tr>
<td>$t_{WQ}$ (min)</td>
<td>A or B</td>
<td>Q</td>
<td>$R_{EXT} = 10$ kΩ, $C_{EXT} = 10000$ pF, $C_{L} = 15$ pF, $R_{L} = 400$ Ω</td>
</tr>
</tbody>
</table>

† $t_{PLH}$ = propagation delay time, low-to-high-level output
† $t_{PHL}$ = propagation delay time, high-to-low-level output
† $t_{WQ}$ = duration of pulse at output Q.

Note B: Load circuits and voltage waveforms are shown in Section 1.
### Recommended Operating Conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SN54LS'</th>
<th>SN74LS'</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage, $V_{CC}$</td>
<td>MIN</td>
<td>NOM</td>
<td>MAX</td>
</tr>
<tr>
<td>High-level output current, $I_{OH}$</td>
<td>4.5</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>Low-level output current, $I_{OL}$</td>
<td>-400</td>
<td>-400</td>
<td>μA</td>
</tr>
<tr>
<td>Pulse duration, $t_{PW}$</td>
<td>40</td>
<td>40</td>
<td>ns</td>
</tr>
<tr>
<td>External timing resistance, $R_{EXT}$</td>
<td>5</td>
<td>180</td>
<td>5</td>
</tr>
<tr>
<td>External capacitance, $C_{EXT}$</td>
<td>No restriction</td>
<td>No restriction</td>
<td>pF</td>
</tr>
<tr>
<td>Wiring capacitance at $R_{EXT}/C_{EXT}$ terminal</td>
<td>50</td>
<td>50</td>
<td>pF</td>
</tr>
<tr>
<td>Operating free-air temperature, $T_A$</td>
<td>-55</td>
<td>125</td>
<td>0</td>
</tr>
</tbody>
</table>

### Electrical Characteristics Over Recommended Operating Free-Air Temperature Range (Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions†</th>
<th>SN54LS'</th>
<th>SN74LS'</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{IH}$ High-level input voltage</td>
<td></td>
<td>MIN</td>
<td>NOM</td>
<td>MAX</td>
</tr>
<tr>
<td>$V_{IL}$ Low-level input voltage</td>
<td></td>
<td>0.7</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>$V_{I}$ Input clamp voltage</td>
<td>$V_{CC} = \text{MIN}$, $I_{I} = -18$ mA</td>
<td>-1.5</td>
<td>-1.5</td>
<td>V</td>
</tr>
<tr>
<td>$V_{OL}$ Low-level output voltage</td>
<td></td>
<td>$V_{CC} = \text{MIN}$, $V_{IH} = 2$ V, $V_{IL} = V_{I}$</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>$I_{I}$ Input current at maximum input voltage</td>
<td>$V_{CC} = \text{MAX}$, $V_{I} = 7$ V</td>
<td>0.1</td>
<td>0.1</td>
<td>mA</td>
</tr>
<tr>
<td>$I_{IH}$ High-level input current</td>
<td>$V_{CC} = \text{MAX}$, $V_{I} = 2.7$ V</td>
<td>20</td>
<td>20</td>
<td>μA</td>
</tr>
<tr>
<td>$I_{OL}$ Low-level output current</td>
<td>$V_{CC} = \text{MAX}$, $V_{OL} = 0.4$ V</td>
<td>-0.4</td>
<td>-0.4</td>
<td>mA</td>
</tr>
<tr>
<td>$I_{OSP}$ Short-circuit output current‡</td>
<td>$V_{CC} = \text{MAX}$</td>
<td>-20</td>
<td>-20</td>
<td>-100</td>
</tr>
<tr>
<td>$I_{CC}$ Supply current (quiescent or triggered)</td>
<td>$V_{CC} = \text{MAX}$, See Note 13</td>
<td>$LS122$</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>$I_{CC}$ Supply current (quiescent or triggered)</td>
<td>$V_{CC} = \text{MAX}$, See Note 13</td>
<td>$LS123$</td>
<td>12</td>
<td>20</td>
</tr>
</tbody>
</table>

†For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡All typical values are at $V_{CC} = 5$ V, $T_A = 25^\circ$C.
§Not more than one output should be shorted at a time and duration of the short-circuit should not exceed one second.

**NOTES:**
12. To measure $V_{OH}$ at $Q$, $V_{OL}$ at $Q$, or $I_{OS}$ at $Q$, ground $R_{EXT}/C_{EXT}$ supply $2$ V to $B$ and clear, and pulse $A$ from $2$ V to $0$ V.
13. With all outputs open and $4.5$ V applied to all data and clear inputs, $I_{CC}$ is measured after a momentary ground, then $4.5$ V, is applied to $A$ or $B$ inputs.

### Switching Characteristics, $V_{CC} = 5$ V, $T_A = 25^\circ$C (See Note 8)

<table>
<thead>
<tr>
<th>Parameter‡</th>
<th>FROM (INPUT)</th>
<th>TO (OUTPUT)</th>
<th>Test Conditions</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{PLH}$</td>
<td>A</td>
<td>B</td>
<td>$Q$</td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>$t_{PHL}$</td>
<td>A</td>
<td>B</td>
<td>$Q$</td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>$t_{PLH}$</td>
<td>Clear</td>
<td>$Q$</td>
<td>$C_{EXT} = 0$, $C_{L} = 15$ pF, $R_{L} = 2$ kΩ</td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>$t_{Q}$</td>
<td>A or B</td>
<td>$Q$</td>
<td>$C_{EXT} = 1000$ pF, $C_{L} = 15$ pF, $R_{L} = 2$ kΩ</td>
<td></td>
<td></td>
<td></td>
<td>μs</td>
</tr>
</tbody>
</table>

‡$t_{PLH}$ = propagation delay time, low-to-high-level output
‡$t_{PHL}$ = propagation delay time, high-to-low-level output
‡$t_{Q}$ = duration of pulse at output $Q$.

**NOTE 8:** Load circuits and voltage waveforms are shown in Section 1.
TYPICAL APPLICATION DATA FOR '122, '123, '130

For pulse durations when \( C_{\text{e}} \leq 1000 \, \text{pF} \), see Figure 4.

The output pulse duration is primarily a function of the external capacitor and resistor. For \( C_{\text{e}} > 1000 \, \text{pF} \), the output pulse duration \( (t_W) \) is defined as:

\[
t_W = K \cdot R_T \cdot C_{\text{e}} \left( 1 + \frac{0.7}{R_T} \right)
\]

where

- \( K \) is 0.32 for '122, 0.28 for '123 and '130
- \( R_T \) is in kΩ (internal or external timing resistance.)
- \( C_{\text{e}} \) is in pF
- \( t_W \) is in ns

To prevent reverse voltage across \( C_{\text{e}} \), it is recommended that the method shown in Figure 2 be employed when using electrolytic capacitors and in applications utilizing the clear function. In all applications using the diode, the pulse duration is:

\[
t_W = K_D \cdot R_T \cdot C_{\text{e}} \left( 1 + \frac{0.7}{R_T} \right)
\]

\( K_D \) is 0.28 for '122, 0.25 for '123 and '130

Applications requiring more precise pulse durations (up to 28 seconds) and not requiring the clear feature can best be satisfied with the '121.
TYPICAL APPLICATION DATA FOR 'LS122, 'LS123

The basic output pulse duration is essentially determined by the values of external capacitance and timing resistance. For pulse durations when $C_{\text{ext}} \leq 1000 \, \text{pF}$, use Figure 6, or use Figure 7 where the pulse duration may be defined as:

$$t_w = K \cdot R_T \cdot C_{\text{ext}}$$

When $C_{\text{ext}} \geq 1 \, \mu\text{F}$, the output pulse width is defined as:

$$t_w = 0.33 \cdot R_T \cdot C_{\text{ext}}$$

For the above two equations, as applicable:

- $K$ is multiplier factor, see Figure 7
- $R_T$ is in kΩ (internal or external timing resistance)
- $C_{\text{ext}}$ is in pF
- $t_w$ is in ns

For maximum noise immunity, system ground should be applied to the $C_{\text{ext}}$ node, even though the $C_{\text{ext}}$ node is already tied to the ground lead internally. Due to the timing scheme used by the 'LS122 and 'LS123, a switching diode is not required to prevent reverse biasing when using electrolytic capacitors.

'LS122, 'LS123 TYPICAL OUTPUT PULSE DURATION VS EXTERNAL TIMING CAPACITANCE

The value $\uparrow$ of resistance exceeds the maximum recommended for use over the full temperature range of the SN54LS circuits.

FIGURE 6
TYPICAL APPLICATION DATA FOR 'LS122, 'LS123†

MULTIPLIER FACTOR

\[ K - \text{Multiplier Factor} \]

\[ \text{Ext} - \text{External Capacitor Value} - \text{uF} \]

\[ 0.25 \quad 0.30 \quad 0.35 \quad 0.40 \quad 0.45 \quad 0.50 \quad 0.55 \]

\[ (K \text{ IS INDEPENDENT OF } R) \]

\[ 0.0001 \quad 0.001 \quad 0.01 \quad 0.1 \]

\[ \text{FIGURE 7} \]

DISTRIBUTION OF UNITS

\[ V_{CC} = 5 \text{ V} \]

\[ T_{A} = 25^\circ \text{C} \]

\[ \text{Relative Frequency of Occurrence} \]

\[ \text{MEDIAN} - 20\% - \text{('LS122)} \]

\[ + 20\% - \text{('LS122)} \]

\[ - 8\% - \text{('LS122/ 'LS123)} \]

\[ + 8\% - \text{('LS122/ 'LS123)} \]

\[ \text{t}_{w(\text{out})} = \text{Output Pulse Duration} \]

\[ \text{99\% OF UNITS} \]

\[ \text{FIGURE 8} \]

VARIATION IN OUTPUT PULSE DURATION

\[ \text{vs} \]

\[ \text{SUPPLY VOLTAGE} \]

\[ C_{\text{ext}} = 60 \text{ pF} \]

\[ R_{\text{ext}} = 10 \text{ K ohms} \]

\[ T_{A} = 25^\circ \text{C} \]

\[ \Delta t_{w(\text{out})} = 370 \text{ ns} \]

\[ \text{at } V_{CC} = 5 \text{ V} \]

\[ \text{FIGURE 9} \]

VARIATION IN OUTPUT PULSE DURATION

\[ \text{vs} \]

\[ \text{FREE-AIR TEMPERATURE} \]

\[ V_{CC} = 5 \text{ V} \]

\[ C_{\text{ext}} = 60 \text{ pF} \]

\[ R_{T} = 10 \text{ K ohms} \]

\[ \text{t}_{w(\text{out})} \approx 370 \text{ ns} \]

\[ \text{at } T_{A} = 25^\circ \text{C} \]

\[ \text{FIGURE 10} \]

NOTE 14: For the 'LS122, the internal timing resistor, R_{\text{int}}, was used. For the 'LS122/123, an external timing resistor was used for R_{T}.

†Data for temperatures below 0°C and above 70°C and for supply voltages below 4.75 V and above 5.25 V are applicable for SN54LS122 and SN54LS123 only.
IMPORTANT NOTICE

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