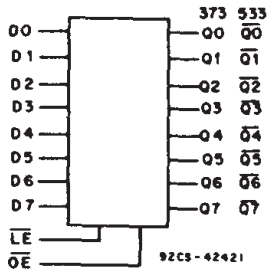


# CD54/74AC373, CD54/74AC533 CD54/74ACT373, CD54/74ACT533



Data sheet acquired from Harris Semiconductor  
SCHS289



## Octal Transparent Latch, 3-State

CD54/74AC/ACT373 - Non-Inverting  
CD54/74AC/ACT533 - Inverting

### Type Features:

- Buffered inputs
- Typical propagation delay:  
4.3 ns @  $V_{CC} = 5\text{ V}$ ,  $T_A = 25^\circ\text{C}$ ,  $C_L = 50\text{ pF}$

### FUNCTIONAL DIAGRAM

The RCA-CD54/74AC373 and CD54/74AC533 and the CD54/74ACT373 and CD54/74ACT533 octal transparent 3-state latches use the RCA ADVANCED CMOS technology. The outputs are transparent to the inputs when the Latch Enable ( $\overline{LE}$ ) is HIGH. When the Latch Enable ( $\overline{LE}$ ) goes LOW, the data is latched. The Output Enable ( $\overline{OE}$ ) controls the 3-state outputs. When the Output Enable ( $\overline{OE}$ ) is HIGH, the outputs are in the high-impedance state. The latch operation is independent of the state of the Output Enable.

The CD74AC/ACT373 and CD74AC/ACT533 are supplied in 20-lead dual-in-line plastic packages (E suffix) and in 20-lead dual-in-line small-outline plastic packages (M suffix). Both package types are operable over the following temperature ranges: Commercial (0 to 70°C); Industrial (-40 to +85°C); and Extended Industrial/Military (-55 to +125°C).

The CD54AC/ACT373 and CD54AC/ACT533, available in chip form (H suffix), are operable over the -55 to +125°C temperature range.

### Family Features:

- Exceeds 2-kV ESD Protection - MIL-STD-883, Method 3015
- SCR-Latchup-resistant CMOS process and circuit design
- Speed of bipolar FAST\*/AS/S with significantly reduced power consumption
- Balanced propagation delays
- AC types feature 1.5-V to 5.5-V operation and balanced noise immunity at 30% of the supply
- $\pm 24\text{-mA}$  output drive current
  - Fanout to 15 FAST\* ICs
  - Drives 50-ohm transmission lines

\*FAST is a Registered Trademark of Fairchild Semiconductor Corp.

### TRUTH TABLE

| Output Enable | Latch Enable | Data | AC/ACT373 Output | AC/ACT533 Output |
|---------------|--------------|------|------------------|------------------|
| L             | H            | H    | H                | L                |
| L             | H            | L    | L                | H                |
| L             | L            | l    | L                | H                |
| L             | L            | h    | H                | L                |
| H             | X            | X    | Z                | Z                |

### Note:

L = Low voltage level  
H = High voltage level

l = Low voltage level one set-up time prior to the high to low latch enable transition

h = High voltage level one set-up time prior to the high to low latch enable transition.

X = Don't Care  
Z = High Impedance State

Technical Data

# CD54/74AC373, CD54/74AC533 CD54/74ACT373, CD54/74ACT533

**MAXIMUM RATINGS, Absolute-Maximum Values:**

|  |   |
|--|---|
| DC SUPPLY-VOLTAGE ( $V_{CC}$ )   | -0.5 to 6 V   |
| DC INPUT DIODE CURRENT, $I_{IK}$ (for $V_I < -0.5$ V or $V_I > V_{CC} + 0.5$ V)                          | $\pm 20$ mA   |
| DC OUTPUT DIODE CURRENT, $I_{OK}$ (for $V_O < -0.5$ V or $V_O > V_{CC} + 0.5$ V)                         | $\pm 50$ mA   |
| DC OUTPUT SOURCE OR SINK CURRENT per Output Pin, $I_O$ (for $V_O > -0.5$ V or $V_O < V_{CC} + 0.5$ V)    | $\pm 50$ mA   |
| DC $V_{CC}$ or GROUND CURRENT ( $I_{CC}$ or $I_{GND}$ )  | $\pm 100$ mA*                                       |
| POWER DISSIPATION PER PACKAGE ( $P_D$ ):   |   |
| For $T_A = -55$ to $+100^\circ\text{C}$ (PACKAGE TYPE E)   | 500 mW  |
| For $T_A = +100$ to $+125^\circ\text{C}$ (PACKAGE TYPE E)  | Derate Linearly at 8 mW/ $^\circ\text{C}$ to 300 mW |
| For $T_A = -55$ to $+70^\circ\text{C}$ (PACKAGE TYPE M)  | 400 mW  |
| For $T_A = +70$ to $+125^\circ\text{C}$ (PACKAGE TYPE M)   | Derate Linearly at 6 mW/ $^\circ\text{C}$ to 70 mW  |
| OPERATING-TEMPERATURE RANGE ( $T_A$ )  | $-55$ to $+125^\circ\text{C}$                       |
| STORAGE TEMPERATURE ( $T_{STG}$ )  | $-65$ to $+150^\circ\text{C}$                       |
| LEAD TEMPERATURE (DURING SOLDERING):   |   |
| At distance $1/16 \pm 1/32$ in. ( $1.59 \pm 0.79$ mm) from case for 10 s maximum                         | $+265^\circ\text{C}$                                |
| Unit inserted into PC board min. thickness $1/16$ in. ( $1.59$ mm) with solder contacting lead tips only | $+300^\circ\text{C}$                                |

\*For up to 4 outputs per device; add  $\pm 25$  mA for each additional output.

**RECOMMENDED OPERATING CONDITIONS:**

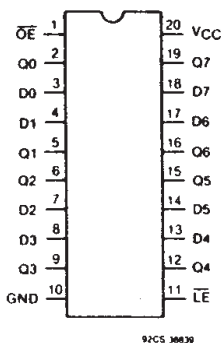
For maximum reliability, normal operating conditions should be selected so that operation is always within the following ranges:

| CHARACTERISTIC   | LIMITS      |                | UNITS                |
|--|-------------|----------------|----------------------|
|  | MIN.        | MAX.           |                      |
| Supply-Voltage Range, $V_{CC}$ *:<br>(For $T_A =$ Full Package-Temperature Range)<br>AC Types<br>ACT Types                         | 1.5<br>4.5  | 5.5<br>5.5     | V                    |
| DC Input or Output Voltage, $V_I, V_O$   | 0           | $V_{CC}$       | V                    |
| Operating Temperature, $T_A$   | -55         | +125           | $^\circ\text{C}$     |
| Input Rise and Fall Slew Rate, $dt/dv$<br>at 1.5 V to 3 V(AC Types)<br>at 3.6 V to 5.5 V(AC Types)<br>at 4.5 V to 5.5 V(ACT Types) | 0<br>0<br>0 | 50<br>20<br>10 | ns/V<br>ns/V<br>ns/V |

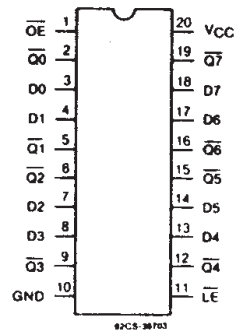
\*Unless otherwise specified, all voltages are referenced to ground.

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**TERMINAL ASSIGNMENT DIAGRAMS**



CD54/74AC373, CD54/74ACT373



CD54/74AC533, CD54/74ACT533

Technical Data

**CD54/74AC373, CD54/74AC533**  
**CD54/74ACT373, CD54/74ACT533**

STATIC ELECTRICAL CHARACTERISTICS: AC Series

| CHARACTERISTICS                              | TEST CONDITIONS                          |       | V <sub>CC</sub><br>(V) | AMBIENT TEMPERATURE (T <sub>A</sub> ) - °C |      |            |      |             |      | UNITS |
|--|--|-------|------------------------|--|------|------------|------|-------------|------|-------|
|  |  |       |                        | +25  |      | -40 to +85 |      | -55 to +125 |      |       |
|  |  |       |                        | MIN.                                       | MAX. | MIN.       | MAX. | MIN.        | MAX. |       |
| High-Level Input Voltage<br>V <sub>IH</sub>  |  |       | 1.5                    | 1.2  | —    | 1.2        | —    | 1.2         | —    | V     |
|  |  |       | 3                      | 2.1  | —    | 2.1        | —    | 2.1         | —    |       |
|  |  |       | 5.5                    | 3.85                                       | —    | 3.85       | —    | 3.85        | —    |       |
| Low-Level Input Voltage<br>V <sub>IL</sub>   |  |       | 1.5                    | —  | 0.3  | —          | 0.3  | —           | 0.3  | V     |
|  |  |       | 3                      | —  | 0.9  | —          | 0.9  | —           | 0.9  |       |
|  |  |       | 5.5                    | —  | 1.65 | —          | 1.65 | —           | 1.65 |       |
| High-Level Output Voltage<br>V <sub>OH</sub> | V <sub>IH</sub><br>or<br>V <sub>IL</sub> | -0.05 | 1.5                    | 1.4  | —    | 1.4        | —    | 1.4         | —    | V     |
|  |  |       | 3                      | 2.9  | —    | 2.9        | —    | 2.9         | —    |       |
|  |  |       | 4.5                    | 4.4  | —    | 4.4        | —    | 4.4         | —    |       |
|  |  |       | 3                      | 2.58                                       | —    | 2.48       | —    | 2.4         | —    |       |
|  |  |       | 4.5                    | 3.94                                       | —    | 3.8        | —    | 3.7         | —    |       |
|  |  |       | 5.5                    | —  | —    | 3.85       | —    | —           | —    |       |
| Low-Level Output Voltage<br>V <sub>OL</sub>  | V <sub>IH</sub><br>or<br>V <sub>IL</sub> | 0.05  | 1.5                    | —  | 0.1  | —          | 0.1  | —           | 0.1  | V     |
|  |  |       | 3                      | —  | 0.1  | —          | 0.1  | —           | 0.1  |       |
|  |  |       | 4.5                    | —  | 0.1  | —          | 0.1  | —           | 0.1  |       |
|  |  |       | 3                      | —  | 0.36 | —          | 0.44 | —           | 0.5  |       |
|  |  |       | 4.5                    | —  | 0.36 | —          | 0.44 | —           | 0.5  |       |
|  |  |       | 5.5                    | —  | —    | —          | 1.65 | —           | —    |       |
| Input Leakage Current<br>I <sub>I</sub>      | V <sub>CC</sub><br>or<br>GND             |       | 5.5                    | —  | ±0.1 | —          | ±1   | —           | ±1   | μA    |
|  |  |       |                        |  |      |            |      |             |      |       |
| 3-State Leakage Current<br>I <sub>OZ</sub>   | V <sub>IH</sub><br>or<br>V <sub>IL</sub> |       | 5.5                    | —  | ±0.5 | —          | ±5   | —           | ±10  | μA    |
|  |  |       |                        |  |      |            |      |             |      |       |
| Quiescent Supply Current, MS <sub>I</sub>    | V <sub>CC</sub><br>or<br>GND             | 0     | 5.5                    | —  | 8    | —          | 80   | —           | 160  | μA    |

#Test one output at a time for a 1-second maximum duration. Measurement is made by forcing current and measuring voltage to minimize power dissipation.

\*Test verifies a minimum 50-ohm transmission-line-drive capability at +85°C, 75 ohms at +125°C.

Technical Data

# CD54/74AC373, CD54/74AC533 CD54/74ACT373, CD54/74ACT533

STATIC ELECTRICAL CHARACTERISTICS: ACT Series

| CHARACTERISTICS   | TEST CONDITIONS | $V_{CC}$<br>(V)                               | AMBIENT TEMPERATURE ( $T_A$ ) - °C |      |            |      |             |      | UNITS    |         |   |
|---|-----------------|---|------------------------------------|------|------------|------|-------------|------|----------|---------|---|
|   |                 |   | +25                                |      | -40 to +85 |      | -55 to +125 |      |          |         |   |
|   |                 |   | MIN.                               | MAX. | MIN.       | MAX. | MIN.        | MAX. |          |         |   |
| High-Level Input Voltage  | $V_{IH}$        |   | 4.5 to 5.5                         | 2    | —          | 2    | —           | 2    | —        | V       |   |
| Low-Level Input Voltage   | $V_{IL}$        |   | 4.5 to 5.5                         | —    | 0.8        | —    | 0.8         | —    | 0.8      | V       |   |
| High-Level Output Voltage   | $V_{OH}$        | $V_{IH}$ or $V_{IL}$<br>#, *                  | -0.05                              | 4.5  | 4.4        | —    | 4.4         | —    | 4.4      | —       | V |
|   |                 |   | -24                                | 4.5  | 3.94       | —    | 3.8         | —    | 3.7      | —       |   |
|   |                 |   | -75                                | 5.5  | —          | —    | 3.85        | —    | —        | —       |   |
|   |                 |   | -50                                | 5.5  | —          | —    | —           | —    | 3.85     | —       |   |
| Low-Level Output Voltage  | $V_{OL}$        | $V_{IH}$ or $V_{IL}$<br>#, *                  | 0.05                               | 4.5  | —          | 0.1  | —           | 0.1  | —        | 0.1     | V |
|   |                 |   | 24                                 | 4.5  | —          | 0.36 | —           | 0.44 | —        | 0.5     |   |
|   |                 |   | 75                                 | 5.5  | —          | —    | —           | 1.65 | —        | —       |   |
|   |                 |   | 50                                 | 5.5  | —          | —    | —           | —    | —        | 1.65    |   |
| Input Leakage Current   | $I_i$           | $V_{CC}$ or GND                               | 5.5                                | —    | $\pm 0.1$  | —    | $\pm 1$     | —    | $\pm 1$  | $\mu A$ |   |
| 3-State Leakage Current   | $I_{OZ}$        | $V_{IH}$ or $V_{IL}$<br>$V_O = V_{CC}$ or GND | 5.5                                | —    | $\pm 0.5$  | —    | $\pm 5$     | —    | $\pm 10$ | $\mu A$ |   |
| Quiescent Supply Current, MSI   | $I_{CC}$        | $V_{CC}$ or GND                               | 5.5                                | —    | 8          | —    | 80          | —    | 160      | $\mu A$ |   |
| Additional Quiescent Supply Current per Input Pin<br>TTL Inputs High<br>1 Unit Load | $\Delta I_{CC}$ | $V_{CC}-2.1$                                  | 4.5 to 5.5                         | —    | 2.4        | —    | 2.8         | —    | 3        | mA      |   |

#Test one output at a time for a 1-second maximum duration. Measurement is made by forcing current and measuring voltage to minimize power dissipation.

\*Test verifies a minimum 50-ohm transmission-line-drive capability at +85°C, 75 ohms at +125°C.

ACT INPUT LOADING TABLE

| INPUT           | UNIT LOAD* |        |
|-----------------|------------|--------|
|                 | ACT373     | ACT533 |
| $\overline{OE}$ | 0.87       | 0.87   |
| $\overline{Dn}$ | 0.5        | 0.5    |
| $\overline{LE}$ | 0.8        | 0.8    |

\*Unit load is  $\Delta I_{CC}$  limit specified in Static Characteristics Chart, e.g., 2.4 mA max. @ 25°C.

Technical Data

**CD54/74AC373, CD54/74AC533**  
**CD54/74ACT373, CD54/74ACT533**

PREREQUISITE FOR SWITCHING: AC Series

| CHARACTERISTICS       | SYMBOL          | V <sub>CC</sub><br>(V) | AMBIENT TEMPERATURE (T <sub>A</sub> ) - °C |      |             |      | UNITS |
|-----------------------|-----------------|------------------------|--|------|-------------|------|-------|
|                       |                 |                        | -40 to +85                                 |      | -55 to +125 |      |       |
|                       |                 |                        | MIN.                                       | MAX. | MIN.        | MAX. |       |
| LE Pulse Width        | t <sub>w</sub>  | 1.5                    | 44   | —    | 50          | —    | ns    |
|                       |                 | 3.3*                   | 4.9  | —    | 5.6         | —    |       |
|                       |                 | 5†                     | 3.5  | —    | 4           | —    |       |
| Setup Time Data to LE | t <sub>su</sub> | 1.5                    | 2  | —    | 2           | —    | ns    |
|                       |                 | 3.3                    | 2  | —    | 2           | —    |       |
|                       |                 | 5                      | 2  | —    | 2           | —    |       |
| Hold Time Data to LE  | t <sub>h</sub>  | 1.5                    | 33   | —    | 38          | —    | ns    |
|                       |                 | 3.3                    | 3.7  | —    | 4.2         | —    |       |
|                       |                 | 5                      | 2.6  | —    | 3           | —    |       |

\*3.3 V: min. is @ 3 V  
 †5 V: min. is @ 4.5 V

SWITCHING CHARACTERISTICS: AC Series; t<sub>r</sub>, t<sub>f</sub> = 3 ns, C<sub>L</sub> = 50 pF

| CHARACTERISTICS   | SYMBOL                               | V <sub>CC</sub><br>(V) | AMBIENT TEMPERATURE (T <sub>A</sub> ) - °C |      |             |      | UNITS |
|---|--------------------------------------|------------------------|--|------|-------------|------|-------|
|   |                                      |                        | -40 to +85                                 |      | -55 to +125 |      |       |
|   |                                      |                        | MIN.                                       | MAX. | MIN.        | MAX. |       |
| Propagation Delays:<br>Data to Qn   | t <sub>PLH</sub><br>t <sub>PHL</sub> | 1.5                    | —  | 96   | —           | 106  | ns    |
|   |                                      | 3.3*                   | 3.1  | 10.8 | 3           | 11.9 |       |
|   |                                      | 5†                     | 2.2  | 7.7  | 2.1         | 8.5  |       |
| 373   | t <sub>PLH</sub><br>t <sub>PHL</sub> | 1.5                    | —  | 119  | —           | 131  | ns    |
|   |                                      | 3.3                    | 3.8  | 13.4 | 3.7         | 14.7 |       |
|   |                                      | 5                      | 2.7  | 9.5  | 2.6         | 10.5 |       |
| LE on Qn  | t <sub>PLH</sub><br>t <sub>PHL</sub> | 1.5                    | —  | 136  | —           | 150  | ns    |
|   |                                      | 3.3                    | 4.3  | 15.2 | 4.2         | 16.8 |       |
|   |                                      | 5                      | 3.1  | 10.9 | 3           | 12   |       |
| 533   | t <sub>PLH</sub><br>t <sub>PHL</sub> | 1.5                    | —  | 136  | —           | 150  | ns    |
|   |                                      | 3.3                    | 4.3  | 15.3 | 4.2         | 16.8 |       |
|   |                                      | 5                      | 3.1  | 10.9 | 3           | 12   |       |
| Output Enable Times   | t <sub>PZL</sub><br>t <sub>PZH</sub> | 1.5                    | —  | 119  | —           | 131  | ns    |
|   |                                      | 3.3                    | 4.1  | 14.4 | 4           | 15.8 |       |
|   |                                      | 5                      | 2.7  | 9.5  | 2.6         | 10.5 |       |
| Output Disable Times  | t <sub>PLZ</sub><br>t <sub>PHZ</sub> | 1.5                    | —  | 131  | —           | 144  | ns    |
|   |                                      | 3.3                    | 3.7  | 13.1 | 3.6         | 14.4 |       |
|   |                                      | 5                      | 3  | 10.5 | 2.9         | 11.5 |       |
| Power Dissipation Capacitance   | C <sub>PD</sub> §                    | —                      | 63 Typ.                                    |      | 63 Typ.     |      | pF    |
| Min. (Valley) V <sub>OH</sub><br>During Switching of Other Outputs<br>(Output Under Test Not Switching) | V <sub>OHV</sub><br>See Fig. 1       | 5                      | 4 Typ. @ 25°C                              |      |             |      | V     |
| Max. (Peak) V <sub>OL</sub><br>During Switching of Other Outputs<br>(Output Under Test Not Switching)   | V <sub>OLP</sub><br>See Fig. 1       | 5                      | 1 Typ. @ 25°C                              |      |             |      | V     |
| Input Capacitance   | C <sub>I</sub>                       | —                      | —  | 10   | —           | 10   | pF    |
| 3-State Output Capacitance  | C <sub>O</sub>                       | —                      | —  | 15   | —           | 15   | pF    |

\*3.3 V: min. is @ 3.6 V  
 max. is @ 3 V  
 †5 V: min. is @ 5.5 V  
 max. is @ 4.5 V

§C<sub>PD</sub> is used to determine the dynamic power consumption, per latch.  
 $P_D = V_{CC}^2 f_i (C_{PD} + C_L)$  where  $f_i$  = input frequency  
 $C_L$  = output load capacitance  
 $V_{CC}$  = supply voltage.

Technical Data

# CD54/74AC373, CD54/74AC533 CD54/74ACT373, CD54/74ACT533

**PREREQUISITE FOR SWITCHING: ACT Series**

| CHARACTERISTICS       | SYMBOL          | V <sub>CC</sub><br>(V) | AMBIENT TEMPERATURE (T <sub>A</sub> ) -°C |      |             |      | UNITS |
|-----------------------|-----------------|------------------------|---|------|-------------|------|-------|
|                       |                 |                        | -40 to +85                                |      | -55 to +125 |      |       |
|                       |                 |                        | MIN.                                      | MAX. | MIN.        | MAX. |       |
| LE Pulse Width        | t <sub>w</sub>  | 5†                     | 3.6                                       | —    | 4           | —    | ns    |
| Setup Time Data to LE | t <sub>su</sub> | 5                      | 2   | —    | 2           | —    | ns    |
| Hold Time Data to LE  | t <sub>h</sub>  | 5                      | 2.7                                       | —    | 3           | —    | ns    |

†5 V: min. is @ 4.5 V

**SWITCHING CHARACTERISTICS: ACT Series; t<sub>r</sub>, t<sub>f</sub> = 3 ns, C<sub>L</sub> = 50 pF**

| CHARACTERISTICS   | SYMBOL                               | V <sub>CC</sub><br>(V) | AMBIENT TEMPERATURE (T <sub>A</sub> ) -°C |      |             |      | UNITS |
|---|--------------------------------------|------------------------|---|------|-------------|------|-------|
|   |                                      |                        | -40 to +85                                |      | -55 to +125 |      |       |
|   |                                      |                        | MIN.                                      | MAX. | MIN.        | MAX. |       |
| Propagation Delays:<br>Data to Qn<br>373  | t <sub>PLH</sub>                     | 5†                     | 2.7                                       | 9.5  | 2.6         | 10.4 | ns    |
|   | t <sub>PHL</sub>                     |                        | 3   | 10.4 | 2.9         | 11.4 |       |
| LE to Qn<br>373   | t <sub>PLH</sub>                     | 5                      | 3.1                                       | 11.4 | 3           | 12.5 | ns    |
|   | t <sub>PHL</sub>                     |                        |   |      |             |      |       |
| Output Enable Times   | t <sub>PZL</sub><br>t <sub>PZH</sub> | 5                      | 3.5                                       | 12.3 | 3.4         | 13.5 | ns    |
| Output Disable Times  | t <sub>PLZ</sub><br>t <sub>PHZ</sub> | 5                      | 3.2                                       | 11.4 | 3.1         | 12.5 | ns    |
| Power Dissipation Capacitance   | C <sub>PD</sub> §                    | —                      | 63 Typ.                                   |      | 63 Typ.     |      | pF    |
| Min. (Valley) V <sub>OH</sub><br>During Switching of Other Outputs<br>(Output Under Test Not Switching) | V <sub>OHV</sub><br>See Fig. 1       | 5                      | 4 Typ. @ 25°C                             |      |             |      | V     |
| Max. (Peak) V <sub>OL</sub><br>During Switching of Other Outputs<br>(Output Under Test Not Switching)   | V <sub>OLP</sub><br>See Fig. 1       | 5                      | 1 Typ. @ 25°C                             |      |             |      | V     |
| Input Capacitance   | C <sub>I</sub>                       | —                      | —   | 10   | —           | 10   | pF    |
| 3-State Output Capacitance  | C <sub>O</sub>                       | —                      | —   | 15   | —           | 15   | pF    |

†5 V: min. is @ 5.5 V  
max. is @ 4.5 V

§C<sub>PD</sub> is used to determine the dynamic power consumption, per latch.

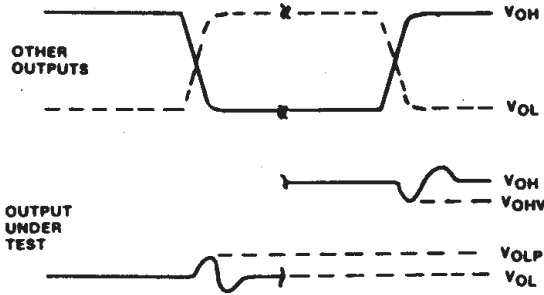
$$P_D = V_{CC}^2 f_i (C_{PD} + C_L) + V_{CC} \Delta I_{CC} \text{ where } f_i = \text{input frequency}$$

C<sub>L</sub> = output load capacitance  
V<sub>CC</sub> = supply voltage.

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# CD54/74AC373, CD54/74AC533 CD54/74ACT373, CD54/74ACT533

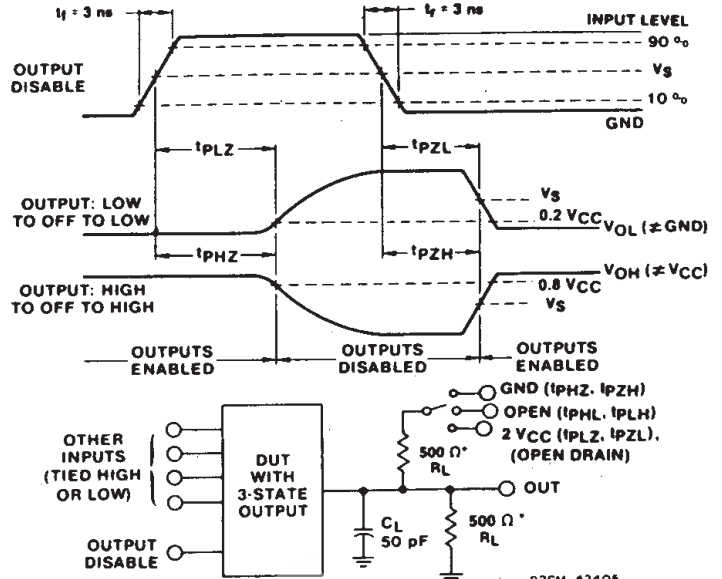
## PARAMETER MEASUREMENT INFORMATION



**NOTES:**

1.  $V_{OHV}$  and  $V_{OLP}$  ARE MEASURED WITH RESPECT TO A GROUND REFERENCE NEAR THE OUTPUT UNDER TEST.
2. INPUT PULSES HAVE THE FOLLOWING CHARACTERISTICS:  
PRR  $\leq$  1 MHz,  $t_r = 3$  ns,  $t_f = 3$  ns, SKEW 1 ns.
3. R.F. FIXTURE WITH 700-MHz DESIGN RULES REQUIRED. IC SHOULD BE SOLDERED INTO TEST BOARD AND BYPASSED WITH 0.1  $\mu$ F CAPACITOR. SCOPE AND PROBES REQUIRE 700-MHz BANDWIDTH.

92CS-42406

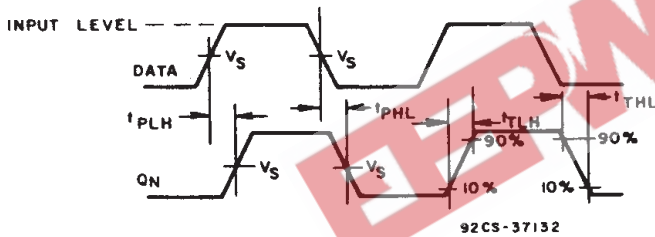


92CM-42405

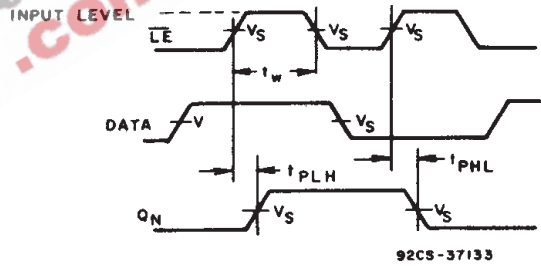
\*FOR AC SERIES ONLY: WHEN  $V_{CC} = 1.5$  V,  $R_L = 1$  k $\Omega$

Fig. 1 - Simultaneous switching transient waveforms.

Fig. 2 - Three-state propagation delay waveforms and test circuit.



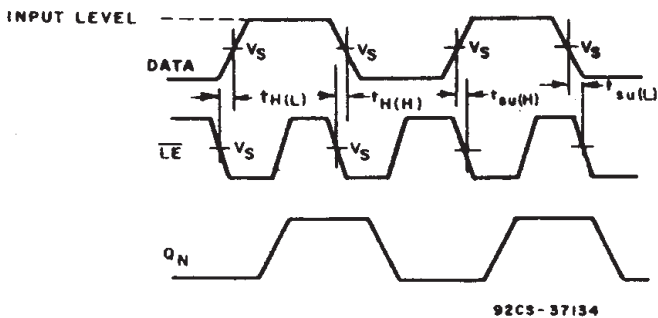
92CS-37132



92CS-37133

Fig. 3 - Data to Qn output propagation delays and output transition times.

Fig. 4 - Latch enable propagation delays.



92CS-37134

Fig. 5 - Latch enable prerequisite times.

|                                 | CD54/74AC    | CD54/74ACT   |
|---------------------------------|--------------|--------------|
| Input Level                     | $V_{CC}$     | 3 V          |
| Input Switching Voltage, $V_S$  | $0.5 V_{CC}$ | 1.5 V        |
| Output Switching Voltage, $V_S$ | $0.5 V_{CC}$ | $0.5 V_{CC}$ |

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