

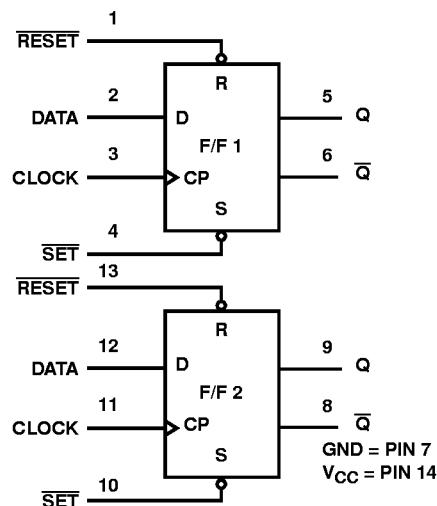
Dual D Flip-Flop with Set and Reset

The CD54HC74F3A and CD54HCT74F3A utilize silicon-gate CMOS technology to achieve operating speeds equivalent to LSTTL parts. They exhibit the low power consumption of standard CMOS integrated circuits, together with the ability to drive 10 LSTTL loads.

This flip-flop has independent DATA, $\overline{\text{SET}}$, $\overline{\text{RESET}}$ and CLOCK inputs and Q and $\overline{\text{Q}}$ outputs. The logic level present at the data input is transferred to the output during the positive-going transition of the clock pulse. $\overline{\text{SET}}$ and $\overline{\text{RESET}}$ are independent of the clock and are accomplished by a low level at the appropriate input.

The CD54HCT logic family is functionally as well as pin compatible with the standard 54LS logic family.

Functional Diagram



HCT INPUT LOAD TABLE

INPUT	UNIT LOAD (NOTE 1)
D	0.5
$\overline{\text{R}}$	0.5
CP	0.7
$\overline{\text{S}}$	0.75

NOTE:

- Unit load is ΔI_{CC} limit specified in DC Electrical Specifications Table, e.g., 360 μ A Max at +25 $^{\circ}$ C.

Absolute Maximum Ratings

DC Supply Voltage, V_{CC}
 Voltages Referenced to GND -0.5V to +7.0V
 DC Input Voltage Range, All Inputs, V_{IN} -0.5V to $V_{CC} + 0.5V$
 DC Output Voltage Range, All Outputs, V_{OUT} . . . -0.5V to $V_{CC} + 0.5V$
 DC Input Diode Current, I_{IK}
 For $V_I < -0.5V$ or $V_I > V_{CC} + 0.5V$ $\pm 20mA$
 DC Output Diode Current, I_{OK}
 For $V_O < -0.5V$ or $V_O > V_{CC} + 0.5V$ $\pm 20mA$
 DC Drain Current, Per Output, I_O , For $-0.5V < V_O < V_{CC} + 0.5V$
 Standard Output $\pm 25mA$
 Bus Driver Output $\pm 35mA$
 DC V_{CC} or GND Current, I_{CC}
 Standard Output $\pm 50mA$
 Bus Driver Output $\pm 70mA$

Power Dissipation Per Package, P_D
 $T_A = -55^{\circ}C$ to $+100^{\circ}C$ (Package F) 500mW
 $T_A = +100^{\circ}C$ to $+125^{\circ}C$ (Package F) Derate Linearly at
 8mW/ $^{\circ}C$ to 300mW
 Operating Temperature Range, T_A
 Package Type F $-55^{\circ}C$ to $+125^{\circ}C$
 Storage Temperature, T_{STG} $-65^{\circ}C$ to $+150^{\circ}C$
 Lead Temperature (During Soldering)
 At Distance 1/16in. \pm 1/32in. (1.59mm \pm 0.79mm)
 From Case For 10s Max $+265^{\circ}C$
 Unit Inserted Into a PC Board (Min Thickness 1/16in., 1.59mm)
 With Solder Contacting Lead Tips Only $+300^{\circ}C$

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Recommended Operating Conditions

Supply Voltage Range, V_{CC}
 $T_A =$ Full Package Temperature Range
 CD54HC Types 2V to 6V
 CD54HCT Types 4.5V to 5.5V
 DC Input or Output Voltage, V_{IN} , V_{OUT} 0V to V_{CC}

Operating Temperature Range, T_A $-55^{\circ}C$ to $+125^{\circ}C$
 Input Rise and Fall Times, t_R , t_F
 at 2V 0ns to 1000ns
 at 4.5V 0ns to 500ns
 at 6V 0ns to 400ns