

Dual J-K Flip-Flop with Reset

The CD54HC107F3A and CD54HCT107F3A utilize silicon-gate CMOS technology to achieve operating speeds similar to LSTTL parts. They exhibit the low power consumption of standard CMOS integrated circuits, together with the ability to drive 10 LSTTL loads.

These flip-flops have independent J, K, Reset and Clock inputs and Q and \bar{Q} outputs. They change state on the negative-going transition of the clock pulse. Reset is accomplished asynchronously by a low-level input.

This device is functionally identical to the HC73/3A but differs in terminal assignment and in some parametric limits.

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

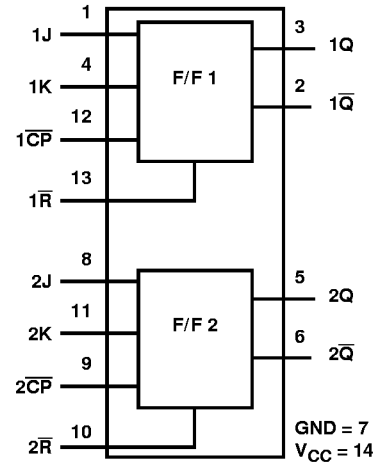
HCT INPUT LOAD TABLE

INPUT	UNIT LOAD (NOTE 1)
All	0.3

NOTE:

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

Functional Diagram



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