

CD54AC109/3A CD54ACT109/3A

**COMPLETE DATA SHEET
COMING SOON!**

June 1997

Dual "J-K" Flip-Flop with Set and Reset

Description

The CD54AC109/3A and CD54ACT109/3A are dual "J-K" flip-flops with set and reset that utilize the Harris Advanced CMOS Logic technology. These flip-flops have independent J, \bar{K} , $\overline{\text{Set}}$, $\overline{\text{Reset}}$ and Clock inputs and Q and \bar{Q} outputs. The CD54AC109/3A and CD54ACT109/3A changes state on the positive-going transition of the clock. $\overline{\text{Set}}$ and $\overline{\text{Reset}}$ are accomplished asynchronously by low-level inputs.

The CD54AC109/3A and CD54ACT109/3A are supplied in 16 lead dual-in-line ceramic packages (F suffix).

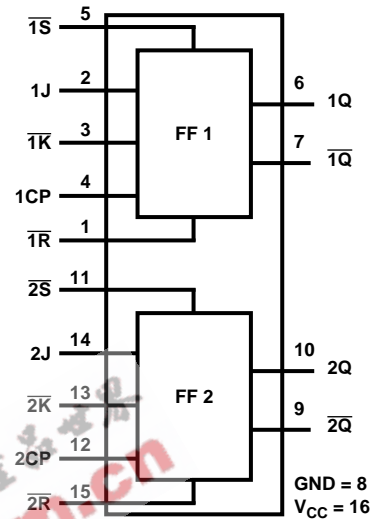
ACT INPUT LOAD TABLE

INPUT	UNIT LOAD (NOTE 1)
J, CP, $\overline{\text{CP}}$	1
\bar{K}	0.53
\bar{S} , \bar{R}	0.58

NOTE:

- Unit load is ΔI_{CC} limit specified in DC Electrical Specifications Table, e.g., 2.4mA Max at +25°C.

Functional Diagram



Absolute Maximum Ratings

DC Supply Voltage, V_{CC} -0.5V to +6V
 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 $V_O > V_{CC} + 0.5V$ $\pm 50mA$
 DC Output Source or Sink Current, Per Output Pin, I_O
 For $V_O > -0.5V$ or $V_O < V_{CC} + 0.5V$ $\pm 50mA$
 DC V_{CC} or GND Current, I_{CC} or I_{GND}
 For Up to 4 Outputs Per Device, Add $\pm 25mA$ For Each
 Additional Output $\pm 100mA$

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}
 Unless Otherwise Specified, All Voltages Referenced to GND
 T_A = Full Package Temperature Range
 CD54AC Types 1.5V to 5.5V
 CD54ACT Types 4.5V to 5.5V
 DC Input or Output Voltage, V_I , V_O 0V to V_{CC}

Operating Temperature, T_A $-55^\circ C$ to $+125^\circ C$
 Input Rise and Fall Slew Rate, dt/dv
 at 1.5V to 3V (AC Types) 0ns/V to 50ns/V
 at 3.6V to 5.5V (AC Types) 0ns/V to 20ns/V
 at 4.5V to 5.5V (AC Types) 0ns/V to 10ns/V