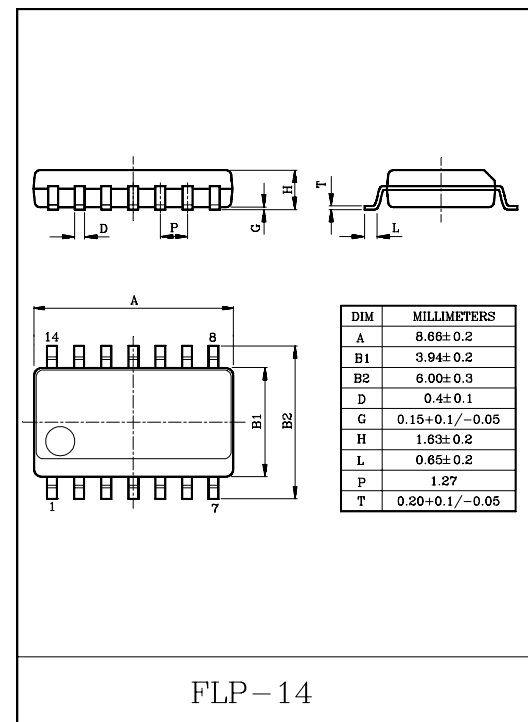
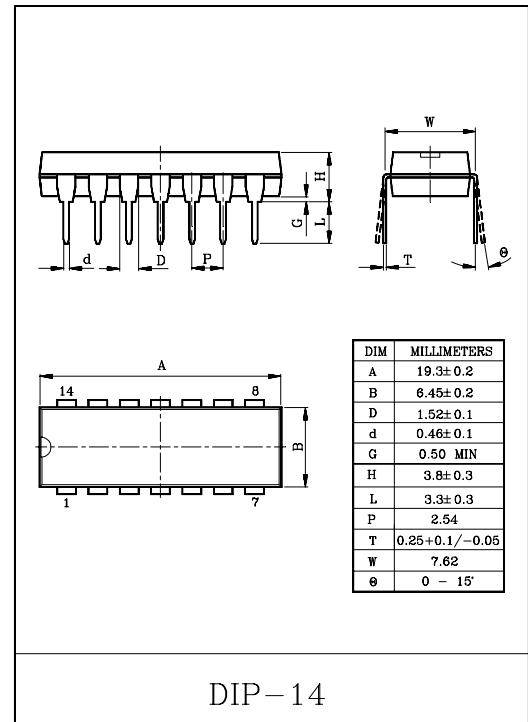


### QUAD VOLTAGE COMPARATORS

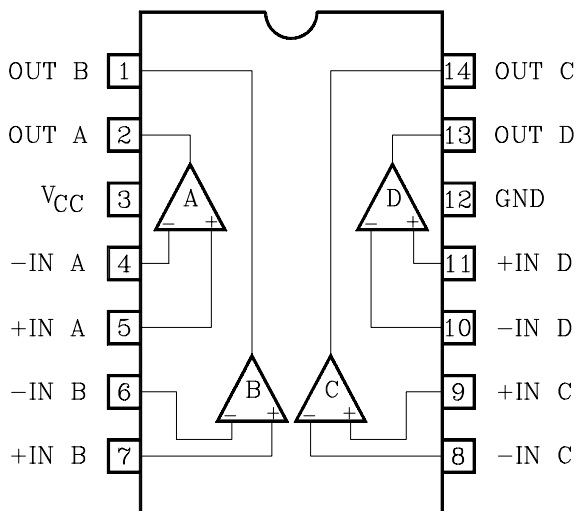
This device consist of for independent voltage comparators that designed to operated from a single power supply over a wide range of voltage. Normal operation from dual supplies are also to be guaranteed on voltage range from 2V to 36V.  $V_{CC}$  is necessary at least more 1.5 volts than the input common mode voltage.

The output can be connected to other open collector outputs to achieve Wired-OR relation ship.

- Single Supply Voltage Range or Dual Supplies  
:  $2V_{DC}$  to  $36V_{DC}$  or  $\pm 18V_{DC}$
- Low Supply Current : 0.8mA (Typ.)
- Low Input Offset Voltage :  $\pm 2mV$  (Typ.)
- Wide Input Common Mode Voltage Range  
:  $0V_{DC}$  to  $V_{CC}-1.5V_{DC}$
- Output Compatible With TTL, DTL, MOS and CMOS Logic System.
- The Output Can be Connected to Achieve Wired-OR Relation.



### PIN CONNECTION (TOP VIEW)

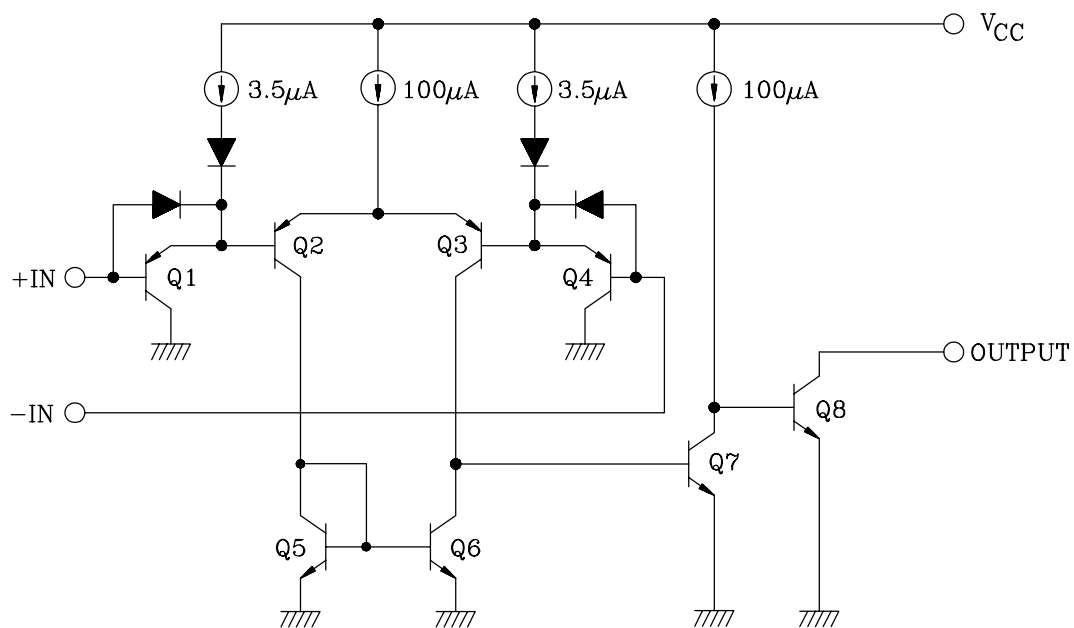


# KIA339P/F

MAXIMUM RATINGS (Ta=25℃)

| CHARACTERISTIC             |         | SYMBOL     | RATING             | UNIT |
|----------------------------|---------|------------|--------------------|------|
| Supply Voltage             |         | $V_{CC}$   | $\pm 18, 36$       | V    |
| Differential Input Voltage |         | $DV_{IN}$  | $\pm 18, 36$       | V    |
| Common Mode Input Voltage  |         | $CMV_{IN}$ | $-0.3 \sim V_{CC}$ | V    |
| Power Dissipation          | KIA339P | $P_D$      | 625                | mW   |
|                            | KIA339F |            | 280                |      |
| Operating Temperature      |         | $T_{opr}$  | $-40 \sim 85$      | ℃    |
| Storage Temperature        |         | $T_{stg}$  | $-55 \sim 125$     | ℃    |

## EQUIVALENT CIRCUIT



# KIA339P/F

ELECTRICAL CHARACTERISTICS ( $V_{CC}=5V$ ,  $V_{EE}=GND$ ,  $T_a=25^{\circ}C$ )

| CHARACTERISTIC             | SYMBOL     | TEST CIRCUIT | TEST CONDITION                        | MIN. | TYP. | MAX.         | UNIT    |
|----------------------------|------------|--------------|---------------------------------------|------|------|--------------|---------|
| Input Offset Voltage       | $V_{IO}$   | 4            | $V_O=1.4V$                            | -    | 2    | 5            | mV      |
| Input Offset Current       | $I_{IO}$   | 2            | -                                     | -    | 5    | 50           | nA      |
| Input Bias Current         | $I_I$      | 2            | -                                     | -    | 25   | 250          | nA      |
| Common Mode Input Voltage  | $CMV_{IN}$ | 4            | -                                     | 0    | -    | $V_{CC}-1.5$ | V       |
| Voltage Gain               | $G_V$      | -            | $R_L=15k\Omega$                       | -    | 200  | -            | V/mV    |
| Supply Current             | $I_{CC}$   | 1            | No load                               | -    | 0.8  | 2            | mA      |
| Sink Current               | $I_{sink}$ | 5            | $+IN=0V$ , $-IN=1V$<br>$V_{OL}=1.5V$  | 6    | 16   | -            | mA      |
| Output Voltage ("L" Level) | $V_{OL}$   | 5            | $+IN=0V$ , $-IN=1V$<br>$I_{sink}=3mA$ | -    | 0.2  | 0.4          | V       |
| Output Leak Current        | $I_{LEAK}$ | 3            | $+IN=1V$ , $-IN=0V$<br>$V_O=5V$       | -    | 0.1  | -            | nA      |
| Response Time              | $t_{rsp}$  | 6            | $R_L=5.1k\Omega$ , $C_L=15pF$         | -    | 1.3  | -            | $\mu S$ |

## TEST CIRCUIT

