

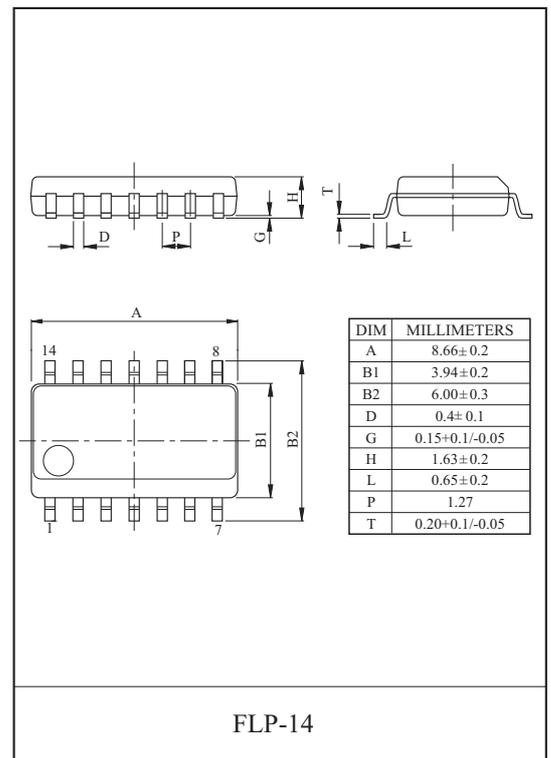
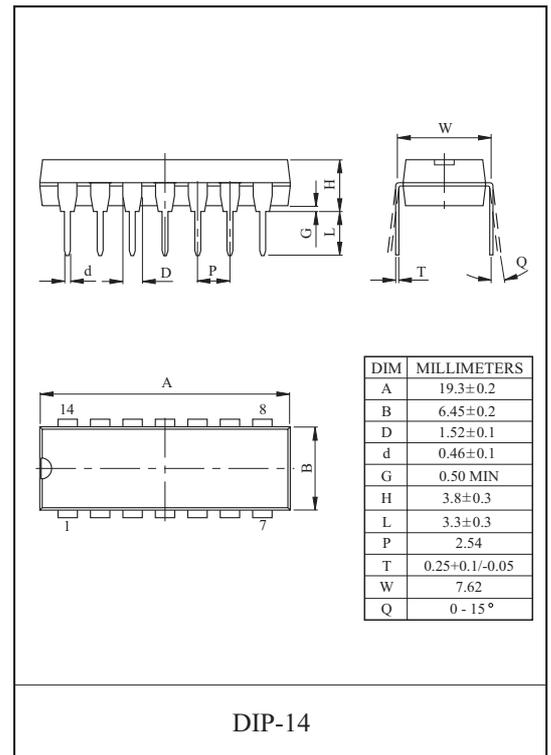
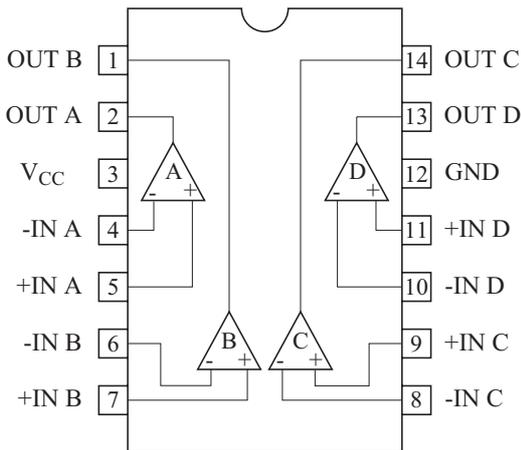
QUAD VOLTAGE COMPARATORS

This device consists of four independent voltage comparators that are designed to operate from a single power supply over a wide range of voltage. Normal operation from dual supplies is also to be guaranteed over a voltage range from 2V to 36V.

V_{CC} is necessary at least 1.5 volts more than the input common mode voltage. The output can be connected to other open collector outputs to achieve a Wired-OR relationship.

- 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.
- Suffix U : Qualified to AEC-Q100
ex) KIA339P-EL/PU

PIN CONNECTION (TOP VIEW)

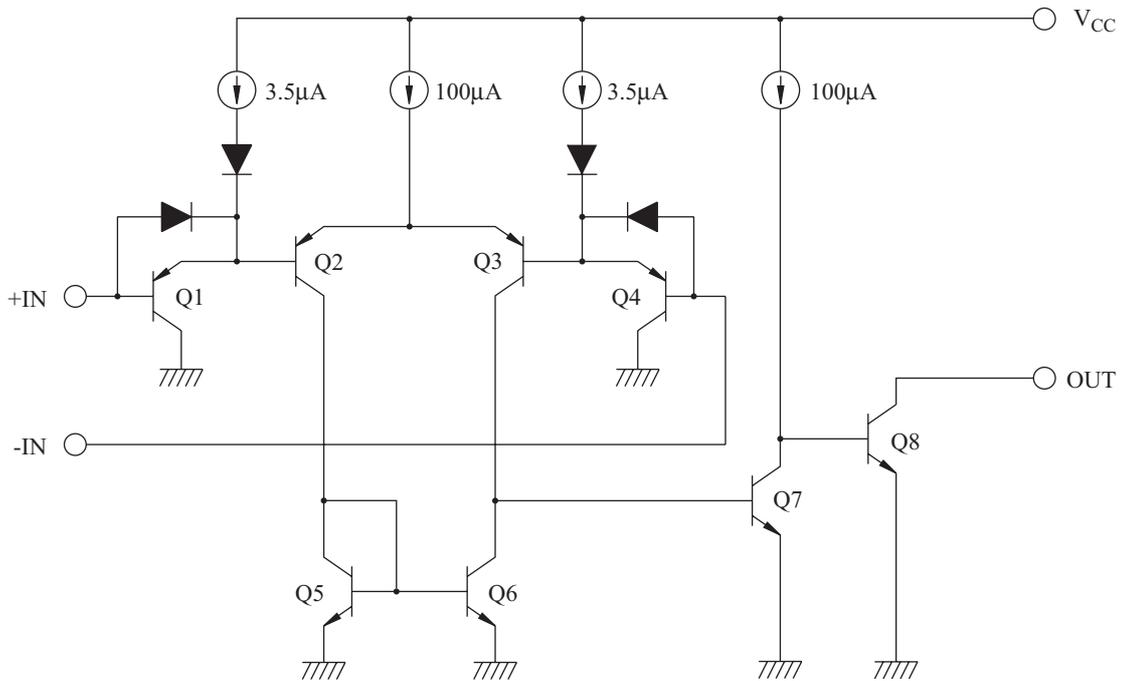


KIA339P/F

MAXIMUM RATINGS (Ta=25 °C)

| 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} | $-0.3 V_{CC}$ | V |
| Power Dissipation | KIA339P | P_D | 625 | mW |
| | KIA339F | | 280 | |
| Operating Temperature | | T_{opr} | -40 85 | |
| Storage Temperature | | T_{stg} | -55 125 | |

EQUIVALENT CIRCUIT

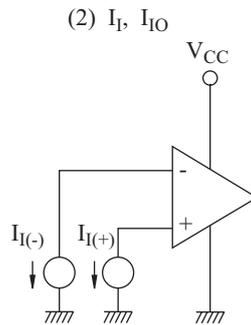
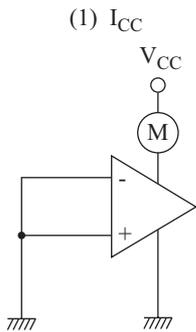


KIA339P/F

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 | - | $R_L=15k$ | - | 200 | - | V/mV |
| Supply Current | I_{CC} | 1 | No load | - | 0.8 | 2 | mA |
| Sink Current | I_{sink} | 5 | +IN=0V, -IN=1V, $V_{OL}=1.5V$ | 6 | 16 | - | mA |
| Output Voltage ("L" Level) | V_{OL} | 5 | +IN=0V, -IN=1V, $I_{sink}=3mA$ | - | 0.2 | 0.4 | V |
| Output Leak Current | I_{LEAK} | 3 | +IN=1V, -IN=0V, $V_O=5V$ | - | 0.1 | - | nA |
| Response Time | t_{rsp} | 6 | $R_L=5.1k$, $C_L=15pF$ | - | 1.3 | - | μs |

TEST CIRCUIT



$$I_{IO} = |I_{I(+)} - I_{I(-)}|$$

