

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

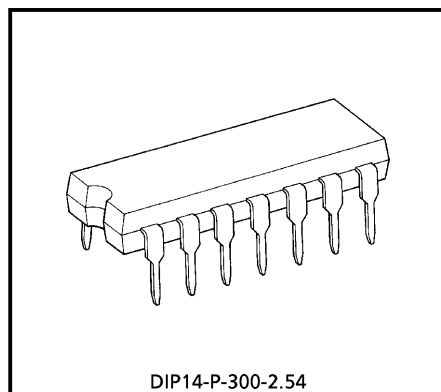
# TA75339AP

## QUAD COMPARATOR

The TA75339AP consists of four independent voltage comparators with an output sink current specification as low as 60mA Min. for all four comparators.

These were designed to operate from a single power supply over a wide range of voltage. Normal operation from dual supplies is also to be guaranteed on voltage range from 2V to 36V.  $V_{CC}$  is necessary at least more 1.5V than the input common mode voltage.

The output can be connected to other open collector outputs to achieve Wired-OR relationship and it can drive relays or lamps.



Weight : 1.0g (Typ.)

### FEATURES

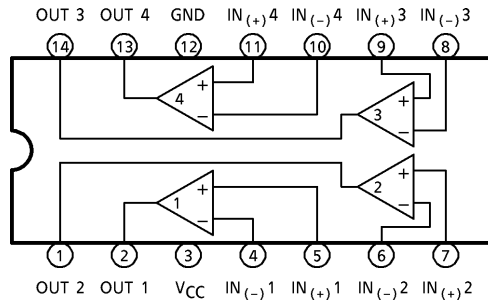
- Single Supply Voltage Range or Dual Supplies : 2V~36V or  $\pm 1V \sim \pm 18V$
- Output Sink Current : 100mA (Typ.)
- Low Input Offset Voltage :  $\pm 2mV$  (Typ.)
- Wide Input Common Mode Voltage Range :  $0V \sim V_{CC} - 1.5V$
- Output Compatible with TTL, DTL, MOS and CMOS Logic System.
- The Output can be Connected to Achieve Wired-OR Relation.

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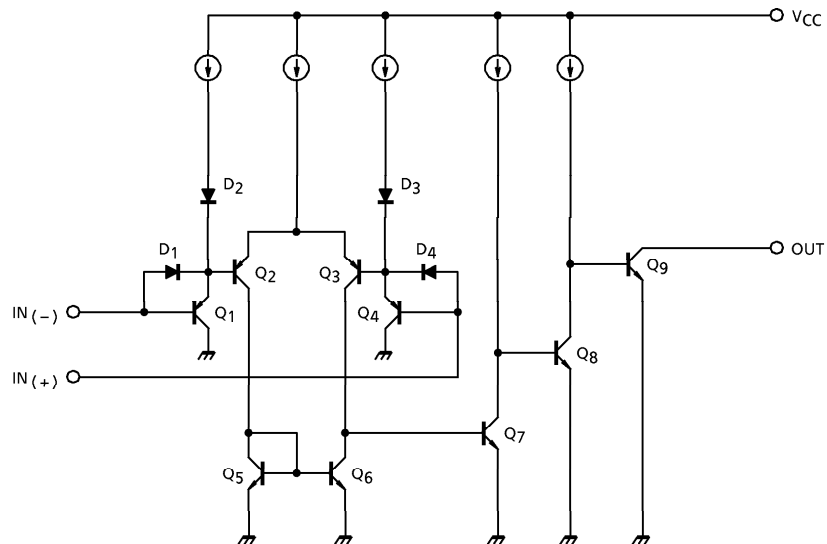
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**PIN CONNECTION (TOP VIEW)**

TA75339AP



**EQUIVALENT CIRCUIT**



## MAXIMUM RATINGS (Ta = 25°C)

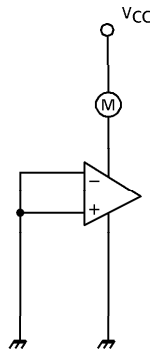
| CHARACTERISTIC             | SYMBOL            | RATING               | UNIT |
|----------------------------|-------------------|----------------------|------|
| Supply Voltage             | V <sub>CC</sub>   | ± 18~36              | V    |
| Differential Input Voltage | DV <sub>IN</sub>  | ± 36                 | V    |
| Common Mode Input Voltage  | CMV <sub>IN</sub> | -0.3~V <sub>CC</sub> | V    |
| Power Dissipation          | P <sub>D</sub>    | 625                  | mW   |
| Operating Temperature      | T <sub>opr</sub>  | -40~85               | °C   |
| Storage Temperature        | T <sub>stg</sub>  | -55~125              | °C   |

ELECTRICAL CHARACTERISTICS (Ta = 25°C, V<sub>CC</sub> = 5V)

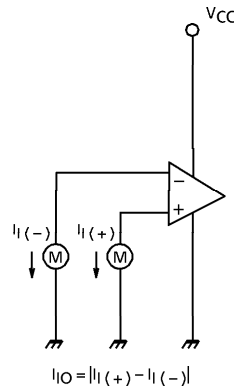
| CHARACTERISTIC             | SYMBOL            | TEST CIRCUIT | TEST CONDITION  | MIN. | TYP. | MAX.                  | UNIT |
|----------------------------|-------------------|--------------|---|------|------|-----------------------|------|
| Input Offset Voltage       | V <sub>IO</sub>   | —            | —   | —    | 2    | 10                    | mV   |
| Input Bias Current         | I <sub>I</sub>    | —            | —   | —    | 25   | 250                   | nA   |
| Input Offset Current       | I <sub>IO</sub>   | —            | —   | —    | 5    | 70                    | nA   |
| Common Mode Input Voltage  | CMV <sub>IN</sub> | —            | —   | 0    | —    | V <sub>CC</sub> - 1.5 | V    |
| Voltage Gain               | G <sub>V</sub>    | —            | R <sub>L</sub> = 15kΩ                                 | —    | 200  | —                     | V/mV |
| Supply Current             | I <sub>CC</sub>   | —            | no load   | —    | 11   | 22                    | mA   |
| Sink Current               | I <sub>SINK</sub> | —            | IN (+) = 0V, IN (-) = 1V,<br>V <sub>OL</sub> = 1.5V   | —    | 100  | —                     | mA   |
| Output Voltage ("L" level) | V <sub>OL</sub>   | —            | IN (+) = 0V, IN (-) = 1V,<br>I <sub>SINK</sub> = 60mA | —    | 0.2  | 0.6                   | V    |
| Output Leak Current        | I <sub>LEAK</sub> | —            | IN (+) = 1V, IN (-) = 0V,<br>V <sub>O</sub> = 5V      | —    | 0.1  | —                     | nA   |
| Response Time              | t <sub>rsp</sub>  | —            | R <sub>L</sub> = 82Ω, C <sub>L</sub> = 15pF           | —    | 1.0  | —                     | μs   |

TEST CIRCUIT

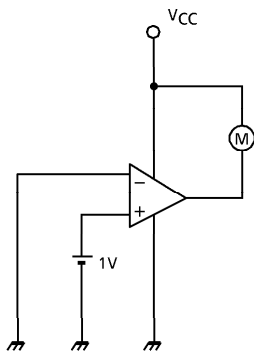
(1)  $I_{CC}$



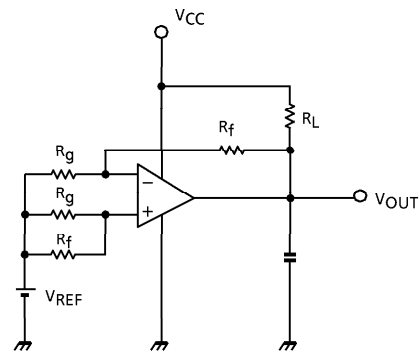
(2)  $I_I, I_{IO}$



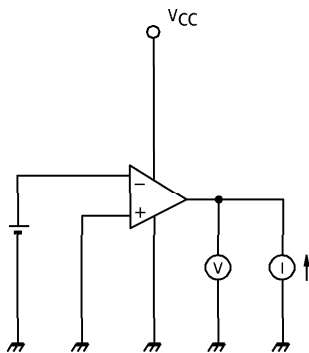
(3)  $I_{LEAK}$



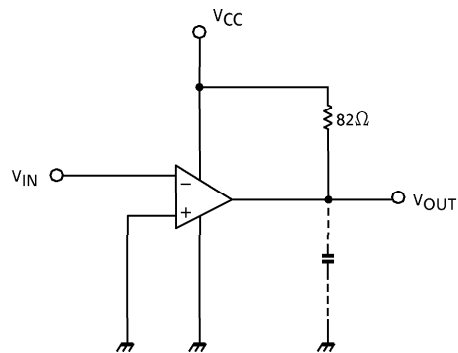
(4)  $V_{IO}, CMV_{IN}$



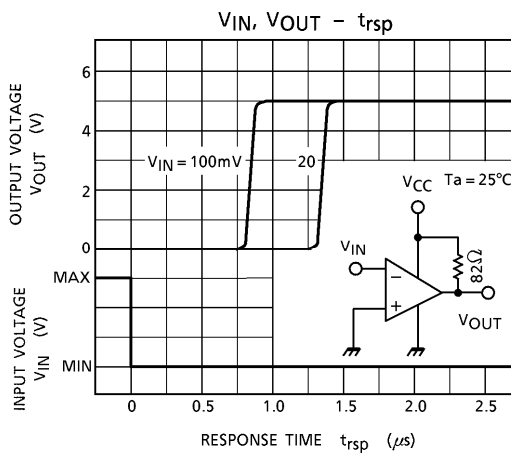
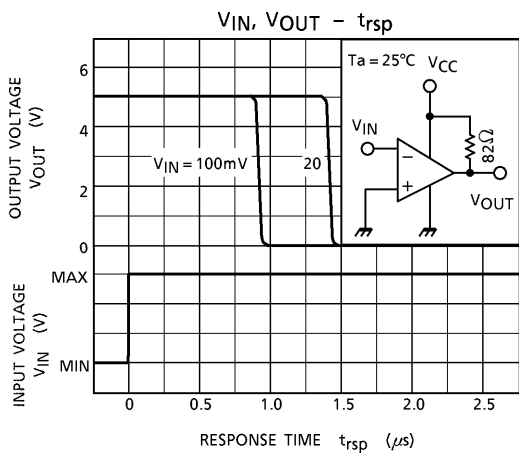
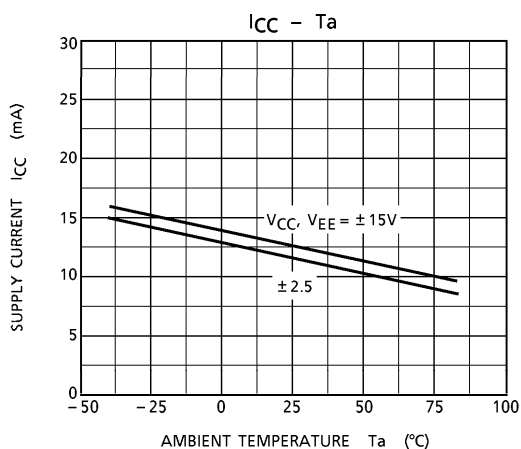
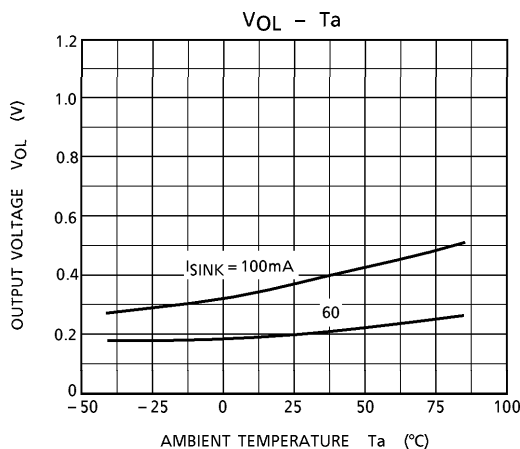
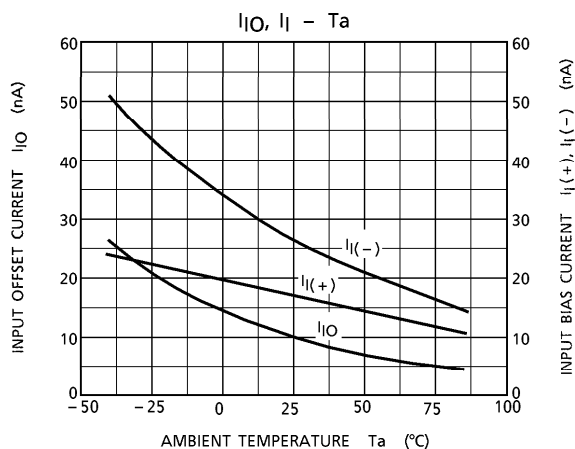
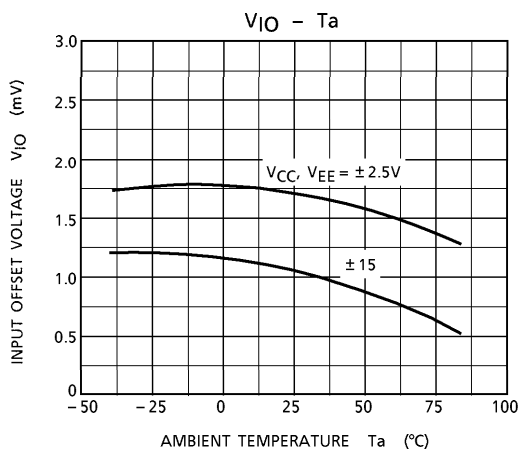
(5)  $I_{SINK}, V_{OL}$



(6)  $t_{rsp}$

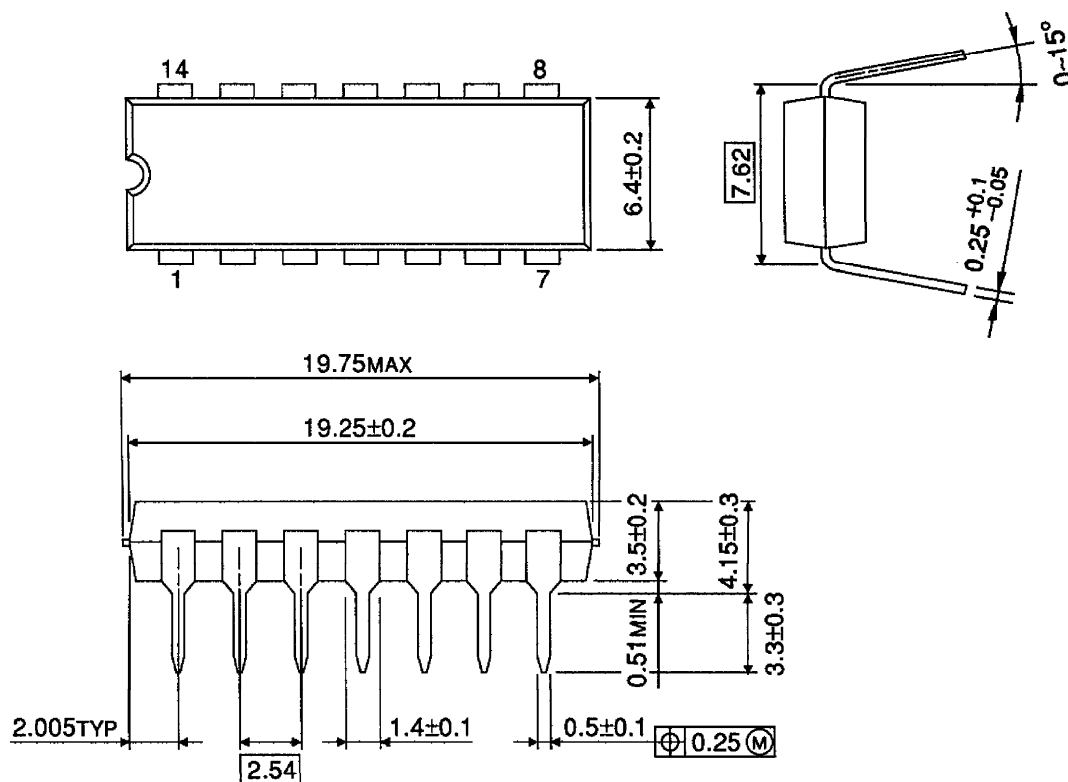


CHARACTERISTICS



OUTLINE DRAWING  
DIP14-P-300-2.54

Unit : mm



Weight : 1.0g (Typ.)