

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

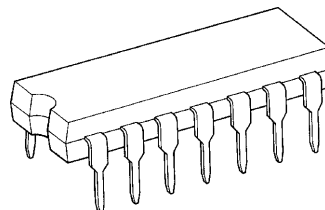
**TA75339P, TA75339F, TA75339FB****QUAD COMPARATOR**

This device consist of four independent voltage comparators that 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 1.5 volts than the input common mode voltage. The output can be connected to other open collector outputs to achieve Wired-OR relation ship.

**FEATURES**

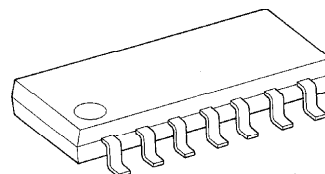
- Single Supply Voltage Range or Dual Supplies : 2V~36V or  $\pm 1V\sim 18V$
- Low Supply Current : 0.8mA (Typ.)
- Low Input Offset Voltage :  $\pm 2mV$  (Typ.)
- Wide Input Common Mode Voltage Range :  $0V\sim V_{CC} - 1.5V$
- Output Compatible with TTL, DTL, MOS and CMOS Logic System.
- The Output Can be Connected to Achieve Wired-OR Relation.

TA75339P



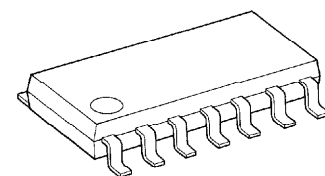
DIP14-P-300-2.54

TA75339F



SOP14-P-225-1.27

TA75339FB



SOP14-P-225-1.27B

**Weight**

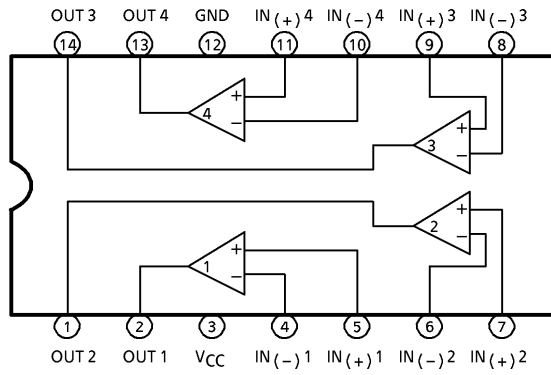
DIP14-P-300-2.54 : 1.0g (Typ.)  
 SOP14-P-225-1.27 : 0.2g (Typ.)  
 SOP14-P-225-1.27B : 0.2g (Typ.)

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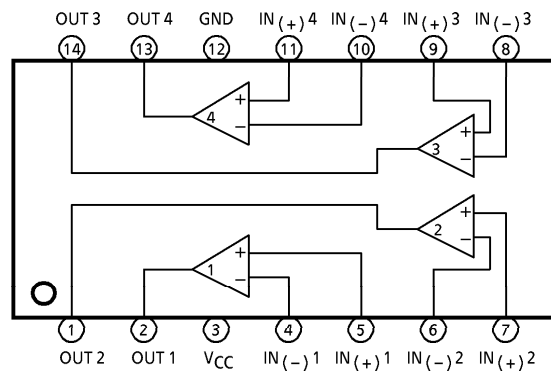
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PIN CONNECTION (TOP VIEW)

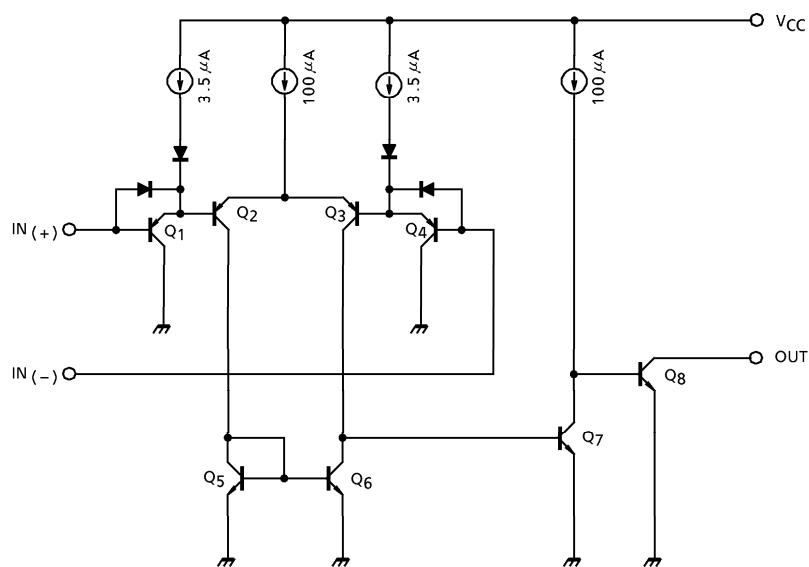
TA75339P



TA75339F / TA75339FB



EQUIVALENT CIRCUIT



## MAXIMUM RATINGS (Ta = 25°C)

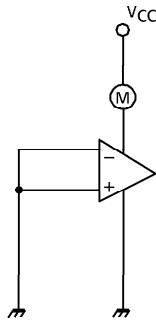
| CHARACTERISTIC             | SYMBOL            | TA75339P             | TA75339F             | TA75339FB            | UNIT |
|----------------------------|-------------------|----------------------|----------------------|----------------------|------|
| Supply Voltage             | V <sub>CC</sub>   | ± 18 OR 36           | ± 18 OR 36           | ± 18 OR 36           | V    |
| Differential Input Voltage | DV <sub>IN</sub>  | ± 36                 | ± 36                 | ± 36                 | V    |
| Common Mode Input Voltage  | CMV <sub>IN</sub> | -0.3~V <sub>CC</sub> | -0.3~V <sub>CC</sub> | -0.3~V <sub>CC</sub> | V    |
| Power Dissipation          | P <sub>D</sub>    | 625                  | 280                  | 280                  | mW   |
| Operating Temperature      | T <sub>opr</sub>  | -40~85               | -40~85               | -40~85               | °C   |
| Storage Temperature        | T <sub>stg</sub>  | -55~125              | -55~125              | -55~125              | °C   |

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

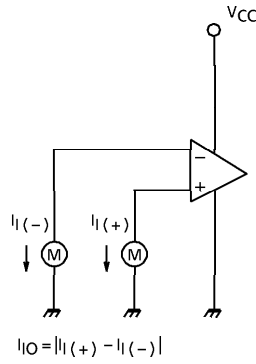
| CHARACTERISTIC             | SYMBOL            | TEST CIRCUIT | TEST CONDITION                                       | MIN. | TYP. | MAX.                    | UNIT |
|----------------------------|-------------------|--------------|--|------|------|-------------------------|------|
| Input Offset Voltage       | V <sub>IO</sub>   | 4            | —  | —    | 2    | 5                       | mV   |
| Input Offset Current       | I <sub>I</sub>    | 2            | —  | —    | 25   | 250                     | nA   |
| Input Bias Current         | I <sub>IO</sub>   | 2            | —  | —    | 5    | 50                      | nA   |
| Common Mode Input Voltage  | CMV <sub>IN</sub> | 4            | —  | 0    | —    | V <sub>CC</sub><br>-1.5 | V    |
| Voltage Gain               | G <sub>V</sub>    | —            | R <sub>L</sub> = 15kΩ                                | —    | 200  | —                       | V/mV |
| Supply Current             | I <sub>CC</sub>   | 1            | no load  | —    | 0.8  | 2                       | mA   |
| Sink Current               | I <sub>SINK</sub> | 5            | IN (+) = 0V, IN (-) = 1V,<br>V <sub>OL</sub> = 1.5V  | 6    | 16   | —                       | mA   |
| Output Voltage ("L" level) | V <sub>OL</sub>   | 5            | IN (+) = 0V, IN (-) = 1V,<br>I <sub>SINK</sub> = 3mA | —    | 0.2  | 0.4                     | V    |
| Output Leak Current        | I <sub>LEAK</sub> | 3            | IN (+) = 1V, IN (-) = 0V,<br>V <sub>O</sub> = 5V     | —    | 0.1  | —                       | nA   |
| Response Time              | t <sub>rsp</sub>  | 6            | R <sub>L</sub> = 5.1kΩ, C <sub>L</sub> = 15pF        | —    | 1.3  | —                       | μs   |

TEST CIRCUIT

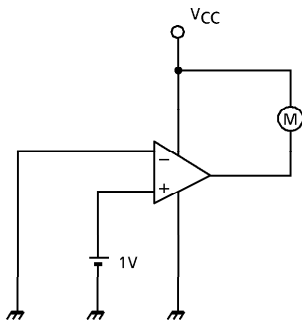
(1)  $I_{CC}$



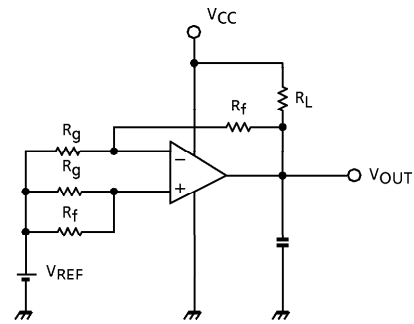
(2)  $I_I, I_{IO}$



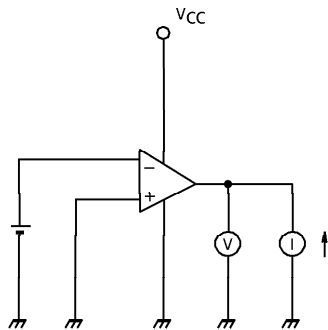
(3)  $I_{LEAK}$



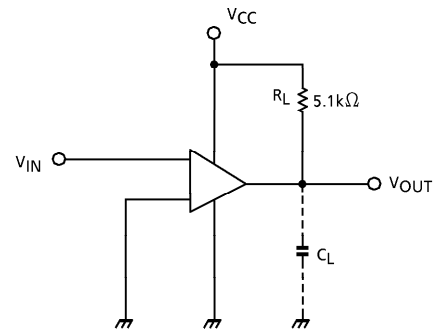
(4)  $V_{IO}, CMV_{IN}$



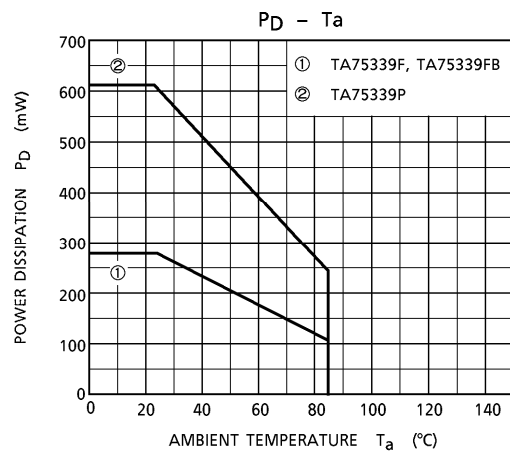
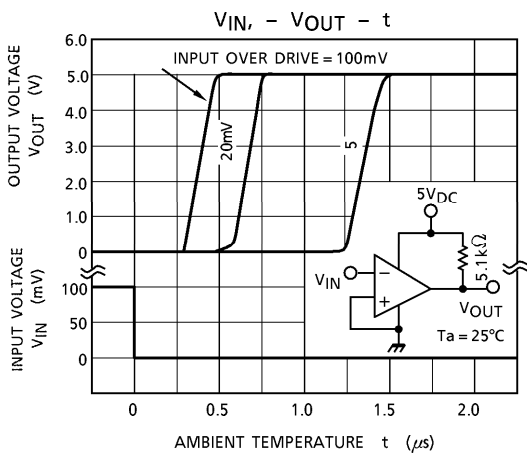
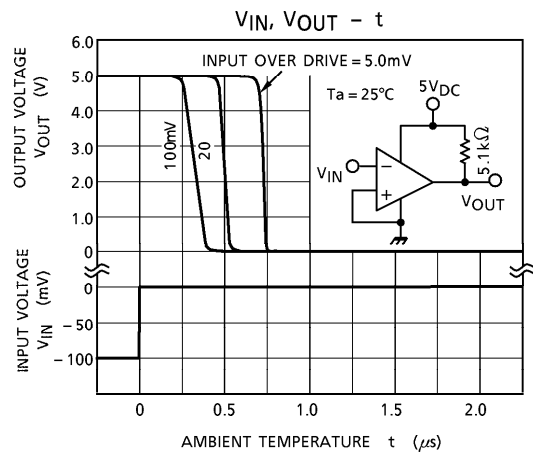
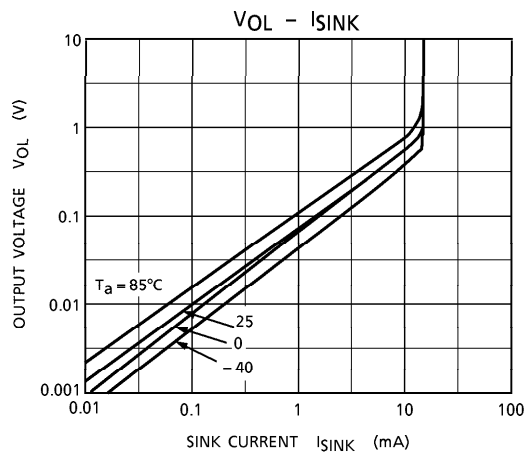
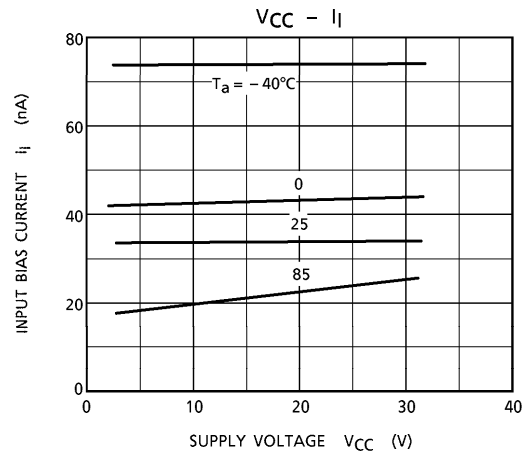
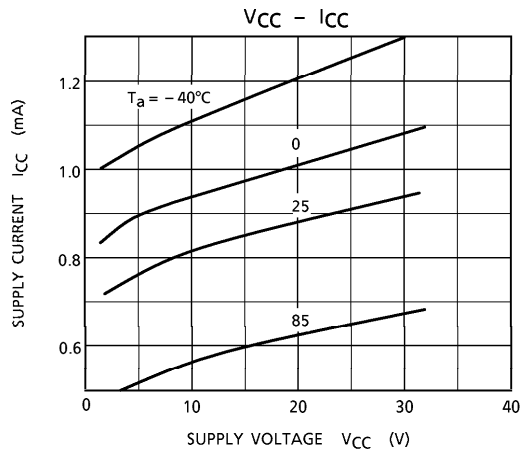
(5)  $I_{SINK}, V_{OL}$



(6)  $t_{rsp}$

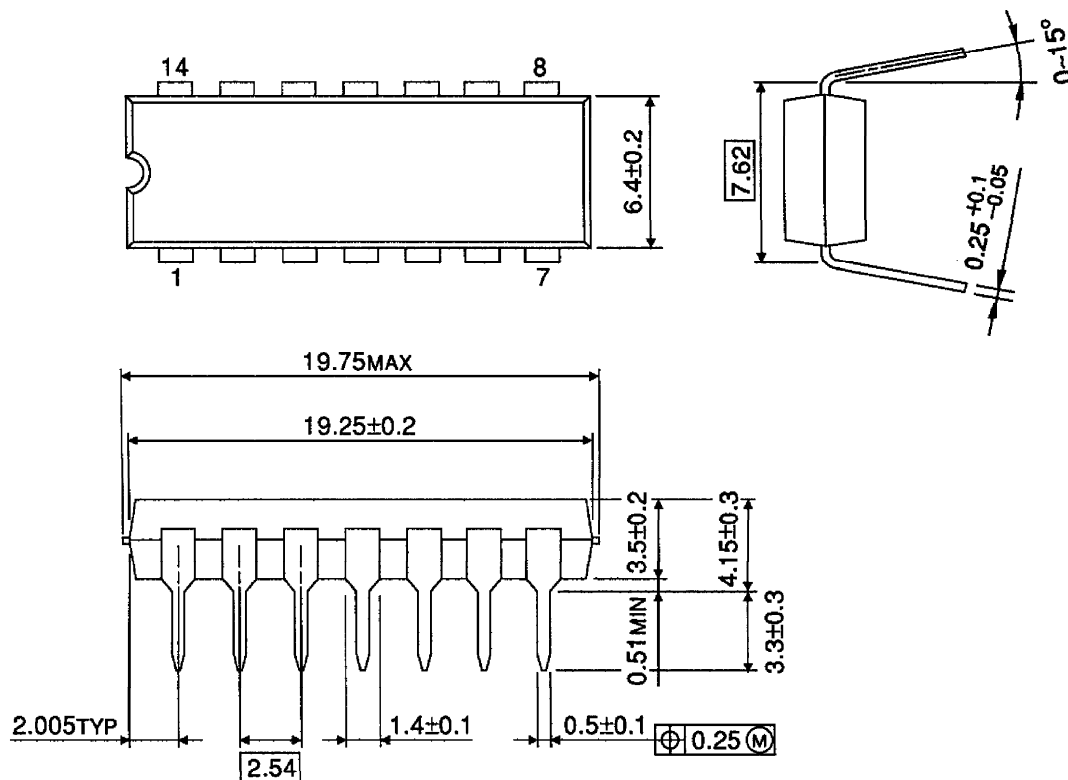


CHARACTERISTICS



OUTLINE DRAWING  
DIP14-P-300-2.54

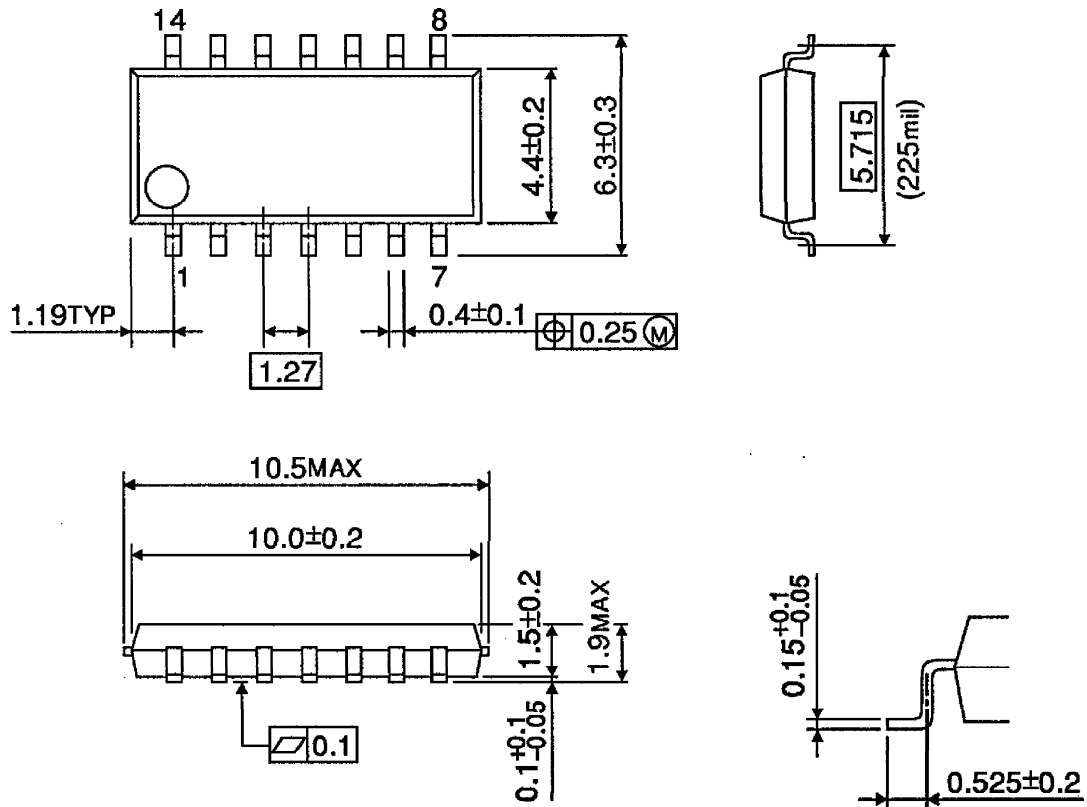
Unit : mm



Weight : 1.0g (Typ.)

OUTLINE DRAWING  
SOP14-P-225-1.27

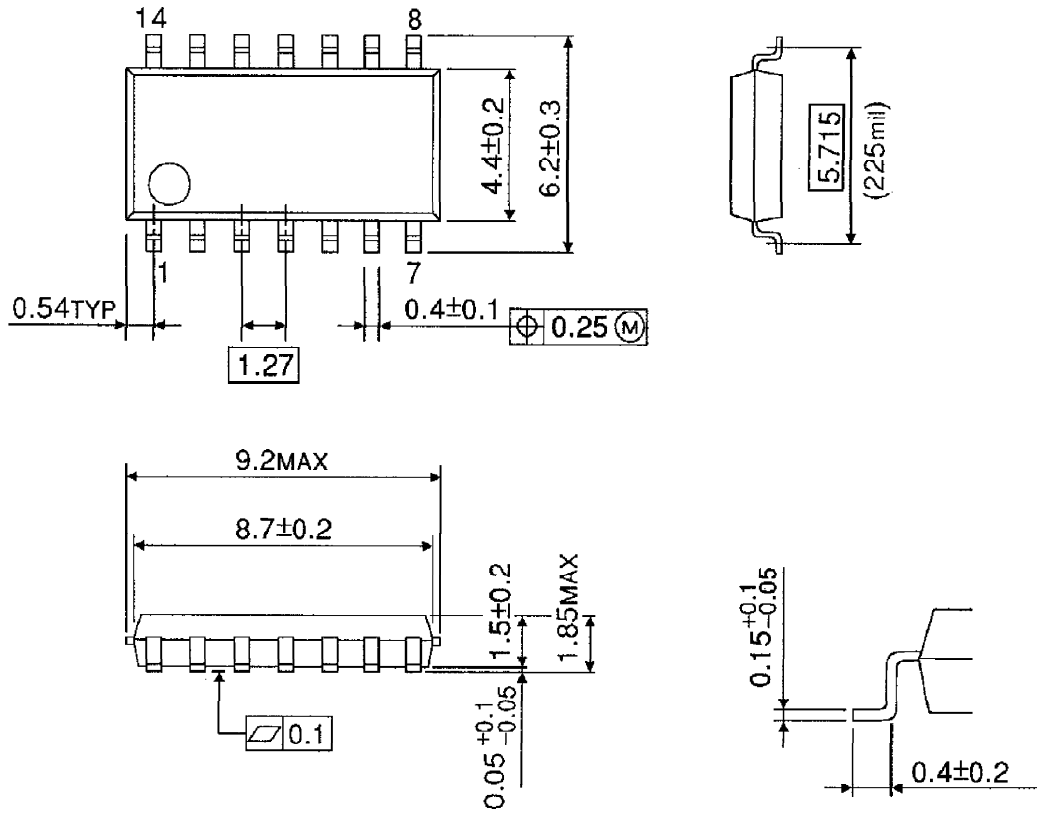
Unit : mm



Weight : 0.2g (Typ.)

**OUTLINE DRAWING**  
SOP14-P-225-1.27B

Unit : mm



Weight : 0.2g (Typ.)