

TA8505P

SUPPLY VOLTAGE SUPERVISOR

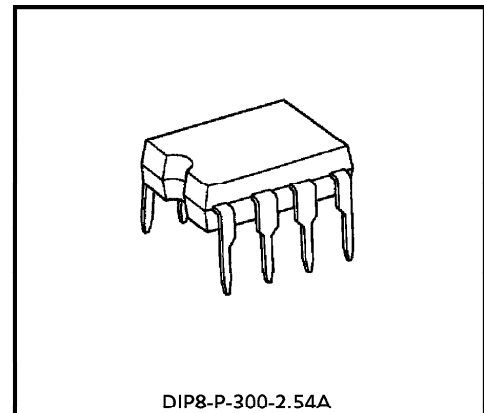
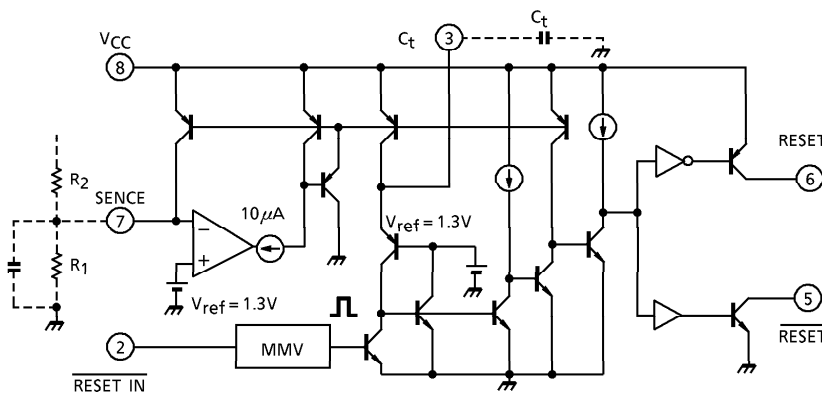
TA8505P is a bipolar monolithic IC developed for Reset Controller in digital systems, especially in microcomputer systems.

Wide Range detecting voltage can be set freely by a few external parts.

FEATURES

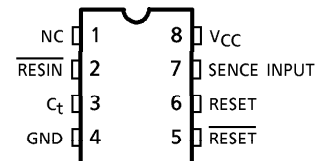
- A detected voltage and hysteresis can be set with 2 external resistances.
- Provided the 2 Outputs of Reset and $\overline{\text{Reset}}$.
- $\overline{\text{Reset-IN}}$ signal can reset two Outputs' Voltage.
- Wide operating Voltage Range : 1.8~32V
- Output current : $I_{OL} = 20\text{mA}$ (Max.)

BLOCK DIAGRAM



Weight : 0.5g (Typ.)

PIN CONNECTION (TOP VIEW)



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MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------|---------------------------|----------|------|
| Supply Voltage | V _{CC} | 36 | V |
| Breakdown Voltage | $\overline{\text{RESIN}}$ | 36 | V |
| | SENSE | | |
| Output Current | I _{OH} | - 1 | mA |
| | I _{OL} | 20 | |
| Power Dissipation | P _D | 0.6 | W |
| Operating Temperature | T _{opr} | - 40~85 | °C |
| Storage Temperature | T _{stg} | - 55~150 | °C |

RECOMMENDED OPERATING CONDITION

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|-----------------------|---------------------------|---------------------------|-----------------|------|------|-----------------|-----------------|---|
| Supply Voltage | | V _{CC} | — | 1.8 | — | 32 | V | |
| Input Voltage | | V _{IN} | — | 0 | — | V _{CC} | V | |
| Input Voltage | "H" Level | $\overline{\text{RESIN}}$ | V _{IH} | — | 2.0 | — | V _{CC} | V |
| | "L" Level | $\overline{\text{RESIN}}$ | V _{IL} | — | 0 | — | 0.6 | |
| Output Current | RESET | I _{OH} | — | 0 | — | - 1 | mA | |
| | $\overline{\text{RESET}}$ | I _{OL} | — | 0 | — | 16 | | |
| Operation Temperature | | T _{opr} | — | 0 | — | 70 | °C | |

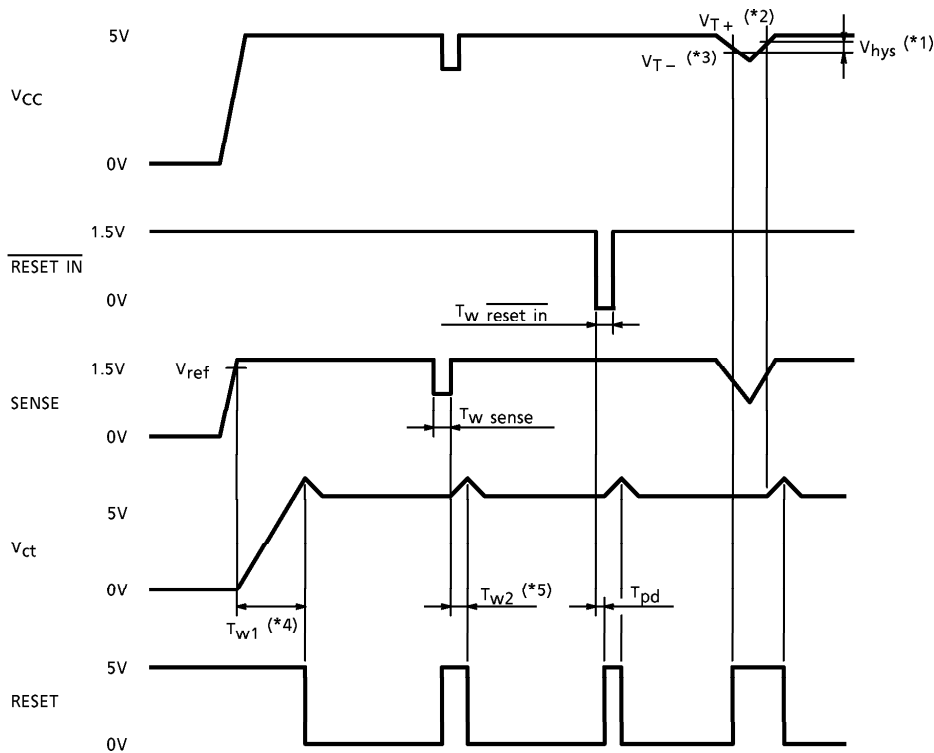
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CIR-CUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|-------------------------------|---------------------------|---------------------------|---------------|---|-------------------------|------|-------|------|----|
| Input Current | "H" Level | $\overline{\text{RESIN}}$ | — | V _{CC} = 5.0V | V _{IN} = 2.0V | — | — | 2 | μA |
| | | SENSE | | | V _{IN} = 1.5V | - 8 | - 12 | - 16 | |
| | "L" Level | $\overline{\text{RESIN}}$ | | | V _{IN} = 0.4V | 0 | - 0.8 | - 6 | |
| | | SENSE | | | V _{IN} = 1V | 0 | — | ± 2 | |
| C _t Charge Current | | I _{ct} | — | V _{CC} = 5.0V, V _{ct} = 0V | - 12 | - 19 | - 26 | μA | |
| Output Voltage | RESET | V _{OH} | — | V _{CC} = 5.0V | I _{OL} = - 1mA | 4.5 | 4.8 | — | V |
| | $\overline{\text{RESET}}$ | V _{OL} | | | I _{OH} = 16mA | — | 0.1 | 0.4 | |
| Output Current | RESET | I _{OL} | — | V _{CC} = 5.0V | V _{OL} = 0V | — | — | - 2 | μA |
| | $\overline{\text{RESET}}$ | I _{OH} | | | V _{OH} = 5.0V | — | — | 2 | |
| Reference Voltage | | V _{ref} | — | V _{CC} = 5.0V | 1.24 | 1.31 | 1.38 | V | |
| Supply Current | | I _{CC} | — | V _{CC} = 5.0V, All inputs and outputs open | — | 1.6 | 3.0 | mA | |

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

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|--------------------------------------|----------------|--------------|--|--------------------|------|------|---------|----|
| Input Pulse Width | t_w sense | — | $V_{IH} = V_{ref}$ Typ + 200mA $V_{IL} = V_{ref}$ Typ - 200mA | 1.0 | — | — | μs | |
| | t_w reset in | — | — | 0.4 | 1.4 | — | | |
| Output Pulse Width | t_w | — | $C_t = 0.1 \mu F$ | $V_{ct}(t=0) = 1V$ | 0.65 | 1.3 | 2.6 | ms |
| | | | | $V_{ct}(t=0) = 0V$ | — | 5.7 | — | |
| Propagation Delay Time (RESIN-RESET) | t_{pd} | — | $C_L = 100pF$, $R_L = 4.7k\Omega$ | — | 1 | — | μs | |

TIMING CHART



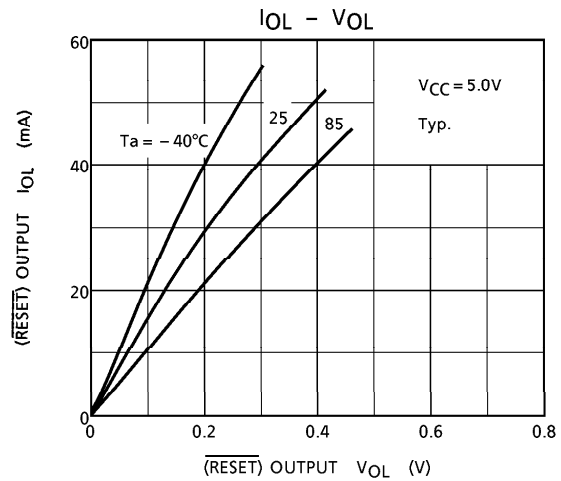
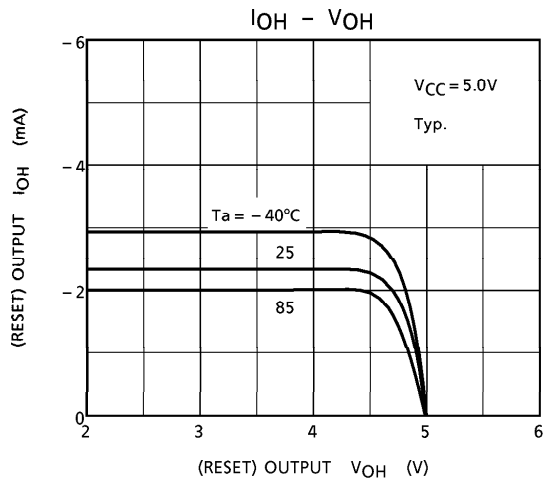
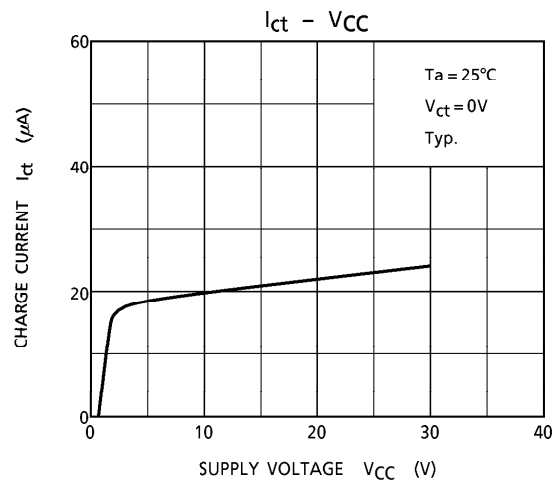
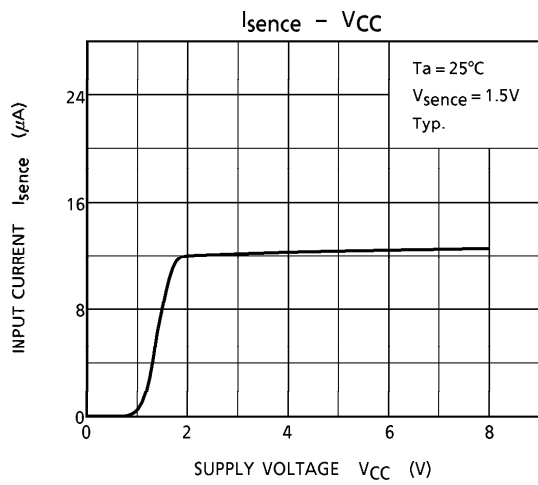
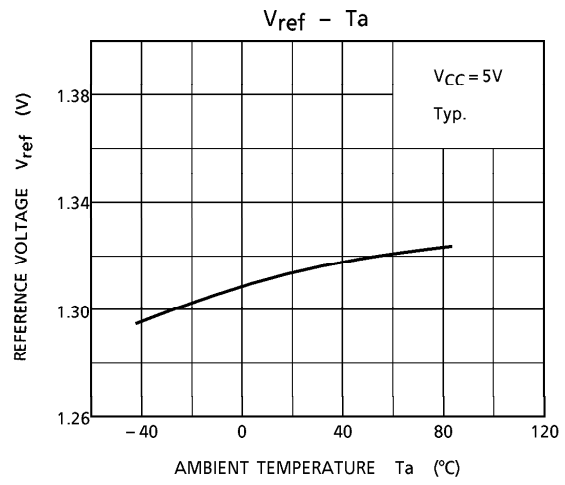
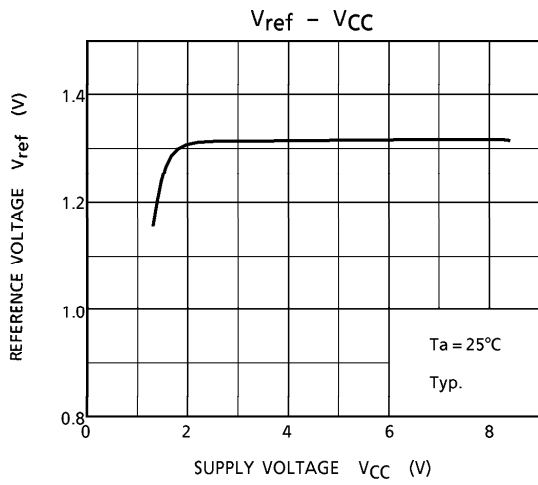
(*1) $V_{hys} = (R_1 + R_2) \times 10^{-5}$ (V)

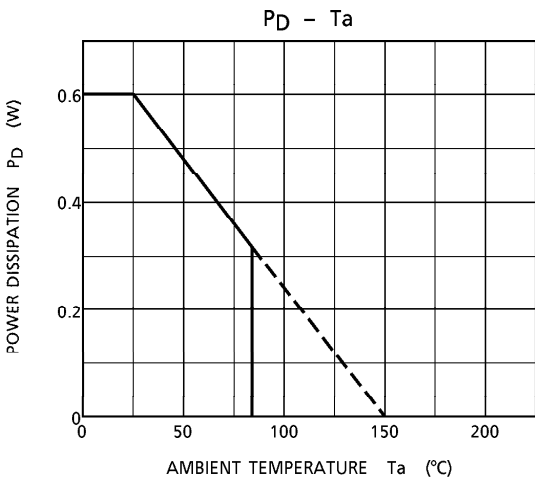
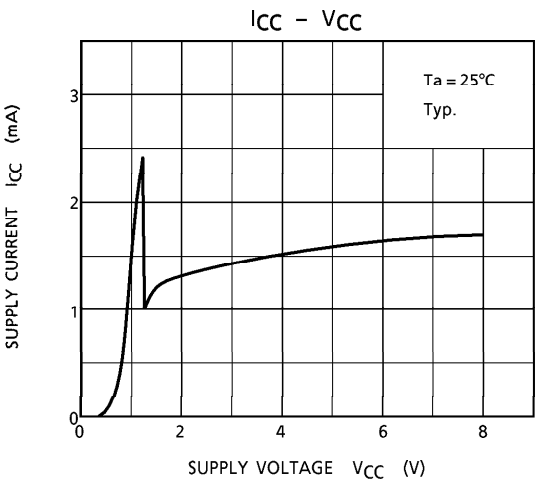
(*2) $V_{T+} = \frac{R_1 + R_2}{R_1} \times 1.31$ (V)

(*3) $V_{T-} = \frac{R_1 + R_2}{R_1} \times (1.31 - R_1 \times 10^{-5})$ (V)

(*4) $T_{w1} = G_t \cdot (V_{ref} - 0V) / I_{CT}$ ($I_{CT} = 23 \mu A$)

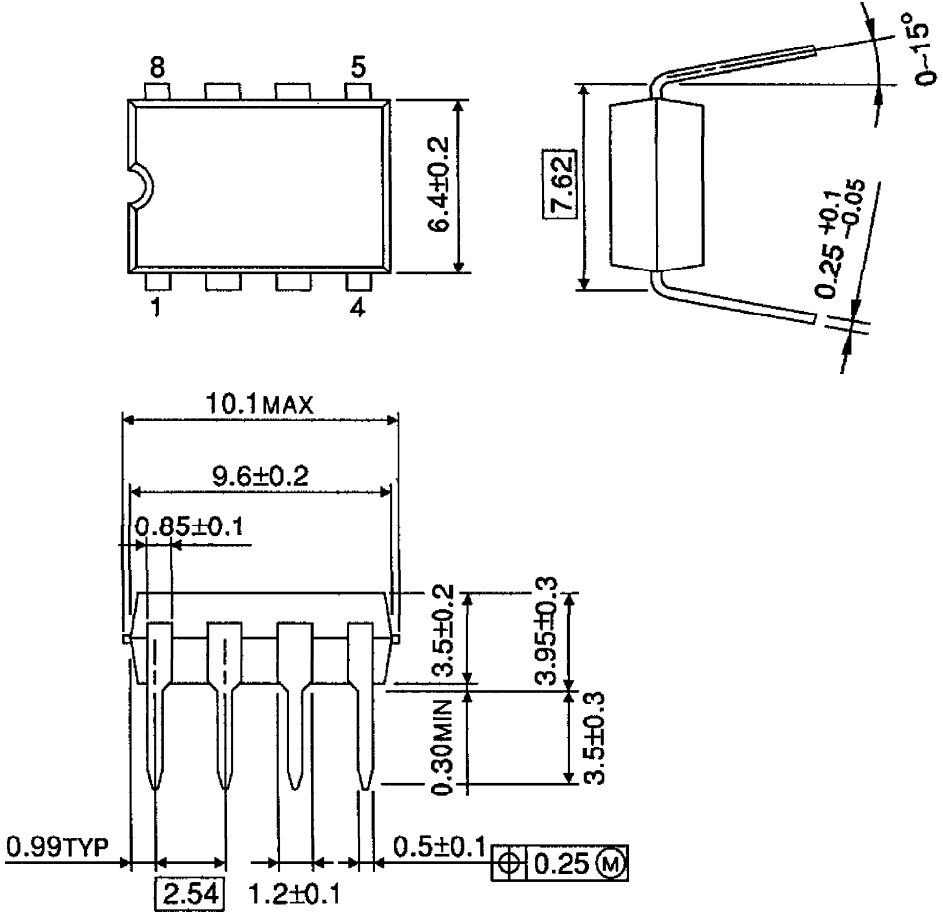
(*5) $T_{w2} = G_t \cdot (V_{ref} - 1V) / I_{CT}$





OUTLINE DRAWING
DIP8-P-300-2.54A

Unit : mm



Weight : 0.5g (Typ.)