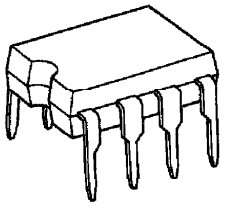
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

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.



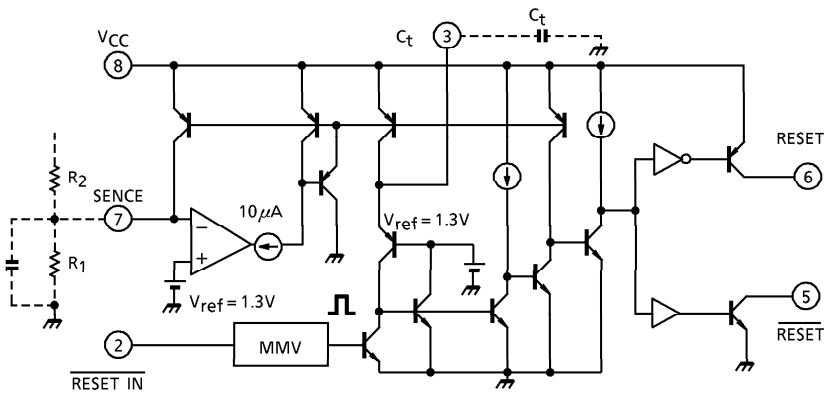
DIP8-P-300-2.54A

Weight : 0.5g (Typ.)

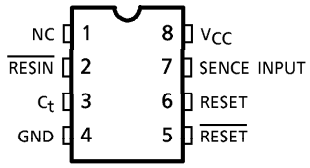
FEATURES

- 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} = 20mA (Max.)

BLOCK DIAGRAM



PIN CONNECTION (TOP VIEW)



961001EBA2

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	36	V
Breakdown Voltage	$\overline{RESIN}$	36	V
	SENCE		
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	$\overline{RESIN}$	V_{IH}	—	2.0	—	V_{CC}	V
	"L" Level	$\overline{RESIN}$	V_{IL}	—	0	—	0.6	
Output Current		RESET	I_{OH}	—	0	—	− 1	mA
		$\overline{RESET}$	I_{OL}	—	0	—	16	
Operation Temperature			T_{opr}	—	0	—	70	°C

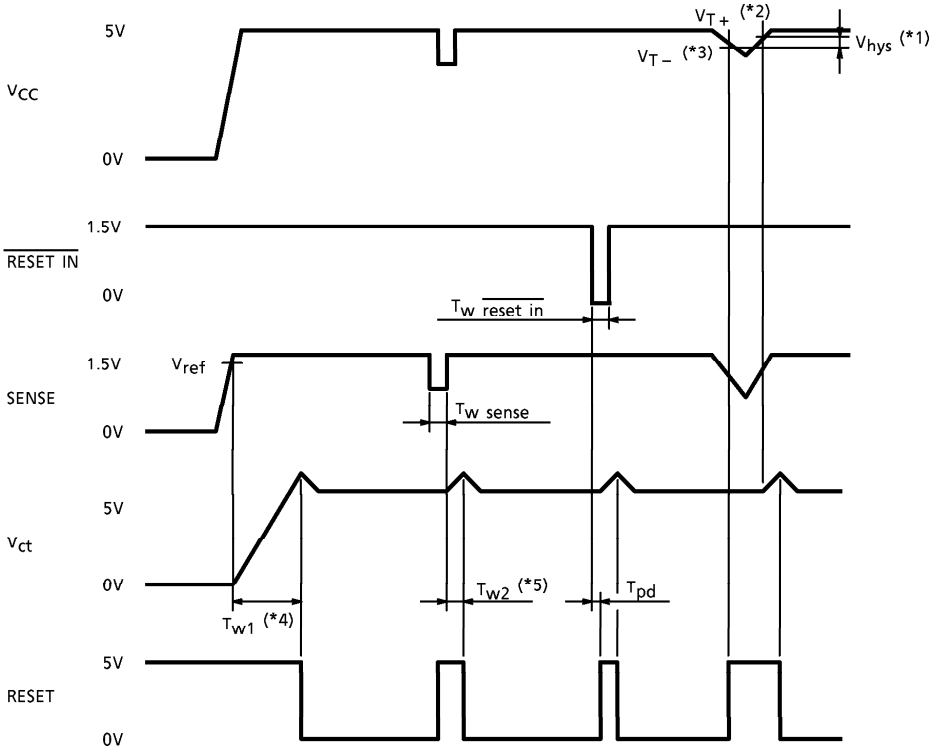
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC			SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Input Current	"H" Level	$\overline{RESIN}$	I_{IH}	—	V_{CC} = 5.0V	V_{IN} = 2.0V	—	—	2	μA
		SENSE				V_{IN} = 1.5V	− 8	− 12	− 16	
	"L" Level	$\overline{RESIN}$	I_{IL}			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
		$\overline{RESET}$	V_{OL}			I_{OH} = 16mA	—	0.1	0.4	
Output Current		RESET	I_{OL}	—	V_{CC} = 5.0V	V_{OL} = 0V	—	—	− 2	μA
		$\overline{RESET}$	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, Ta = 25°C)

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

TIMING CHART



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

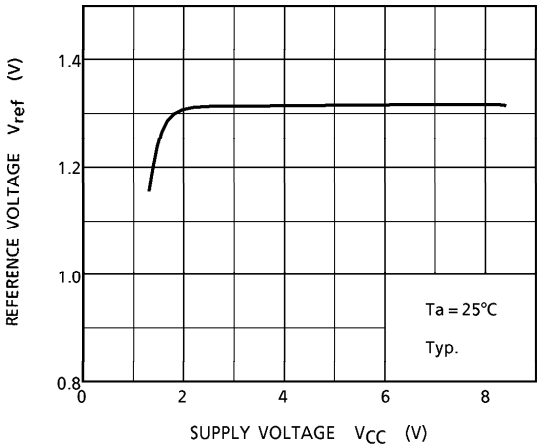
(*2) $V_{T+} = \dfrac{R_1 + R_2}{R_1} \times 1.31$ (V)

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

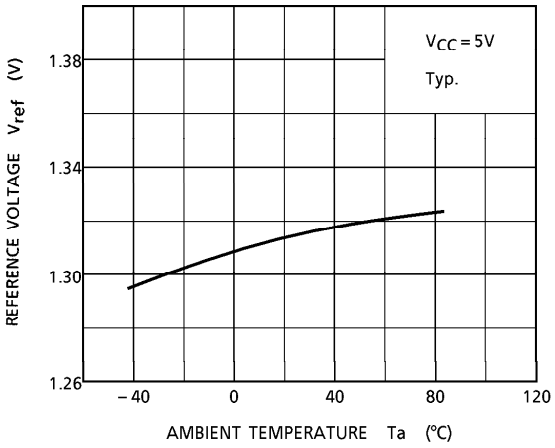
(*4) $T_{w1} = G_t \cdot (V_{ref} - 0V) / I_{CT}$ (I_{CT} = 23μA)

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

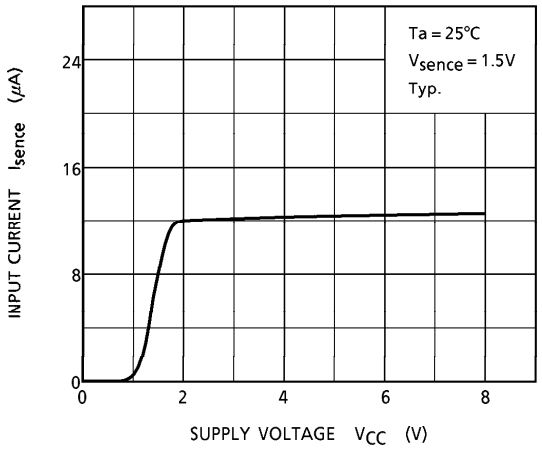
V_{ref} – V_{CC}



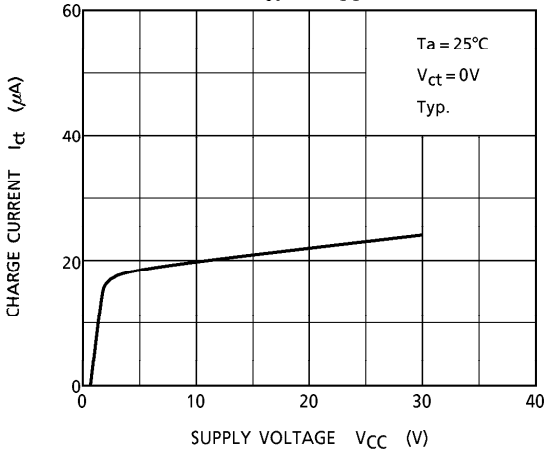
V_{ref} – Ta



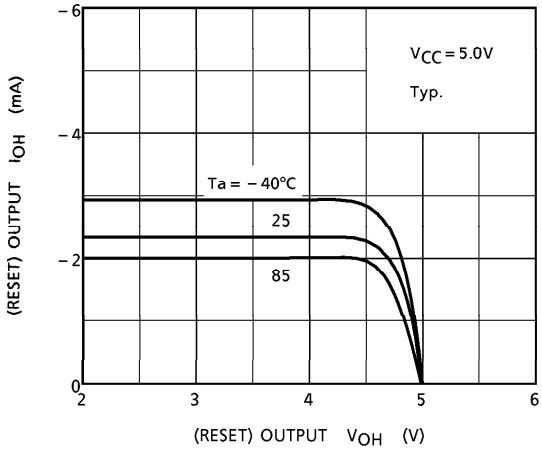
I_{sence} – V_{CC}



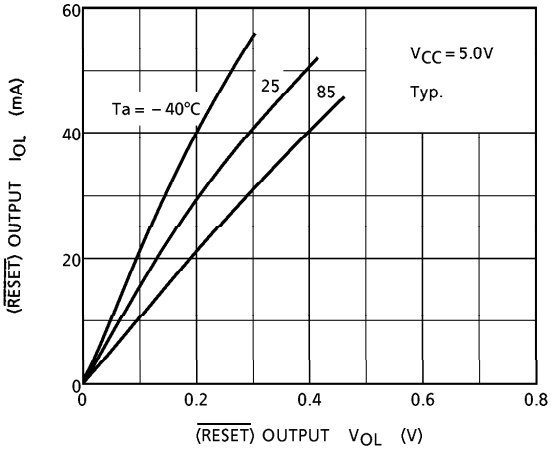
I_{ct} – V_{CC}

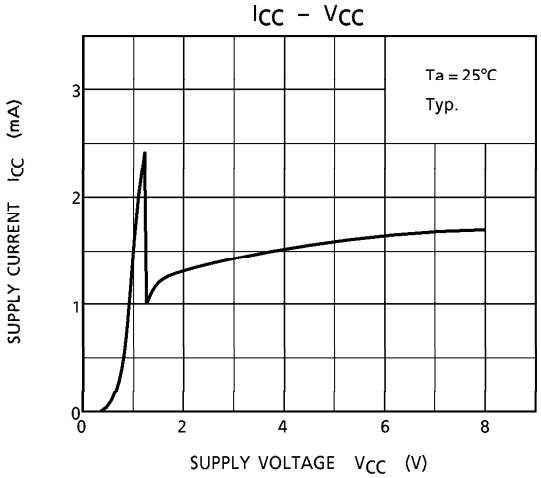


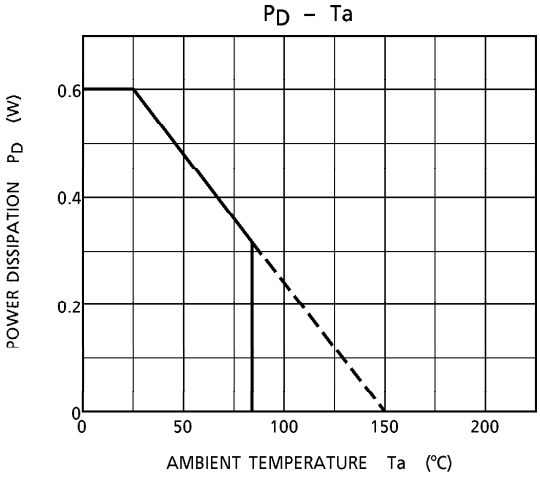
I_{OH} – V_{OH}



I_{OL} – V_{OL}



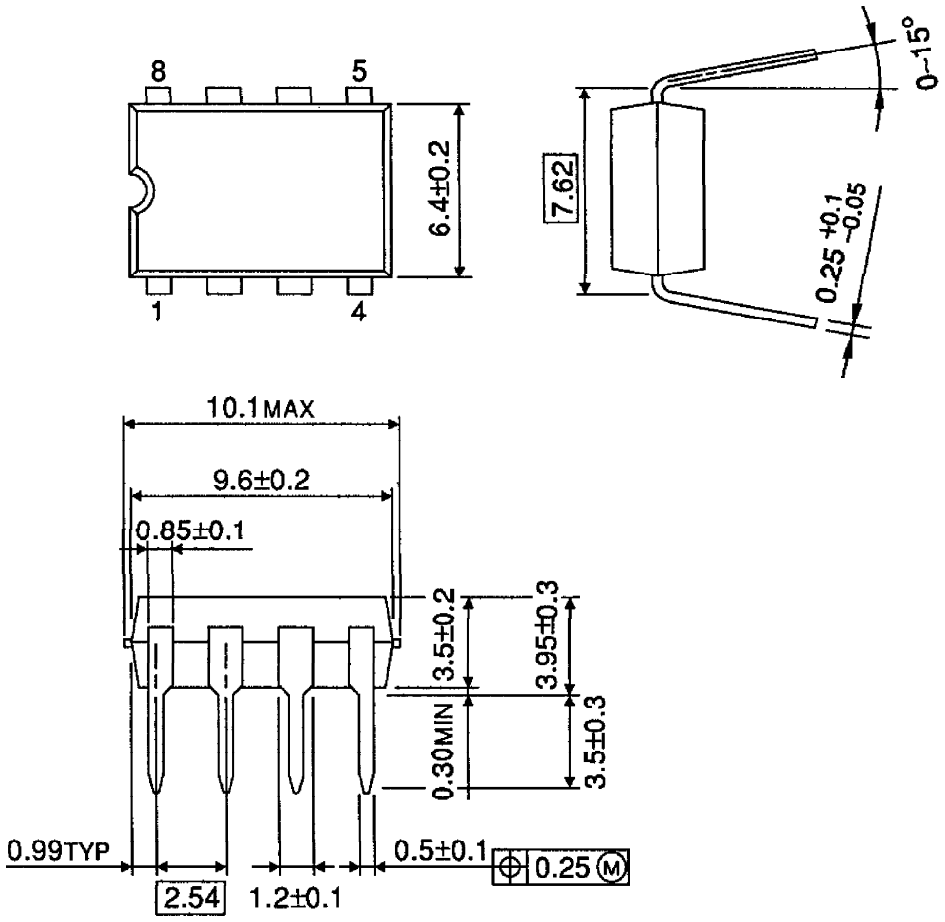

I_{CC} – V_{CC}
Ta = 25°C
Typ.
SUPPLY CURRENT I_{CC} (mA)
SUPPLY VOLTAGE V_{CC} (V)
0
1
2
3
0
2
4
6
8


P_D – Ta
POWER DISSIPATION P_D (W)
AMBIENT TEMPERATURE Ta (°C)
0
0.2
0.4
0.6
0
50
100
150
200

OUTLINE DRAWING

DIP8-P-300-2.54A

Unit : mm



Weight : 0.5g (Typ.)