

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA75S393F

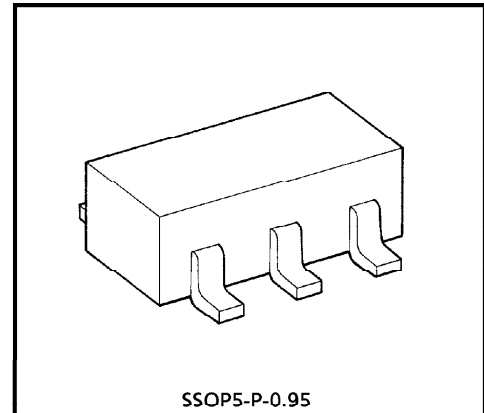
SINGLE VOLTAGE COMPARATOR

This device of voltage comparator 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 $\pm 1V$ to $\pm 18V$.

V_{CC} is necessary at least more 1.5V volts than the input common mode voltage.

The output can be connected to other open collector outputs to achieve Wired-OR relation ship.



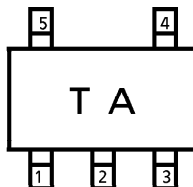
SSOP5-P-0.95

Weight : 0.014g (Typ.)

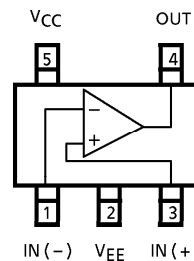
FEATURES

- Compatible to TA75393.
- Small Package
- Single supply voltage range or dual supplies : $2V_{DC}$ to $36V_{DC}$ or $\pm 1V_{DC}$ to $\pm 18V_{DC}$
- Low supply current : 0.4mA (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 relation.

MARKING (TOP VIEW)



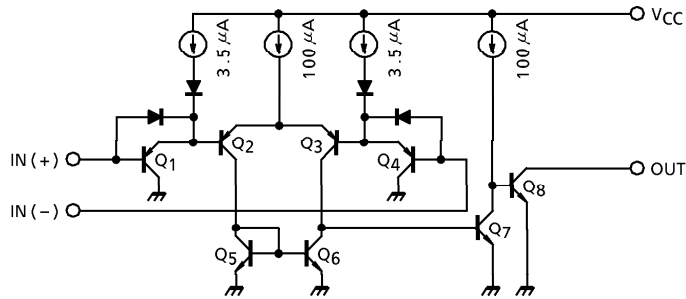
PIN CONNECTION (TOP VIEW)



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EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

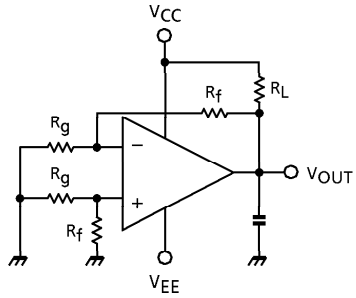
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}, V_{EE}	± 18 or 36	V
Differential Input Voltage	DV_{IN}	± 36	V
Input Voltage	V_{IN}	$-0.3 \sim V_{CC}$	V
Power Dissipation	P_D	200	mW
Operating Temperature	T_{opr}	$-40 \sim 85$	°C
Storage Temperature	T_{stg}	$-55 \sim 125$	°C

ELECTRICAL CHARACTERISTICS ($V_{CC} = 5V, V_{EE} = GND, Ta = 25^\circ C$)

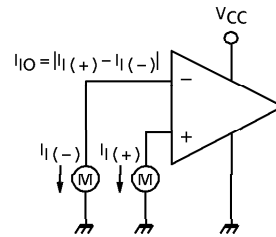
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	1	—	—	2	5	mV
Input Bias Current	I_{IO}	2	—	—	5	50	nA
Input Offset Current	I_I	2	—	—	25	250	nA
Common Mode Input Voltage	CMV_{IN}	—	—	0	—	$V_{CC} - 1.5$	V
Supply Current	I_{CC}	3	No load	—	0.4	0.8	mA
Voltage Gain	G_V	—	$R_L = 15k\Omega$	—	200	—	V/mA
Sink Current	I_{sink}	4	$IN(+) = 0V, IN(-) = 1V$ $V_{OL} = 1.5V$	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}	—	$IN(+) = 1V, IN(-) = 0V$ $V_O = 5V$	—	0.1	—	nA
Response Time	t_{rsp}	6	$R_L = 5.1k\Omega, C_L = 15pF$	—	1.3	—	μs

TEST CIRCUIT

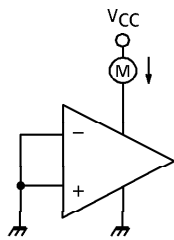
(1) V_{IO}



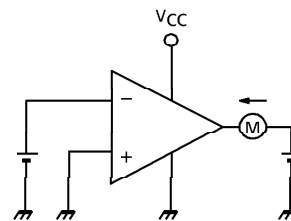
(2) I_I, I_{IO}



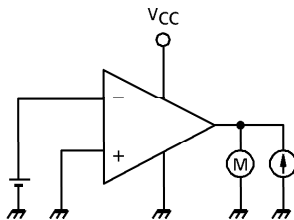
(3) I_{CC}



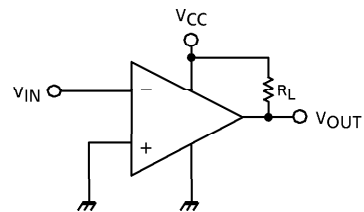
(4) I_{sink}

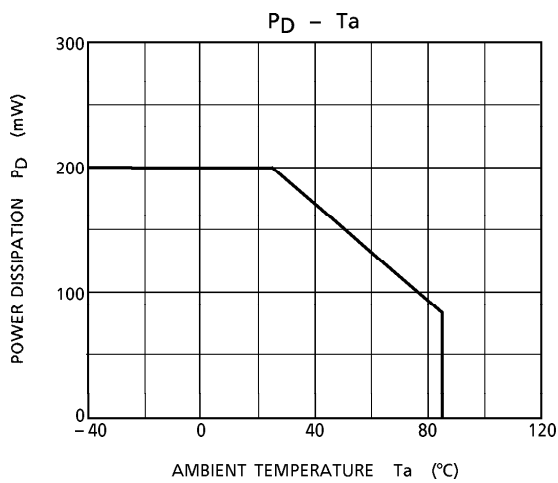
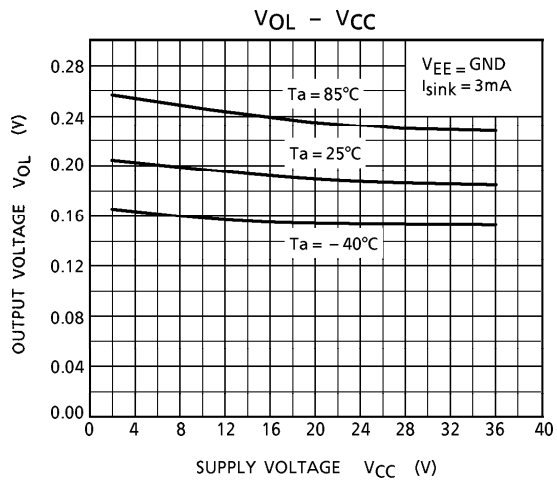
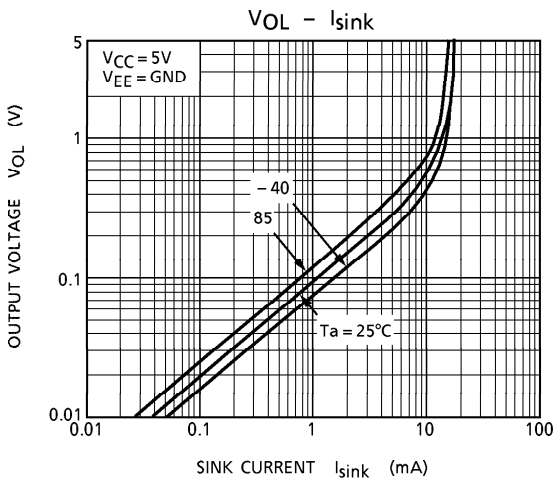
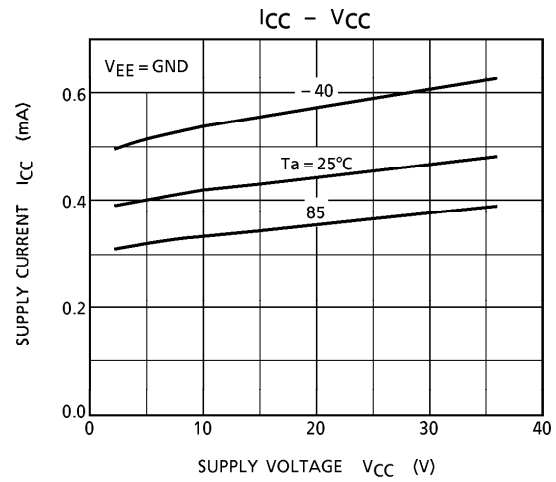
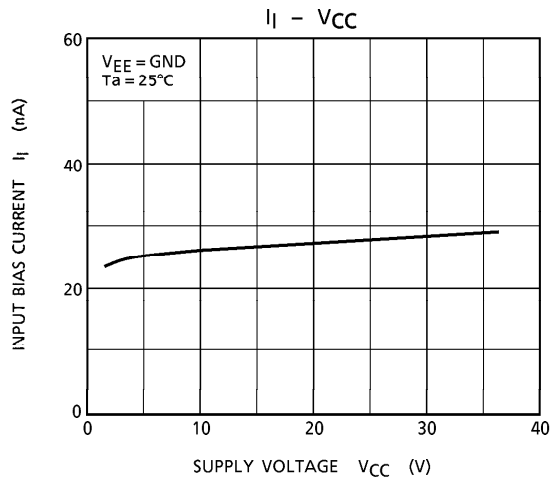


(5) V_{OL}



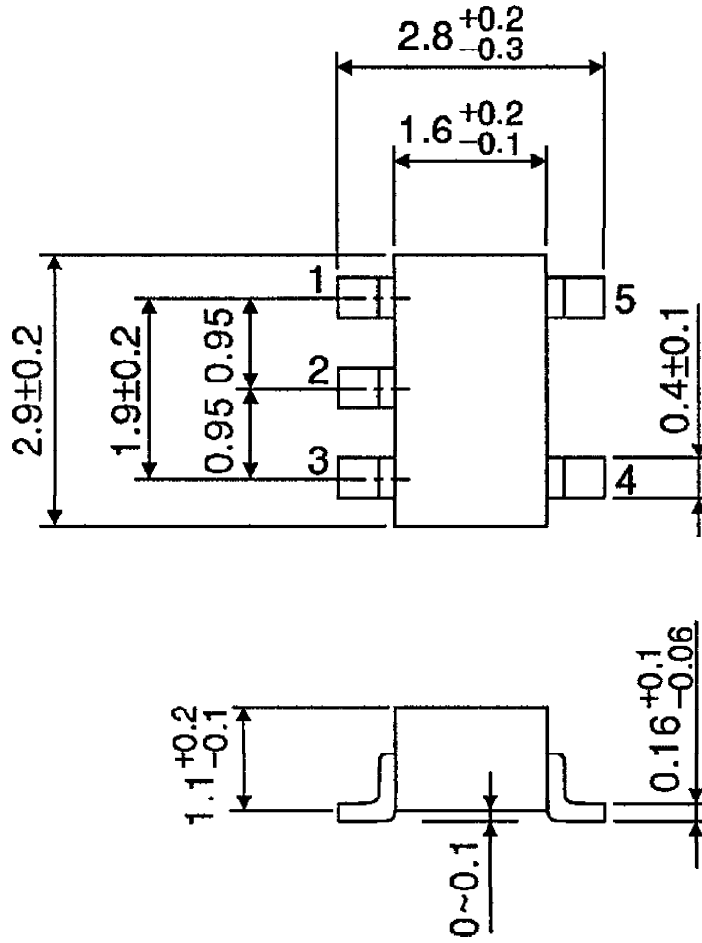
(6) t_{rsp}





OUTLINE DRAWING
SSOP5-P-0.95

Unit : mm



Weight : 0.014g (Typ.)