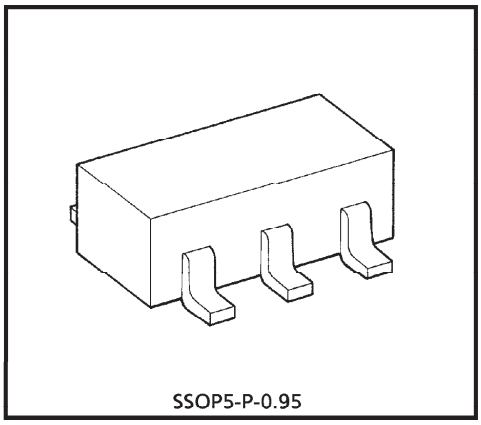
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

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 ±1V to ±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.



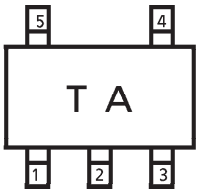
SSOP5-P-0.95

Weight : 0.014g (Typ.)

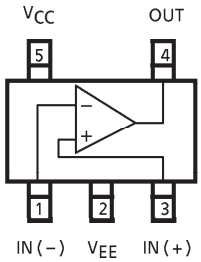
FEATURES

- 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 : ±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.

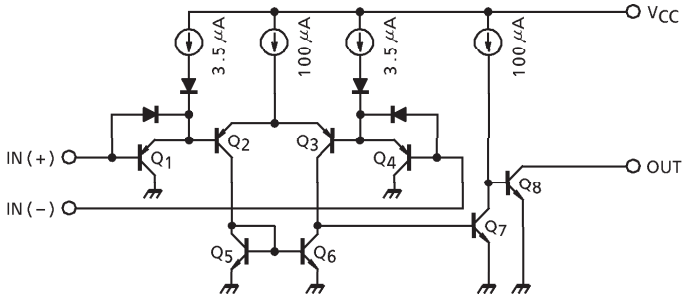
MARKING (TOP VIEW)



PIN CONNECTION (TOP VIEW)



EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

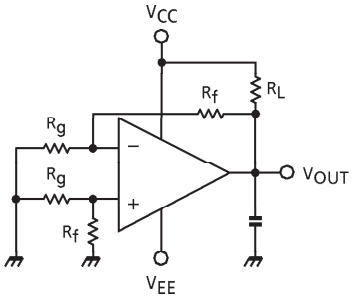
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}, V_{EE}	±18 or 36	V
Differential Input Voltage	DV_{IN}	±36	V
Input Voltage	V_{IN}	−0.3~V_{CC}	V
Power Dissipation	P_D	200	mW
Operating Temperature	T_{opr}	−40~85	°C
Storage Temperature	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 5V, V_{EE} = GND, Ta = 25°C)

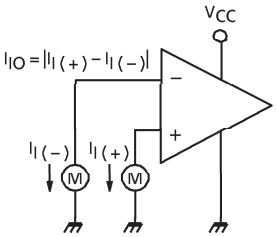
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	1	—	—	2	5	mV
Input Bias Current	I_{IO}	2	—	—	5	50	nA
Input Offset Current	I_I	2	—	—	25	250	nA
Common Mode Input Voltage	CMV_{IN}	—	—	0	—	V_{CC} − 1.5	V
Supply Current	I_{CC}	3	No load	—	0.4	0.8	mA
Voltage Gain	G_V	—	R_L = 15kΩ	—	200	—	V / mV
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 = 5.1kΩ, C_L = 15pF	—	1.3	—	μs

TEST CIRCUIT

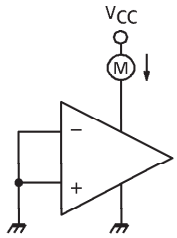
(1) V_{IO}



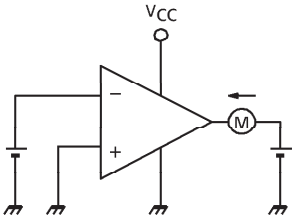
(2) I_I, I_{IO}



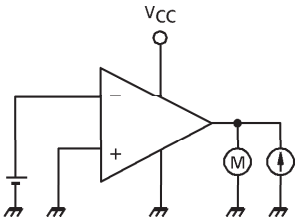
(3) I_{CC}



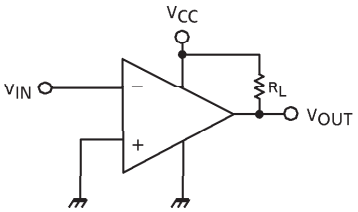
(4) I_{sink}



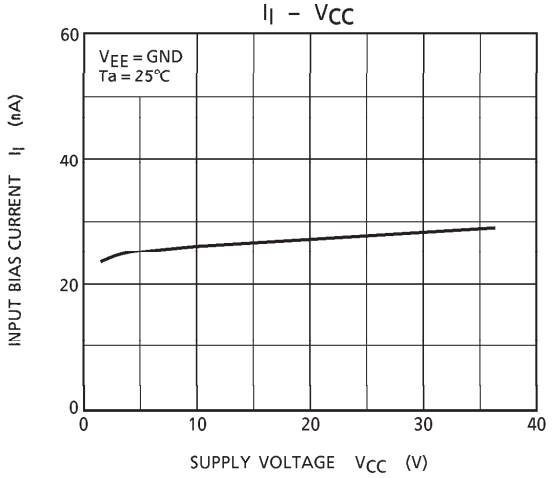
(5) V_{OL}



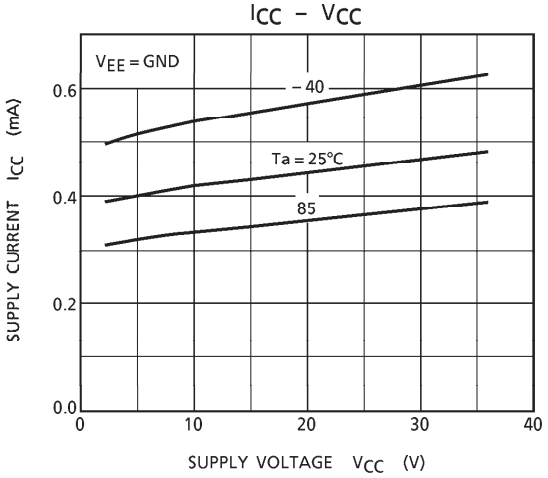
(6) t_{rsp}



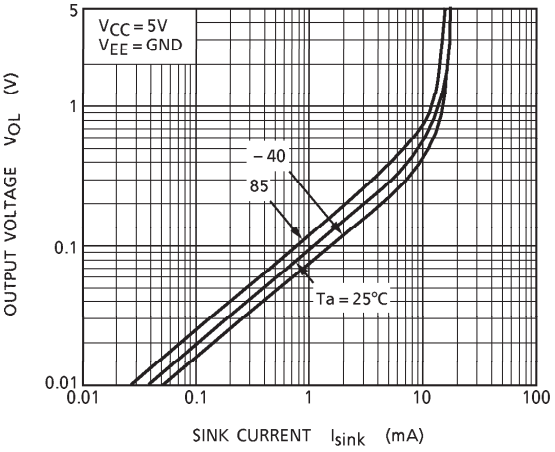
I_I – V_{CC}



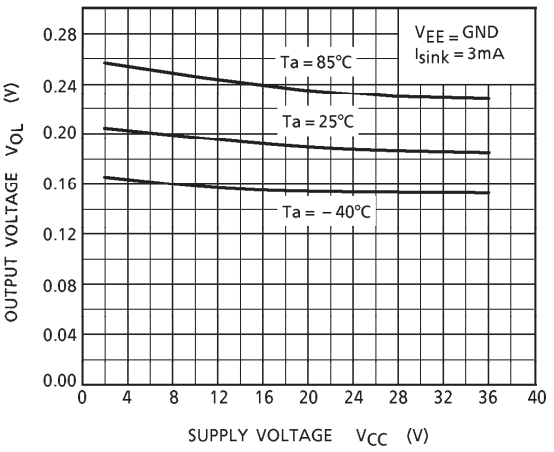
I_{CC} – V_{CC}



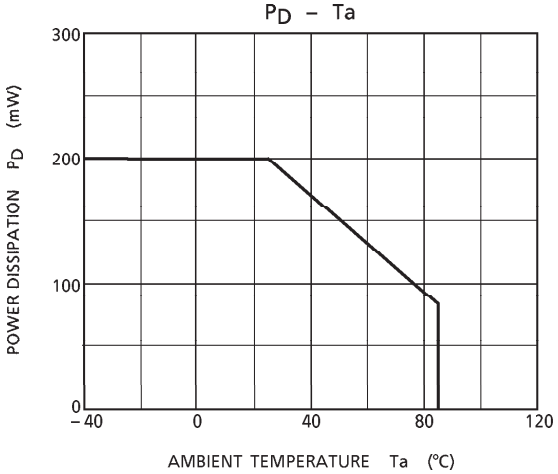
V_{OL} – I_{sink}



V_{OL} – V_{CC}



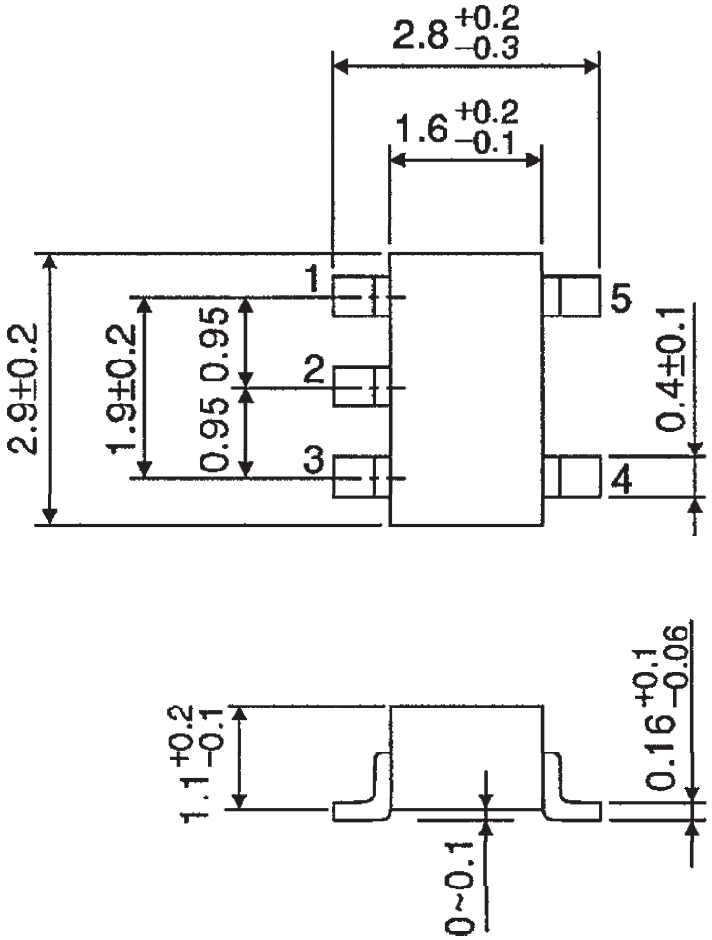
P_D – Ta



OUTLINE DRAWING

SSOP5-P-0.95

Unit : mm



Weight : 0.014g (Typ.)

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