

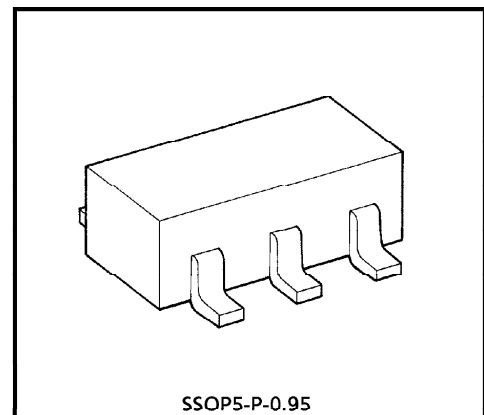
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA75S01F

## SINGLE OPERATIONAL AMPLIFIER

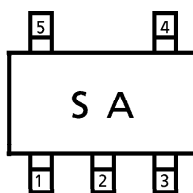
### FEATURES

- In the linear mode the input common mode voltage range includes ground.
- The internally compensated Operational Amplifier is small package.
- Low power dissipation and power drain suitable for battery operation.
- Differential input voltage range equal to the power supply voltage.
- Large output voltage swing :  $0V_{DC}$  to  $3.4V_{DC}$  ( $V_{DC} = 5V_{DC}$ )
- Wide power supply voltage range and single power supply is possible.
- Single supply  $3V_{DC}$  to  $12V_{DC}$  or dual supplies  $\pm 1.5V_{DC}$  to  $\pm 6V_{DC}$ .

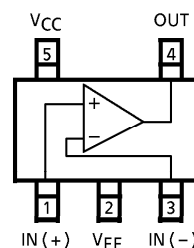


Weight : 0.014g (Typ.)

### MARKING (TOP VIEW)



### PIN CONNECTION (TOP VIEW)



961001EBA2

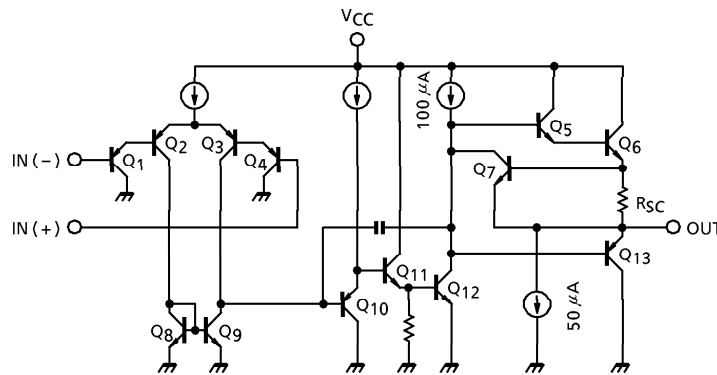
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EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

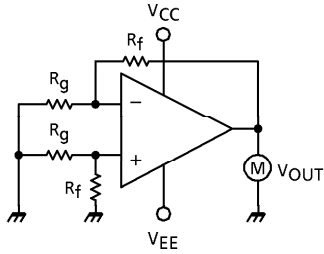
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub> , V <sub>EE</sub>	± 6 or 12	V
Differential Input Voltage	DV <sub>IN</sub>	± 12	V
Input Voltage	V <sub>IN</sub>	- 0.3~V <sub>CC</sub>	V
Power Dissipation	P <sub>D</sub>	200	mW
Operating Temperature	T <sub>opr</sub>	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 55~125	°C

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

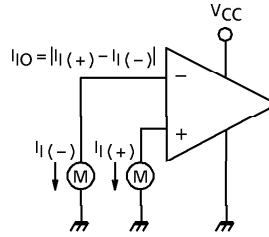
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	1	R <sub>g</sub> ≤ 10kΩ	—	2	7	mV
Input Offset Current	I <sub>IO</sub>	2	—	—	5	50	nA
Input Bias Current	I <sub>I</sub>	2	—	—	45	250	nA
Common Mode Input Voltage	CMV <sub>IN</sub>	3	—	0	—	V <sub>CC</sub> - 1.5	V
Supply Current	I <sub>CC</sub>	4	—	—	0.4	0.8	mA
Voltage Gain	G <sub>V</sub>	—	R <sub>L</sub> ≥ 2kΩ	86	100	—	dB
Maximum Output Voltage Swing	V <sub>op-p</sub>	5	R <sub>L</sub> = 2kΩ	0	—	3.4	V
Common Mode Rejection Ratio	CMRR	3	—	65	85	—	dB
Supply Voltage Rejection Ratio	SVRR	—	R <sub>g</sub> = 10kΩ	65	100	—	dB
Source Current	I <sub>source</sub>	6	IN (-) = 0V, IN (+) = 1V	20	40	—	mA
Sink Current	I <sub>sink</sub>	7	IN (-) = 1V, IN (+) = 0V	10	20	—	mA
Unity Gain Cross Frequency	f <sub>T</sub>	—	—	—	0.3	—	MHz

TEST CIRCUIT

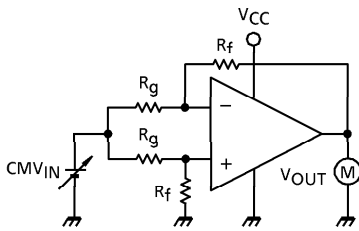
(1)  $V_{IO}$



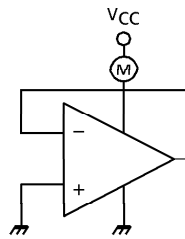
(2)  $I_I, I_{IO}$



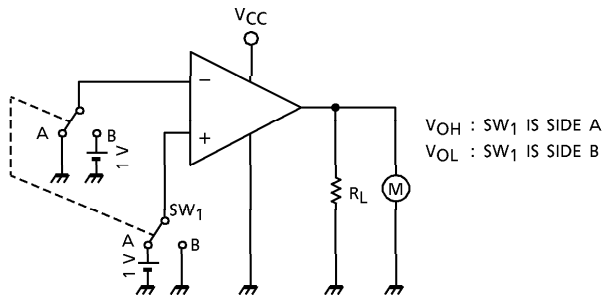
(3)  $CMV_{IN}, CMRR$



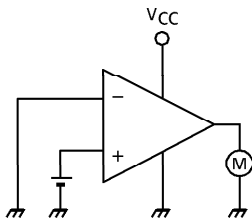
(4)  $I_{CC}$



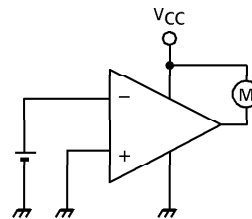
(5)  $V_{op-p}$

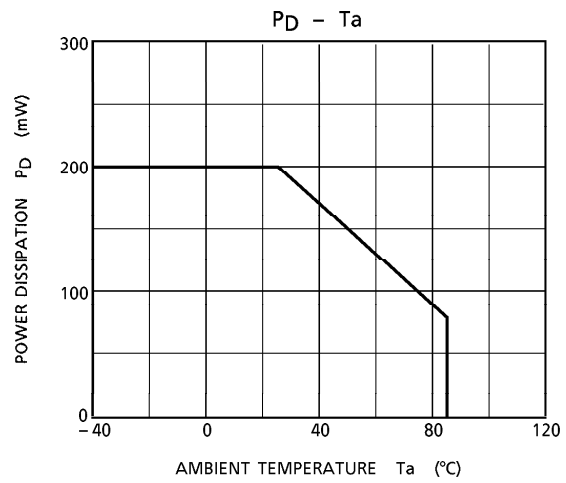
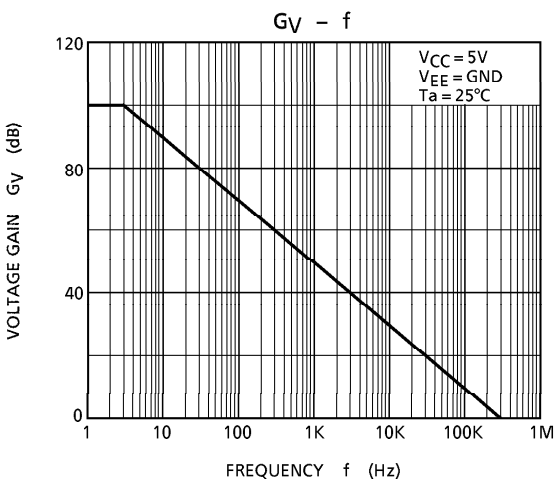
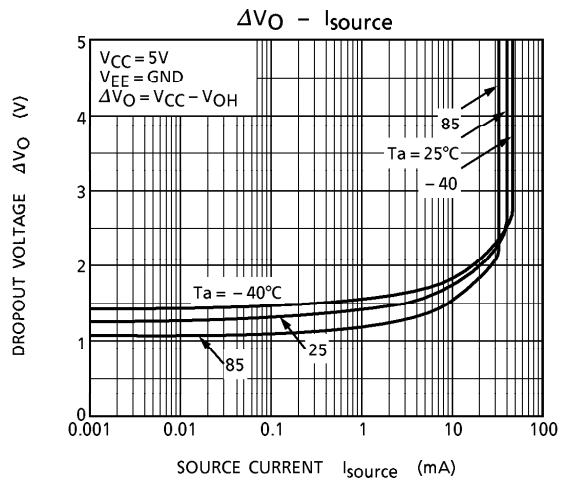
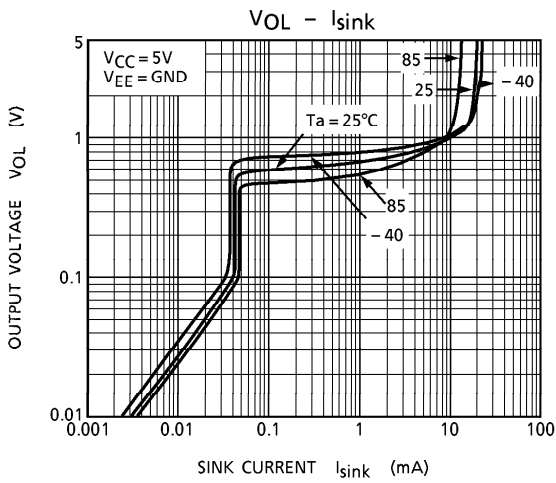
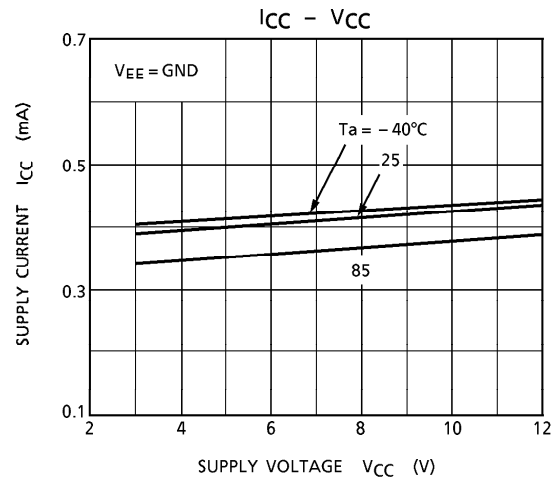
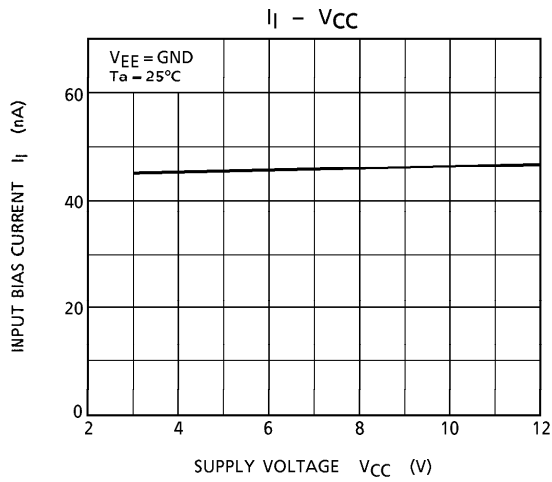


(6)  $I_{source}$



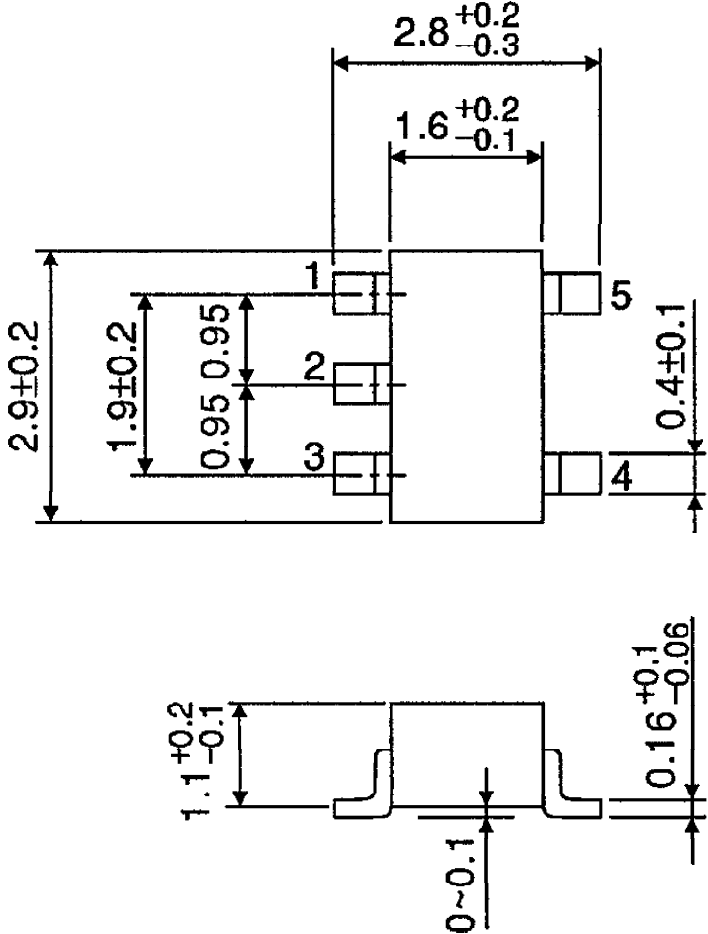
(7)  $I_{sink}$





OUTLINE DRAWING  
SSOP5-P-0.95

Unit : mm



Weight : 0.014g (Typ.)