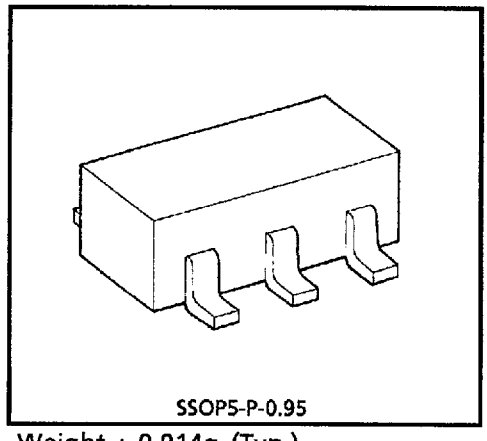
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA75S01F

SINGLE OPERATIONAL AMPLIFIER

FEATURES

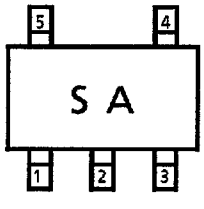
- In the linear mode the input common mode voltage range includes ground.
- The internally compensated Operational Amplifier is small package.
- Low power dissipation and power drain suitable for battery operation.
- Differential input voltage range equal to the power supply voltage.
- Large output voltage 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 $\pm 6V_{DC}$.



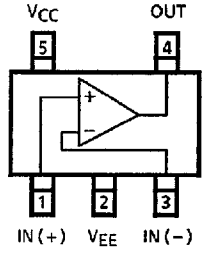
SSOP5-P-0.95

Weight : 0.014g (Typ.)

MARKING (TOP VIEW)

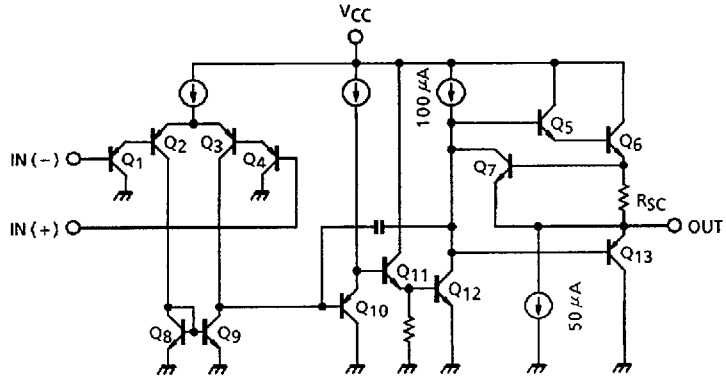


PIN CONNECTION (TOP VIEW)



961001EBA2

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

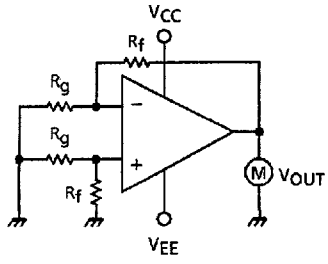
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}, V_{EE}	±6 or 12	V
Differential Input Voltage	DV_{IN}	±12	V
Input Voltage	V_{IN}	−0.3~V_{CC}	V
Power Dissipation	P_D	200	mW
Operating Temperature	T_{opr}	−40~85	°C
Storage Temperature	T_{stg}	−55~125	°C

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

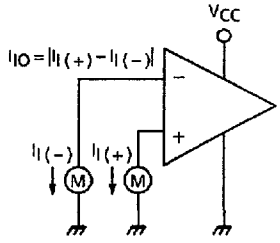
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	1	$R_g \leqq 10k\Omega$	—	2	7	mV
Input Offset Current	I_{IO}	2	—	—	5	50	nA
Input Bias Current	I_I	2	—	—	45	250	nA
Common Mode Input Voltage	CMV_{IN}	3	—	0	—	V_{CC} − 1.5	V
Supply Current	I_{CC}	4	—	—	0.4	0.8	mA
Voltage Gain	G_V	—	$R_L \geqq 2k\Omega$	86	100	—	dB
Maximum Output Voltage Swing	V_{op-p}	5	$R_L = 2k\Omega$	0	—	3.4	V
Common Mode Rejection Ratio	CMRR	3	—	65	85	—	dB
Supply Voltage Rejection Ratio	SVRR	—	$R_g = 10k\Omega$	65	100	—	dB
Source Current	I_{source}	6	IN(−) = 0V, IN(+) = 1V	20	40	—	mA
Sink Current	I_{sink}	7	IN(−) = 1V, IN(+) = 0V	10	20	—	mA
Unity Gain Cross Frequency	f_T	—	—	—	0.3	—	MHz

TEST CIRCUIT

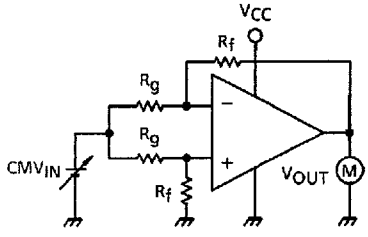
(1) V_{IO}



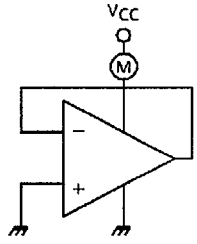
(2) I_I, I_{IO}



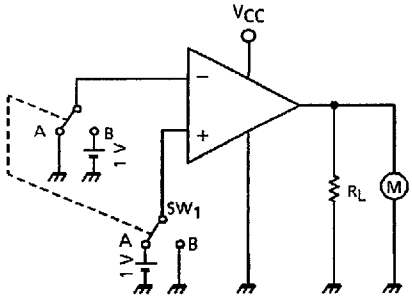
(3) CMV_{IN}, CMRR



(4) I_{CC}

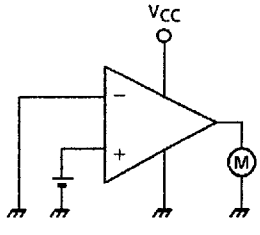


(5) V_{op-p}

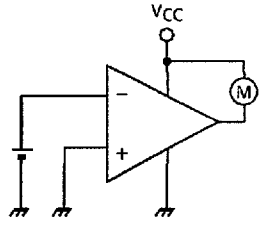


V_{OH} : SW_1 IS SIDE A
V_{OL} : SW_1 IS SIDE B

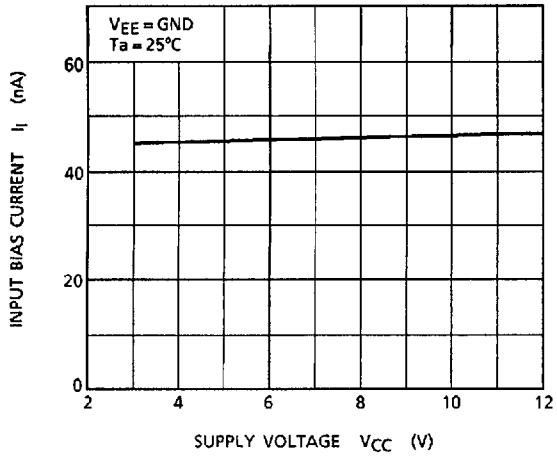
(6) I_{source}



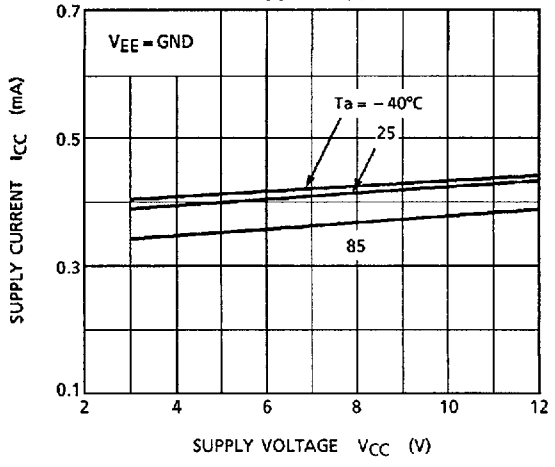
(7) I_{sink}



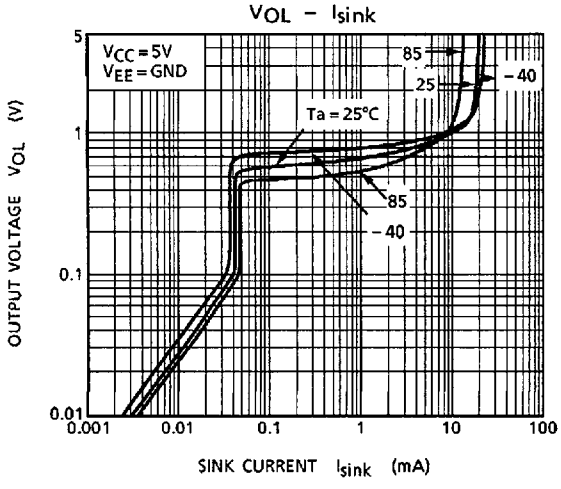
I_I – V_{CC}



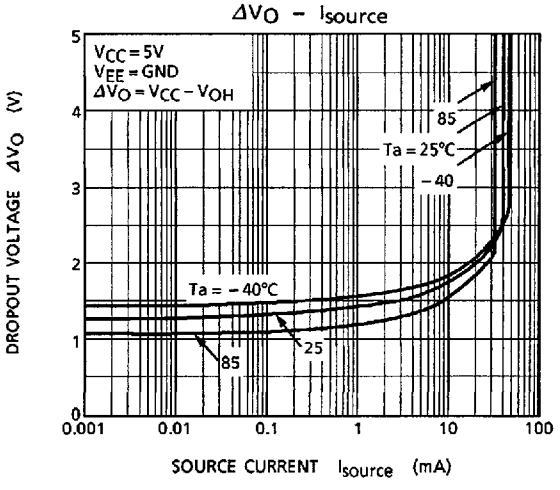
I_{CC} – V_{CC}



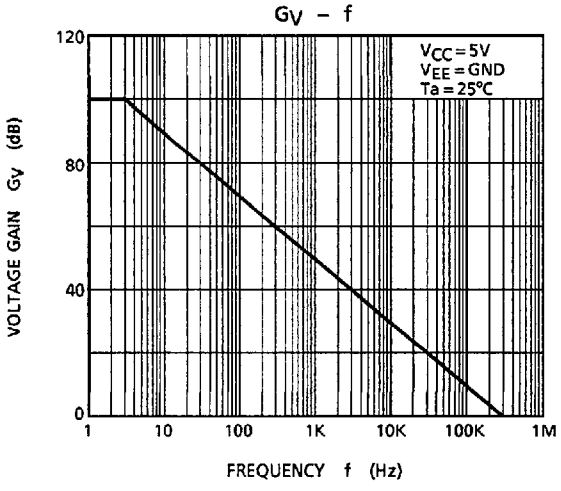
V_{OL} – I_{sink}



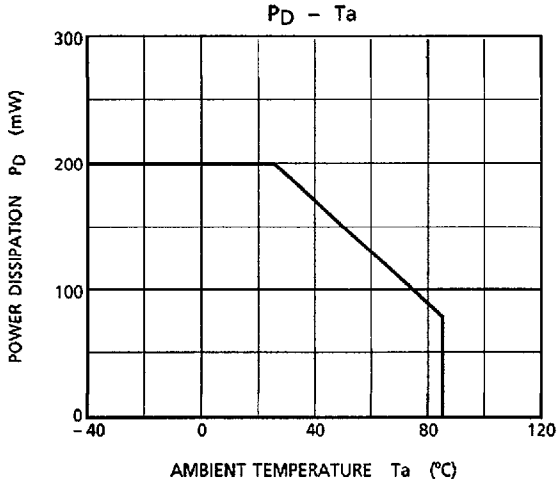
ΔV_O – I_{source}



G_V – f



P_D – Ta



OUTLINE DRAWING

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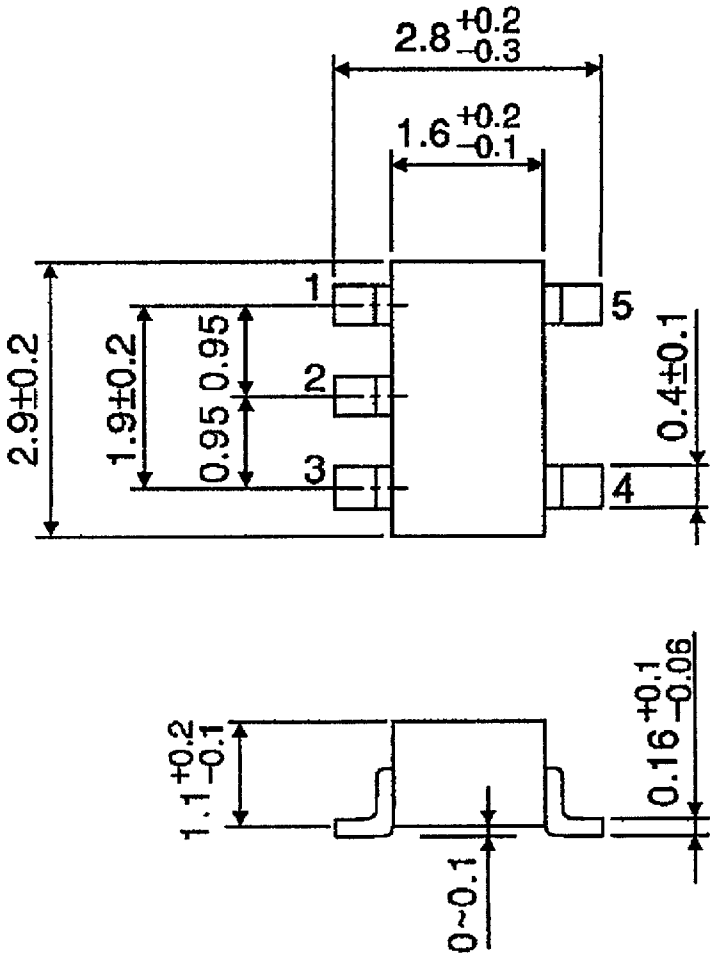
Unit : mm



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