

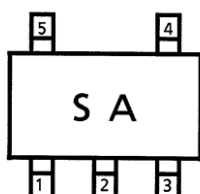
TA75S01F

Single Operational Amplifier

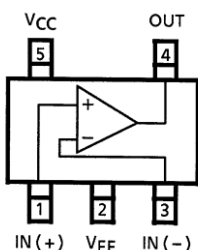
Features

- 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 $3.4V_{DC}$ ($V_{DC} = 5V$)
- 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 $\pm 6V_{DC}$.

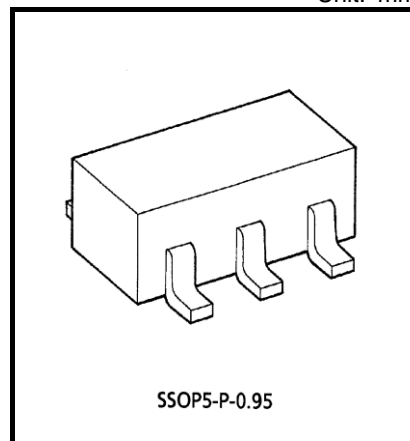
Marking (Top View)



Pin Connection (Top View)



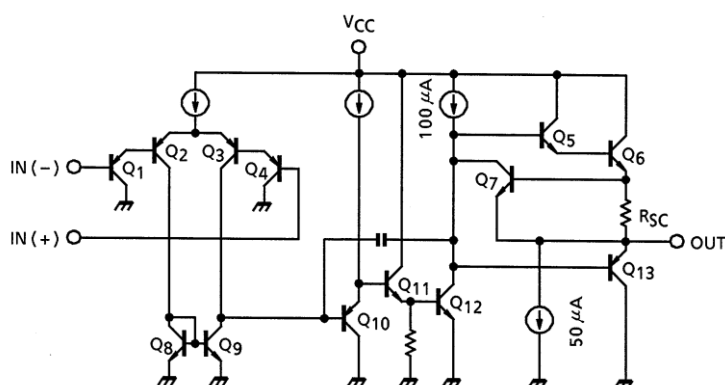
Unit: mm



Weight: 0.014g (typ.)

Start of commercial production
1991-02

Equivalent Circuit



Absolute 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 to V _{CC}	V
Power dissipation	P _D	200	mW
Operating temperature	T _{opr}	-40 to 85	°C
Storage temperature	T _{stg}	-55 to 125	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings and the operating ranges.

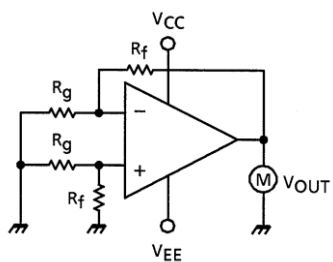
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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

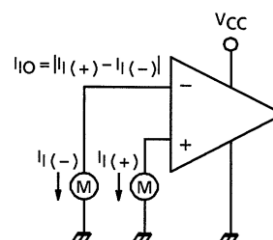
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Input offset voltage	V _{IO}	1	R _g ≤ 10kΩ	—	2	7	mV
Input offset current	I _{IO}	2	—	—	5	50	nA
Input bias current	I _I	2	—	—	45	250	nA
Common mode input voltage	CMV _{IN}	3	—	0	—	V _{CC} -1.5	V
Supply current	I _{CC}	4	—	—	0.4	0.8	mA
Voltage gain	G _V	—	R _L ≥ 2kΩ	86	100	—	dB
Maximum output voltage swing	V _{op-p}	5	R _L = 2kΩ	0	—	3.4	V
Common mode rejection ratio	CMRR	3	—	65	85	—	dB
Supply voltage rejection ratio	SVRR	—	R _g = 10kΩ	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

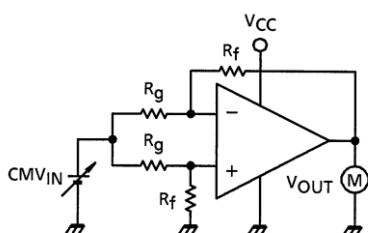
(1) V_{IO}



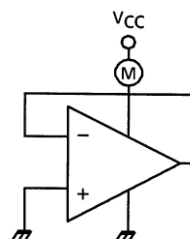
(2) I_I, I_{IO}



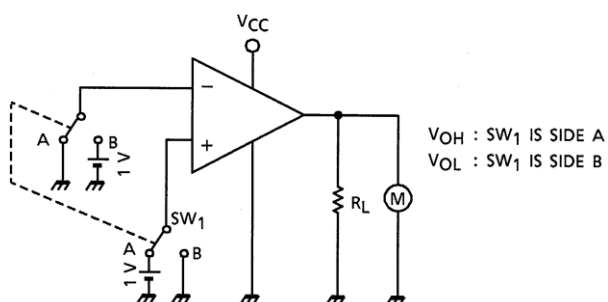
(3) $CMV_{IN}, CMRR$



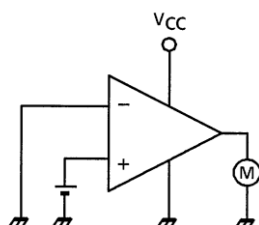
(4) I_{CC}



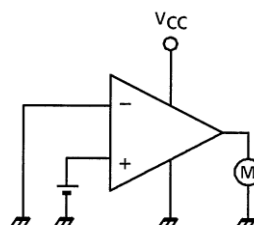
(5) V_{OP-P}

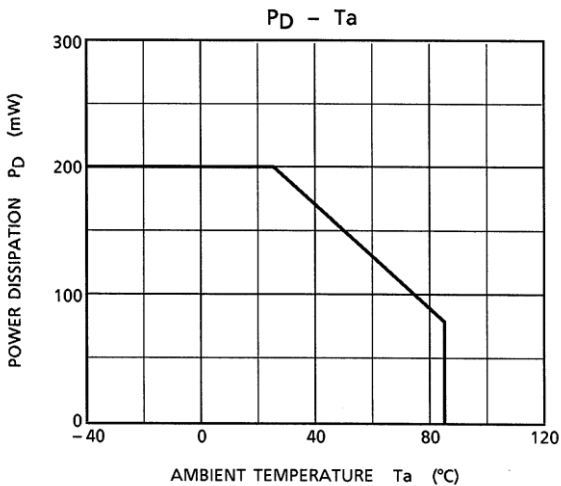
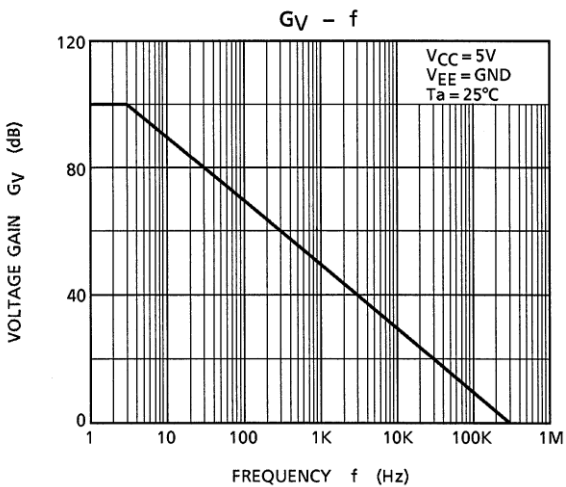
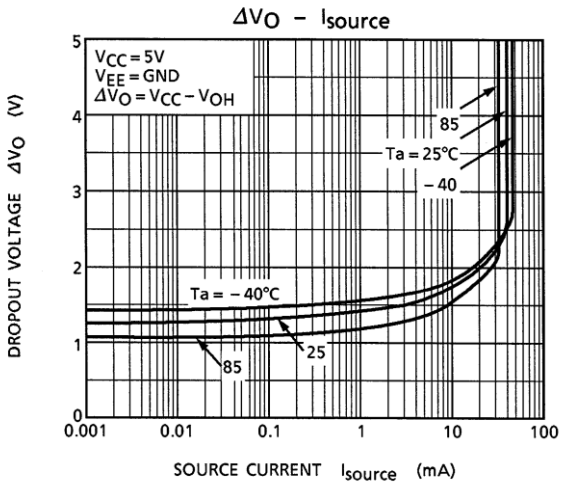
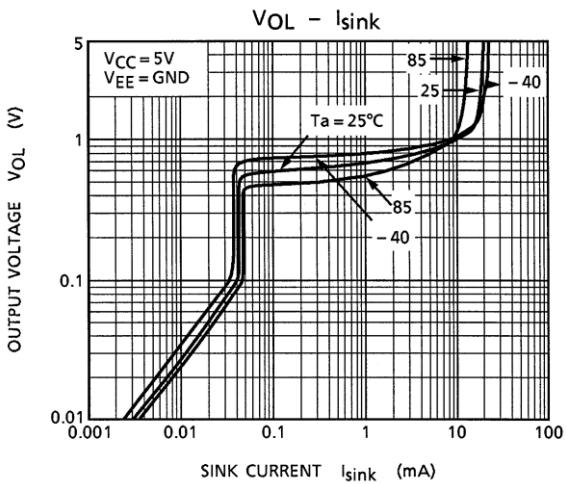
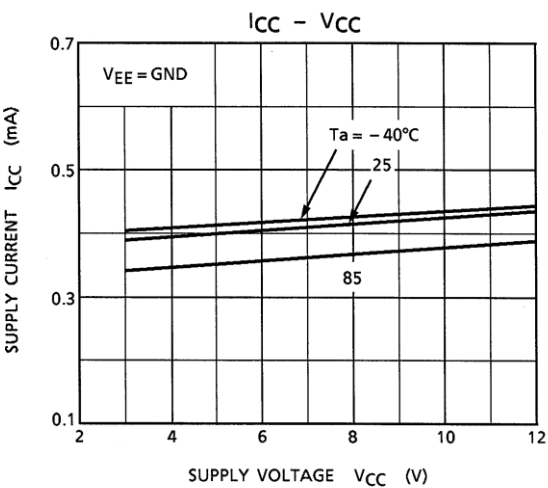
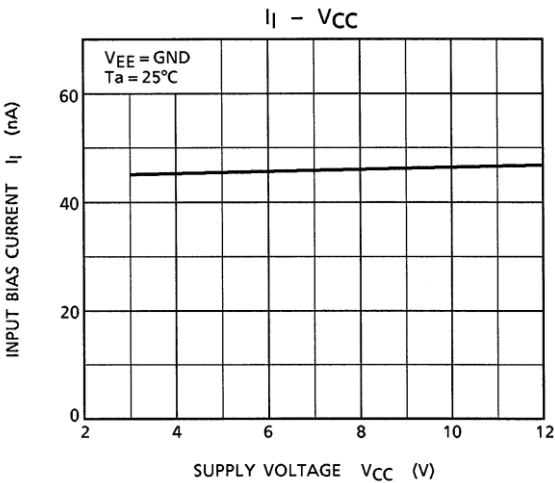


(6) I_{source}



(7) I_{sink}

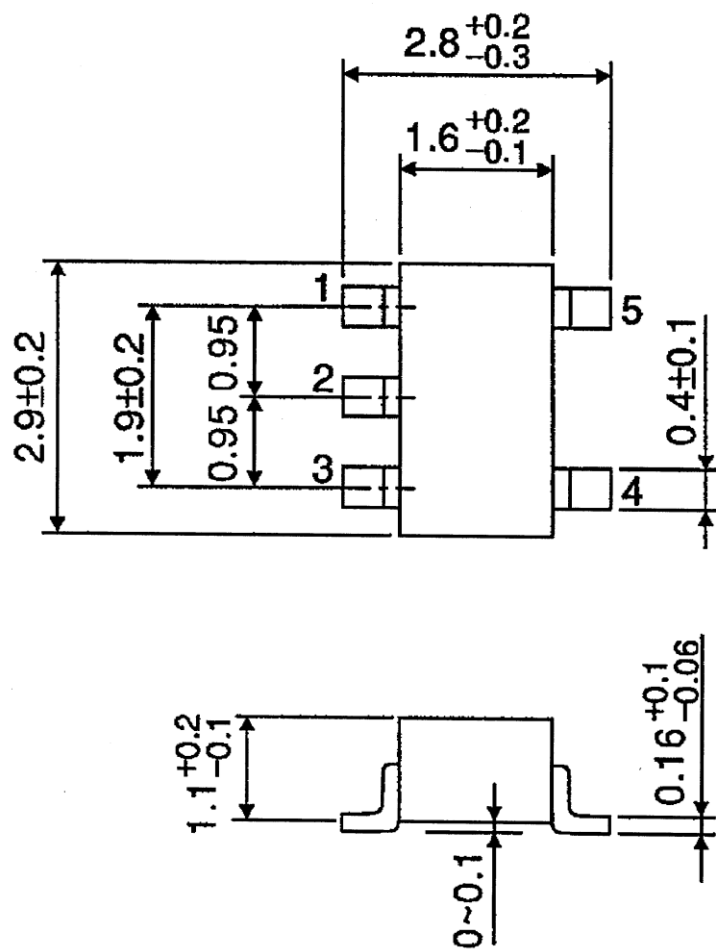




Package Dimensions

SSOP5-P-0.95

Unit: mm



Weight: 0.014g (typ.)

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