

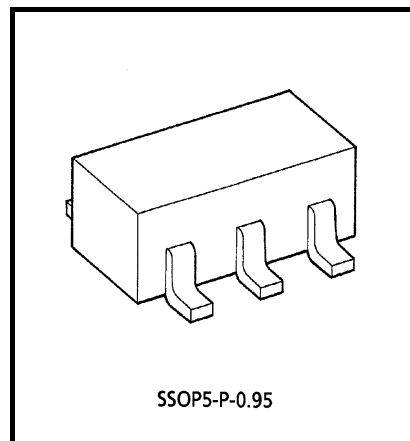
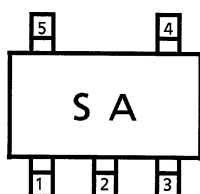
TA75S01F

Single Operational Amplifier

Features

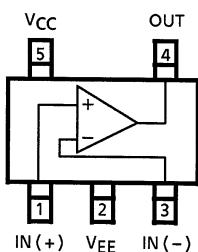
- In the linear mode the input common mode voltage range includes ground.
- The internally compensated Operational Amplifier is small package.
- Low power dissipation and power drain suitable for battery operation.
- Differential input voltage range equal to the power supply voltage.
- Large output voltage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

Marking (Top View)

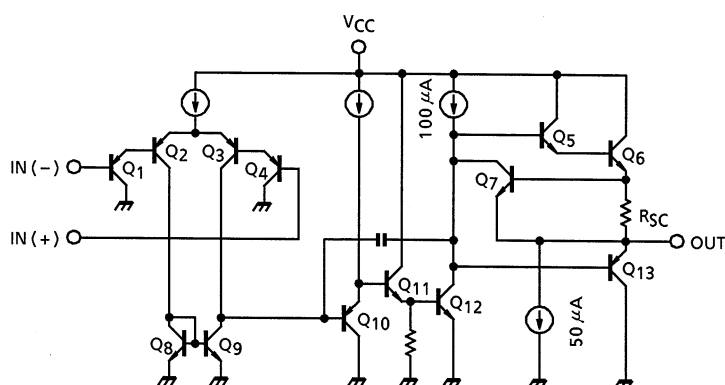


Weight: 0.014g (typ.)

Pin Connection (Top View)



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}	$-0.3 \sim V_{CC}$	V
Power dissipation	P_D	200	mW
Operating temperature	T_{opr}	$-40 \sim 85$	°C
Storage temperature	T_{stg}	$-55 \sim 125$	°C

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.

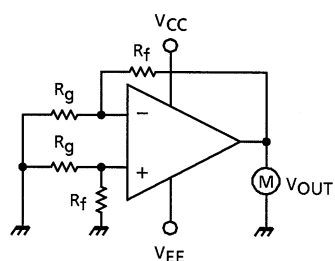
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical Characteristics ($V_{CC} = 5E$, $V_{EE} = GND$, $T_a = 25^\circ C$)

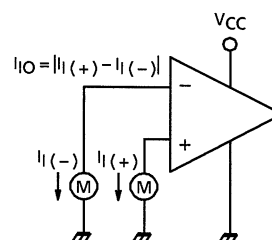
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Input offset voltage	V_{IO}	1	$R_g \leq 10k\Omega$	—	2	7	mV
Input offset current	I_{IO}	2	—	—	5	50	nA
Input bias current	I_I	2	—	—	45	250	nA
Common mode input voltage	CMV_{IN}	3	—	0	—	$V_{CC} - 1.5$	V
Supply current	I_{CC}	4	—	—	0.4	0.8	mA
Voltage gain	G_V	—	$R_L \geq 2k\Omega$	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

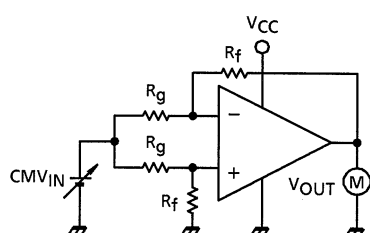
(1) V_{IO}



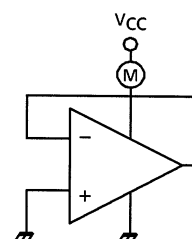
(2) I_I, I_{IO}



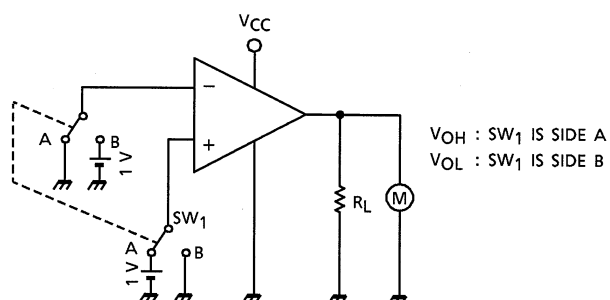
(3) $CMV_{IN}, CMRR$



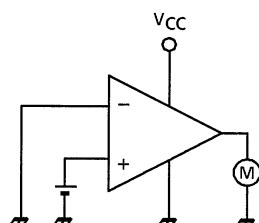
(4) I_{CC}



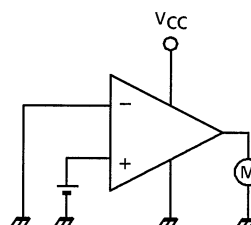
(5) V_{OP-P}

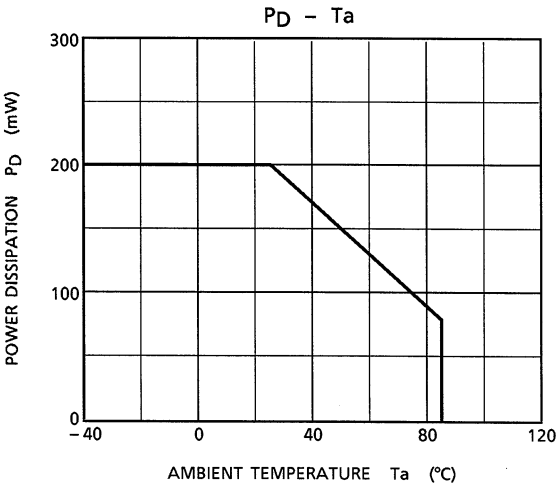
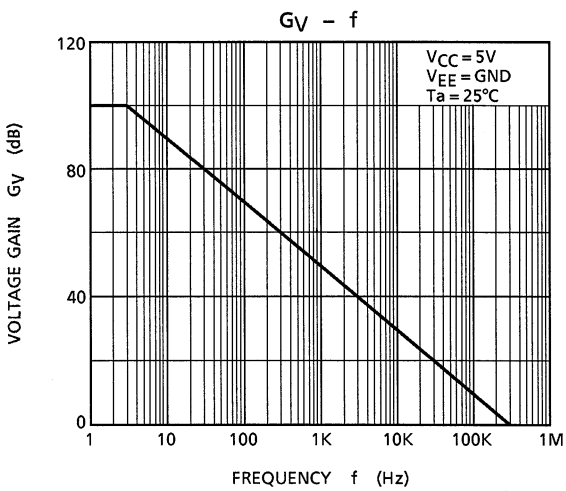
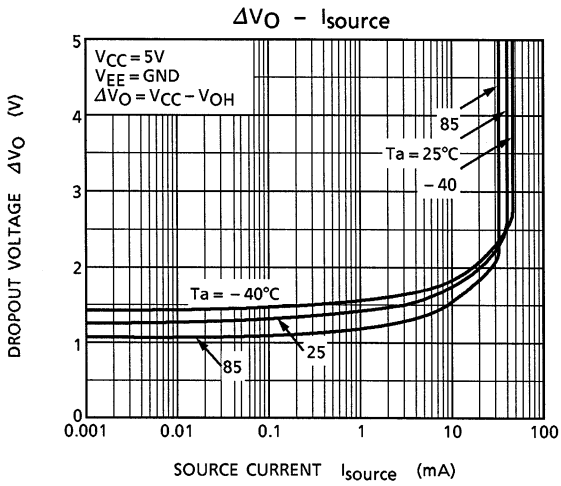
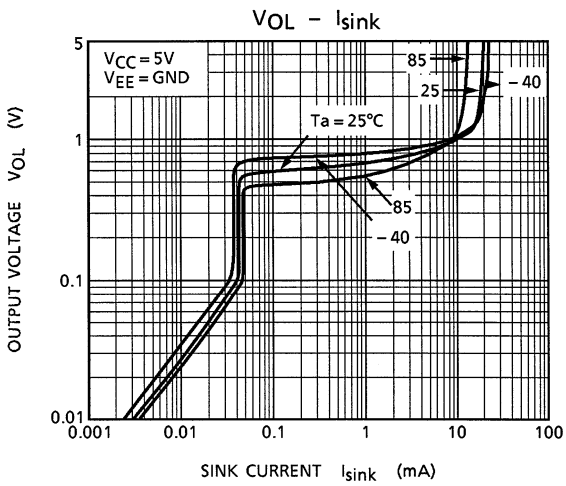
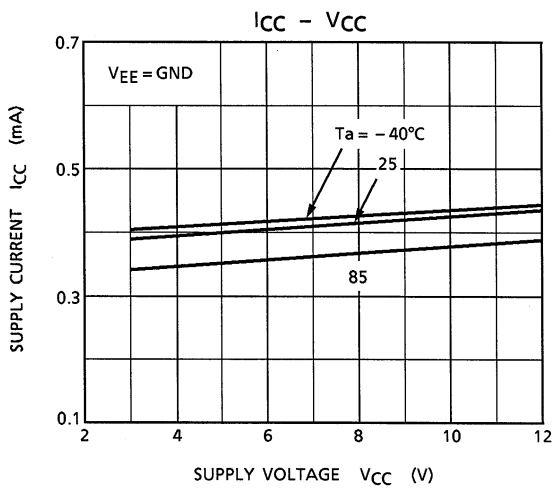
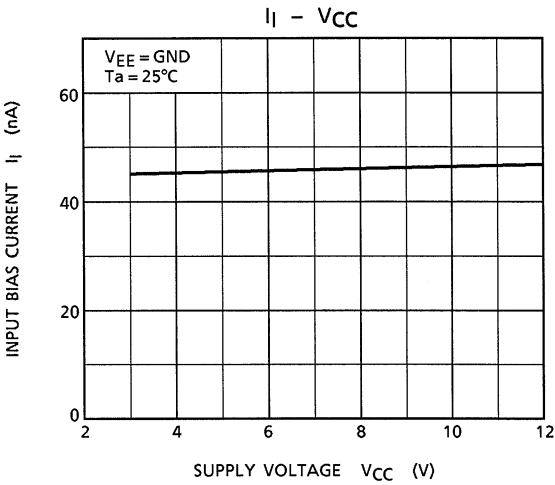


(6) I_{source}



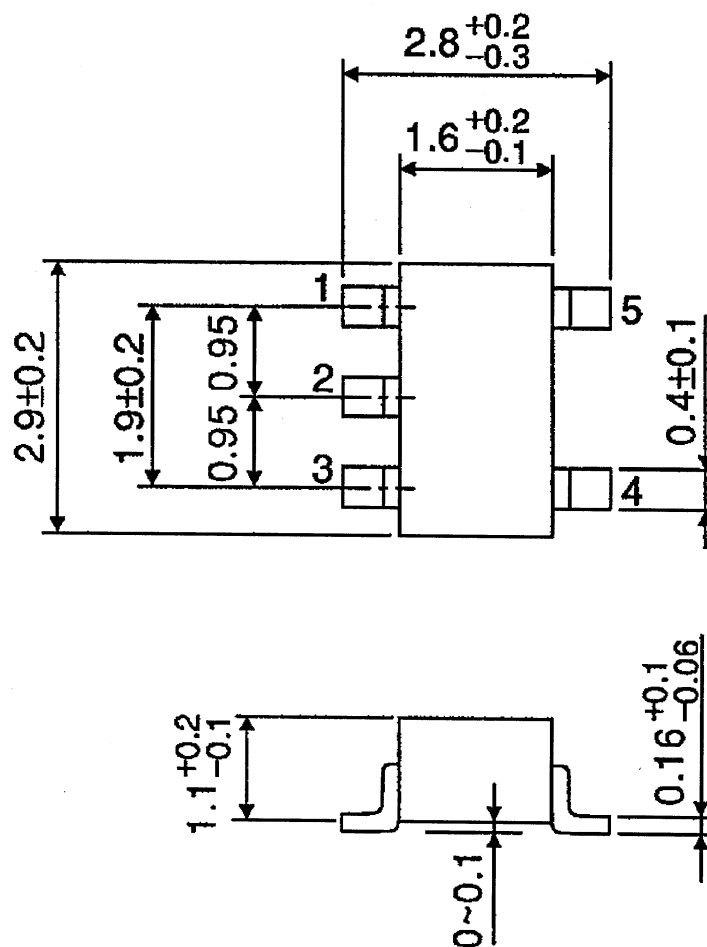
(7) I_{sink}





SSOP5-P-0.95

Unit: mm



Weight: 0.014g (typ.)

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