

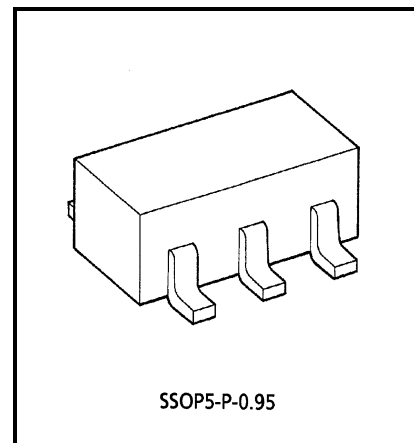
TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

TA75S01F

Single Operational Amplifier

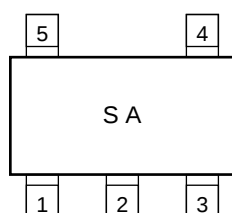
Features

- 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: 0 VDC to 3.4 VDC ($V_{CC} = 5\text{ V}$)
- Wide power supply voltage range and single power supply is possible.
- Single supply 3 VDC to 12 VDC or dual supplies $\pm 1.5\text{ VDC}$ to $\pm 6\text{ VDC}$.

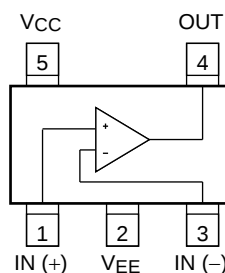


Weight: 0.014g (typ.)

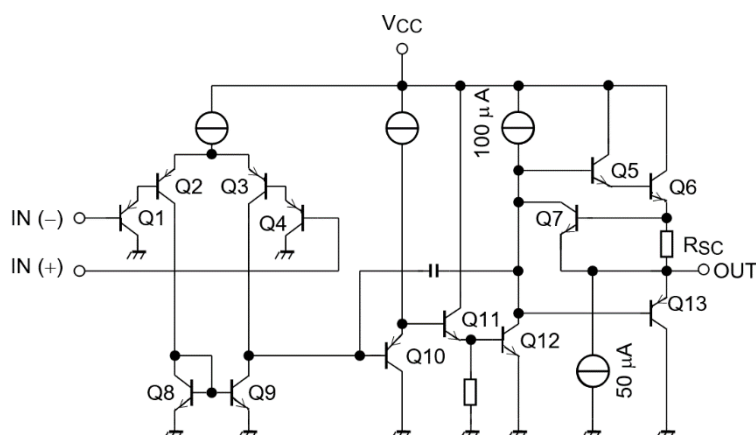
Marking (top view)



Pin Connection (top view)



Equivalent Circuit



Start of commercial production
1991-02

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.

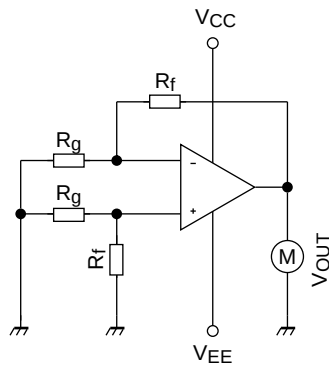
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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

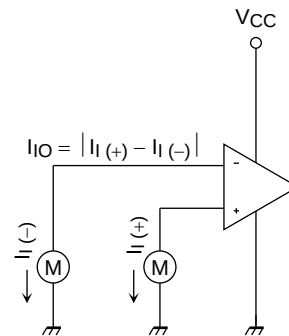
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Input offset voltage	V _{IO}	1	R _g ≤ 10kΩ	—	2	7	mV
Input offset current	I _{IO}	2	—	—	5	50	nA
Input bias current	I _I	2	—	—	45	250	nA
Common mode input voltage	CMV _{IN}	3	—	0	—	V _{CC} -1.5	V
Supply current	I _{CC}	4	—	—	0.4	0.8	mA
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

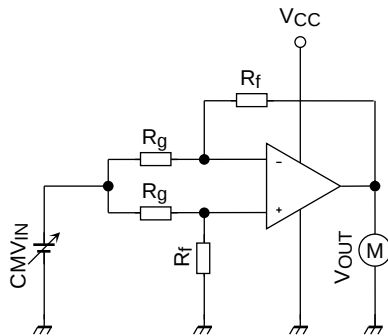
1. V_{IO}



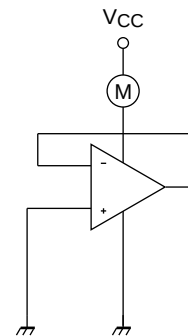
2. I_I, I_{IO}



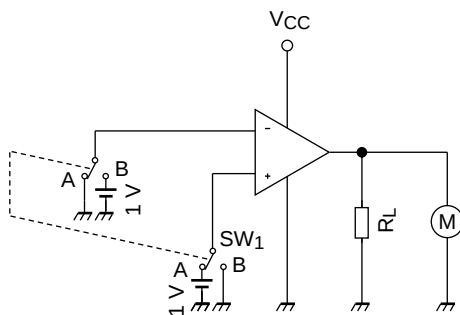
3. $CMV_{IN}, CMRR$



4. I_{CC}

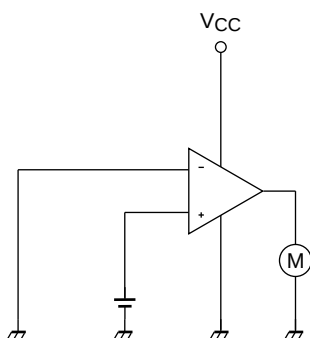


5. V_{op-p}

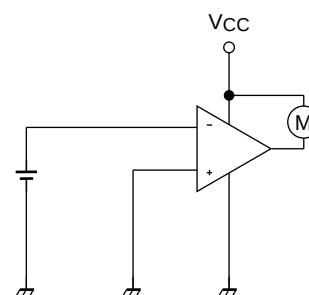


V_{OH} : SW₁ IS SIDE A
 V_{OL} : SW₁ IS SIDE B

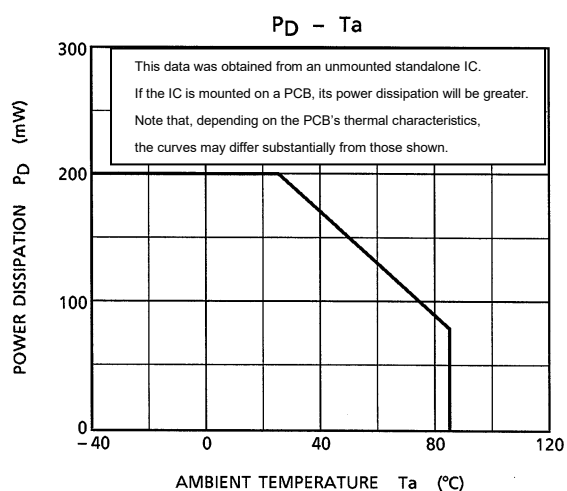
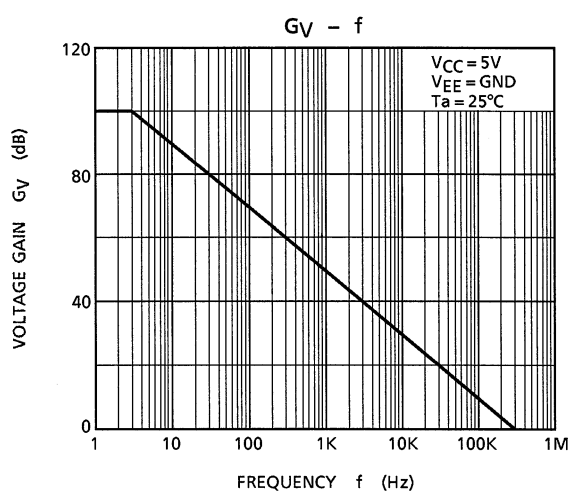
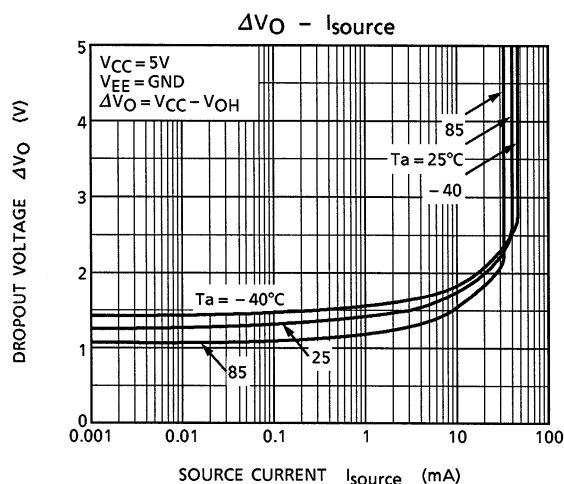
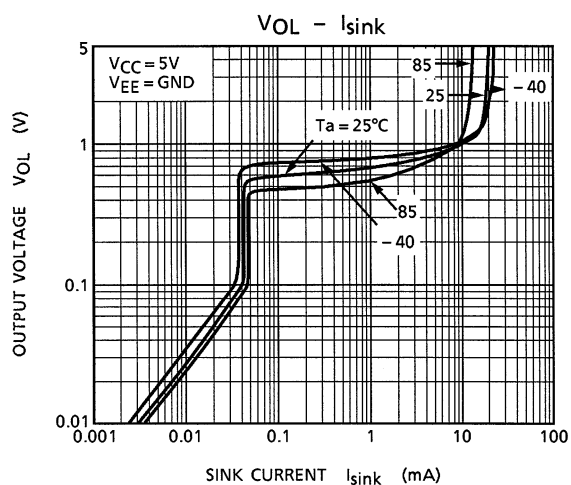
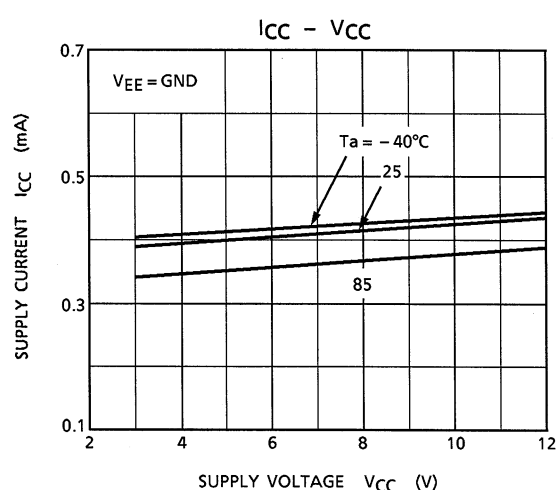
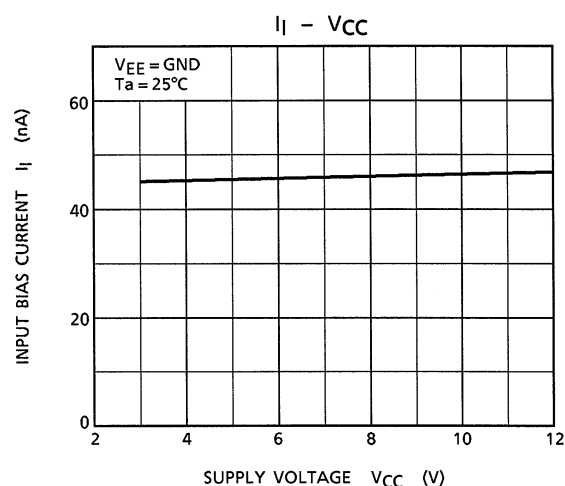
6. I_{source}



7. I_{sink}



Characteristics Curves (Note)

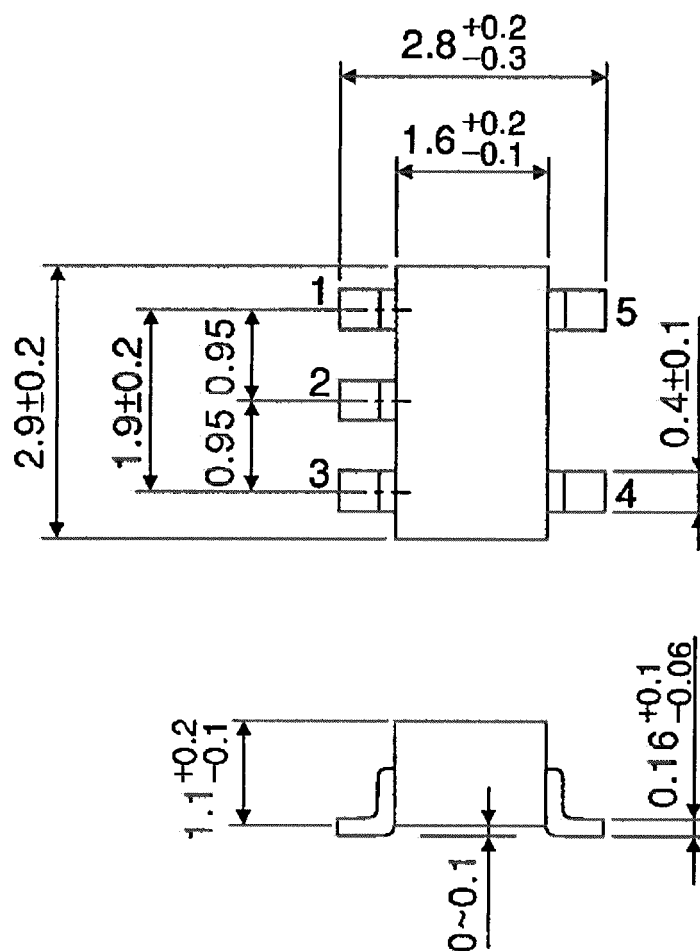


Note: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

Package Dimensions

SSOP5-P-0.95

Unit : mm



Weight : 0.014 g (typ.)

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