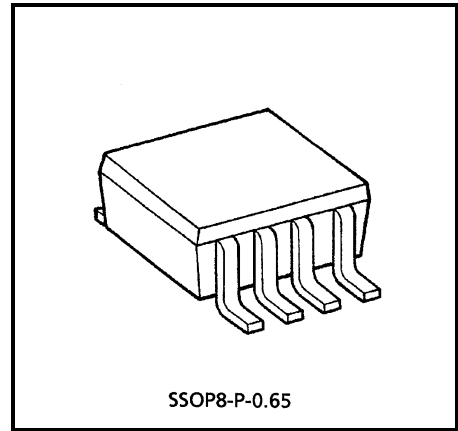


# TA75W01FU

## Dual Operational Amplifier

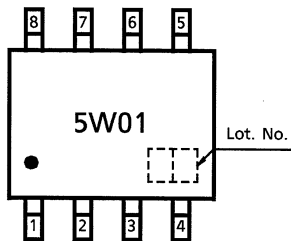
### Features

- 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 (VCC = 5VDC)
- Wide power supply voltage range and single power supply is possible.
- Single supply 3VDC to 12VDC or dual supplies  $\pm 1.5$ VDC to  $\pm 6$ VDC.

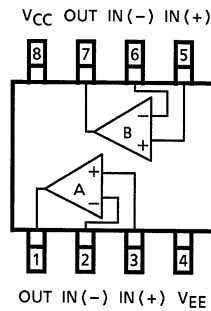


Weight: 0.021g (typ.)

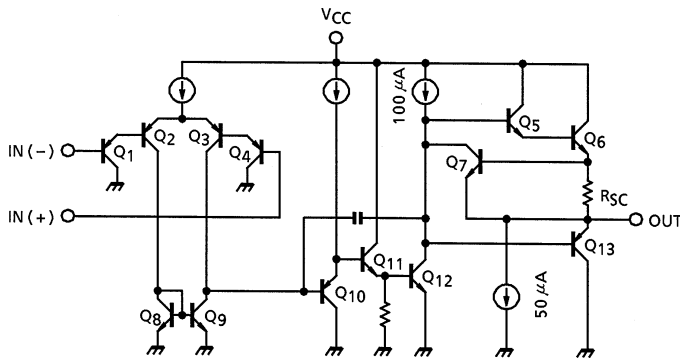
### Marking (Top View)



### Pin Connection (Top View)



**Equivalent Circuit**



**Absolute Maximum Ratings (Ta = 25°C)**

Characteristic	Symbol	Rating	Unit
Supply voltage	$V_{CC}, V_{EE}$	$\pm 6$ or 12	V
Differential input voltage	$DV_{IN}$	$\pm 12$	V
Input voltage	$V_{IN}$	$-0.3 \sim V_{CC}$	V
Power dissipation	$P_D$	250	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.

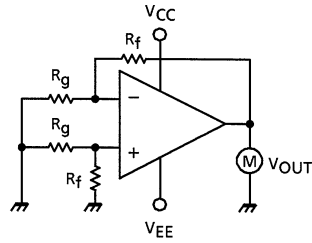
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

**Electrical Characteristics (VCC = 5V, VEE = GND, Ta = 25°C)**

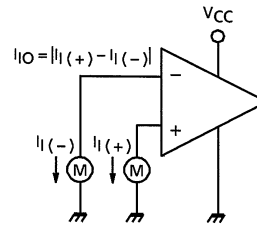
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Input offset voltage	$V_{IO}$	1	$R_g \leq 10k\Omega$	—	2	7	mV
Input offset current	$I_{IO}$	2	—	—	5	50	nA
Input bias current	$I_I$	2	—	—	45	250	nA
Common mode input voltage	$CMV_{IN}$	3	—	0	—	$V_{CC} - 1.5$	V
Supply current	$I_{CC}$	4	—	—	0.7	1.2	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**

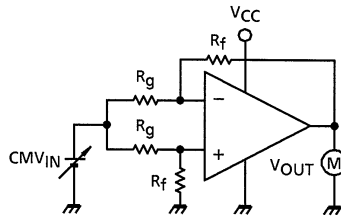
**(1)  $V_{IO}$**



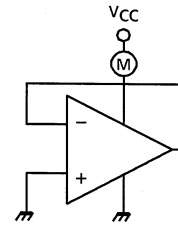
**(2)  $I_I, I_O$**



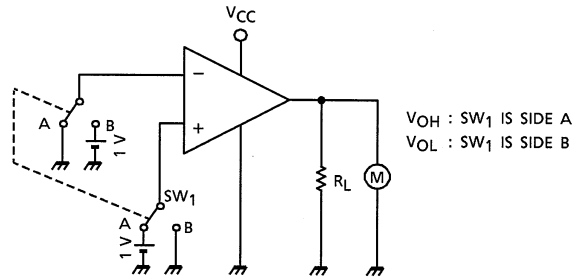
**(3)  $CMV_{IN}, CMRR$**



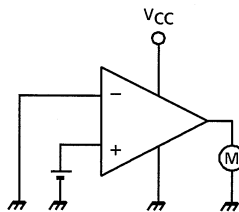
**(4)  $I_{CC}$**



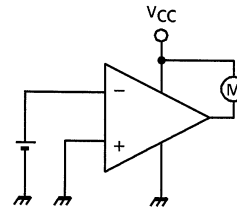
**(5)  $V_{OP-P}$**

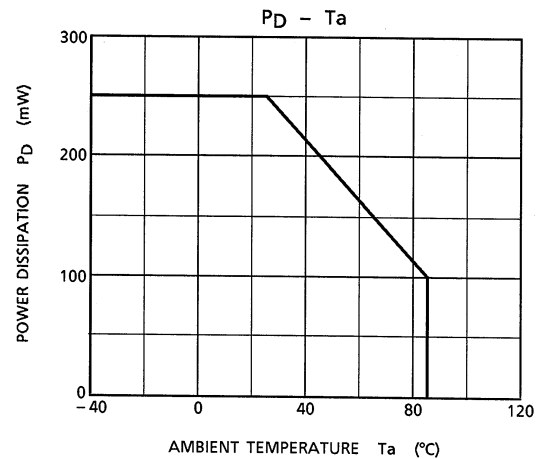
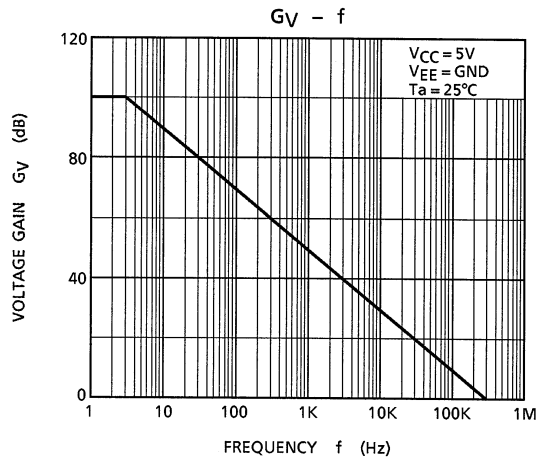
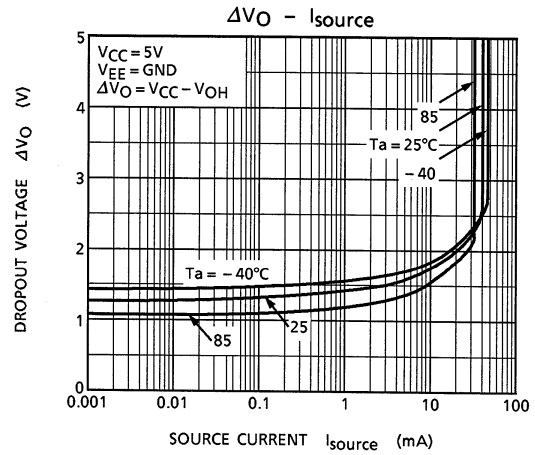
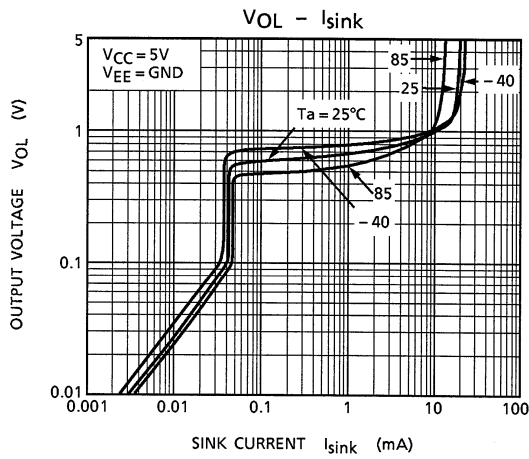
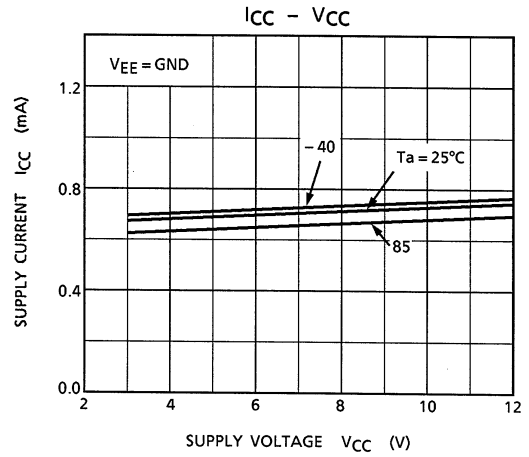
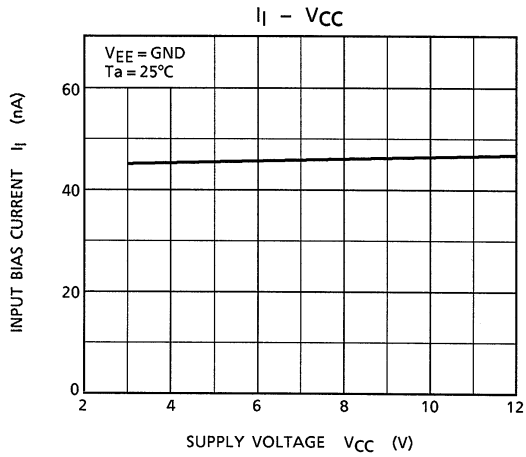


**(6)  $I_{source}$**



**(7)  $I_{sink}$**

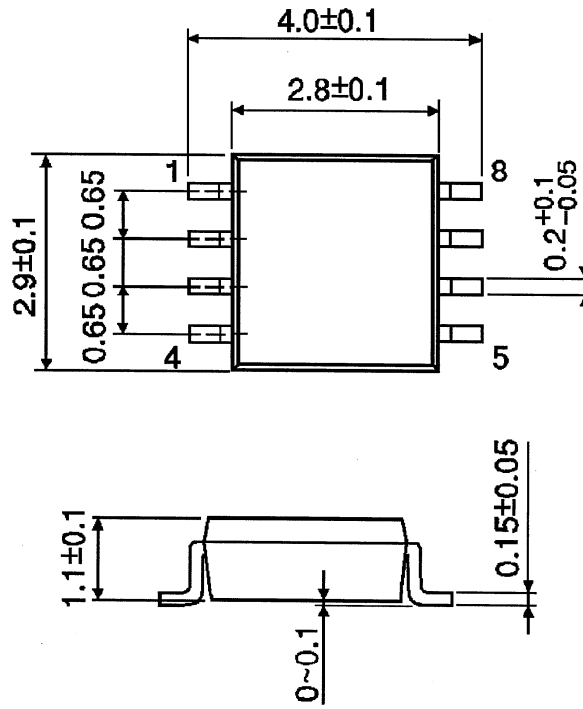




**Package Dimensions**

SSOP8-P-0.65

Unit: mm



Weight: 0.021g (typ.)

**RESTRICTIONS ON PRODUCT USE**

20070701-EN GENERAL

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