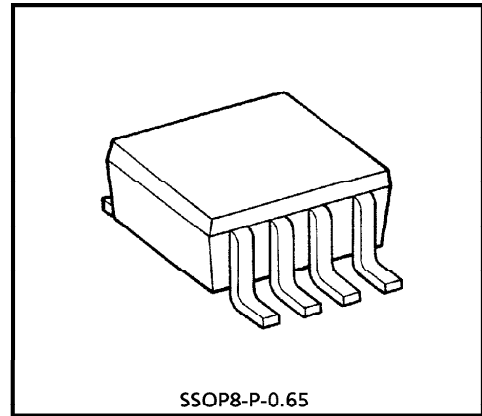


TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA75W393FU

## DUAL VOLTAGE COMPARATOR

This device consist of two independent voltage comparators that designed to operate from a single power supply over a wide range of voltage. Normal operation from dual supplies is also to be guaranteed on voltage range from  $\pm 1V$  to  $\pm 18V$ .  $V_{CC}$  is necessary at least more 1.5V volts than the input common mode voltage. The output can be connected to other open collector outputs to achieve Wired-OR relation ship.



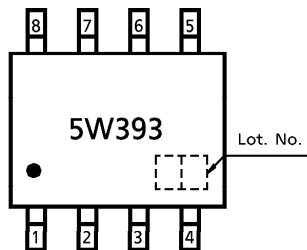
SSOP8-P-0.65

Weight : 0.021g (Typ.)

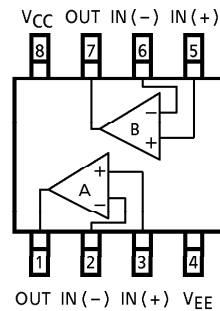
### FEATURES

- Compatible to TA75393.
- Single supply voltage range or dual supplies :  $2V_{DC}$  to  $36V_{DC}$  or  $\pm 1V_{DC}$  to  $\pm 18V_{DC}$
- Low supply current : 0.8mA (Typ.)
- Low input offset voltage :  $\pm 2mV$  (Typ.)
- Wide input common mode voltage range :  $0V_{DC}$  to  $V_{CC} - 1.5V_{DC}$
- Output compatible with TTL, DTL, MOS and CMOS logic system.
- The output can be connected to achieve Wired-OR relation.

### MARKING (TOP VIEW)



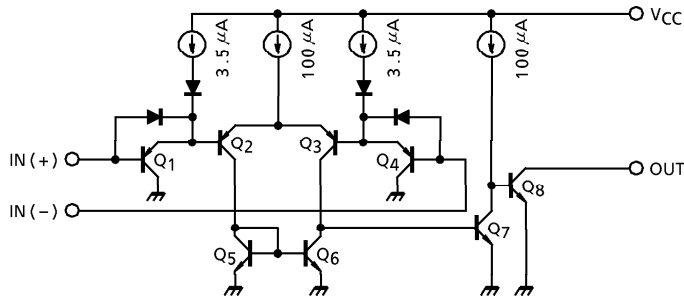
### PIN CONNECTION (TOP VIEW)



961001EBA2

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- The information contained herein is subject to change without notice.

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

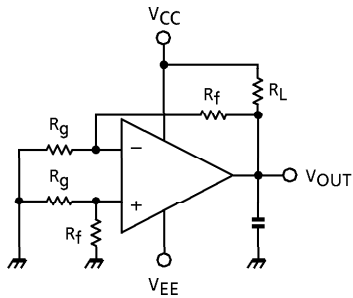
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub> , V <sub>EE</sub>	± 18 or 36	V
Differential Input Voltage	DV <sub>IN</sub>	± 36	V
Input Voltage	V <sub>IN</sub>	- 0.3~V <sub>CC</sub>	V
Power Dissipation	P <sub>D</sub>	250	mW
Operating Temperature	T <sub>opr</sub>	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 55~125	°C

ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 5V, V<sub>EE</sub> = GND, Ta = 25°C)

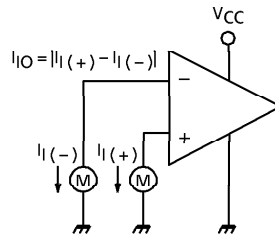
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	1	—	—	2	5	mV
Input Bias Current	I <sub>I</sub>	2	—	—	25	250	nA
Input Offset Current	I <sub>IO</sub>	2	—	—	5	50	nA
Common Mode Input Voltage	CMV <sub>IN</sub>	—	—	0	—	V <sub>CC</sub> - 1.5	V
Supply Current	I <sub>CC</sub>	3	No load	—	0.8	2	mA
Voltage Gain	G <sub>V</sub>	—	R <sub>L</sub> = 15kΩ	—	200	—	V/mV
Sink Current	I <sub>sink</sub>	4	IN (+) = 0V <sub>DC</sub> , IN (-) = 1V <sub>DC</sub> V <sub>OL</sub> = 1.5V	6	16	—	nA
Output Voltage ("L" Level)	V <sub>OL</sub>	5	IN (+) = 0V <sub>DC</sub> , IN (-) = 1V <sub>DC</sub> I <sub>sink</sub> = 3mA	—	0.2	0.4	V
Output Leak Current	I <sub>LEAK</sub>	—	IN (+) = 1V <sub>DC</sub> , IN (-) = 0V <sub>DC</sub> V <sub>O</sub> = 5V <sub>DC</sub>	—	0.1	—	nA
Response Time	t <sub>rsp</sub>	6	R <sub>L</sub> = 5.1kΩ, C <sub>L</sub> = 15pF	—	1.3	—	μs

TEST CIRCUIT

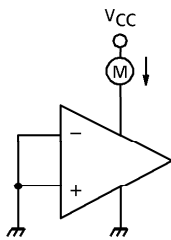
(1)  $V_{IO}$



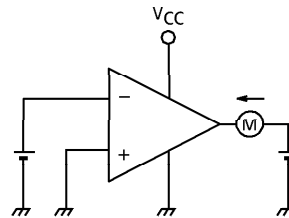
(2)  $I_I, I_{IO}$



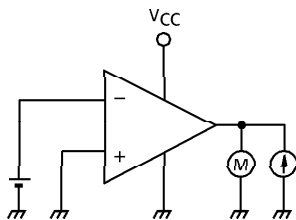
(3)  $I_{CC}$



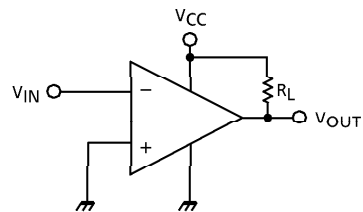
(4)  $I_{sink}$

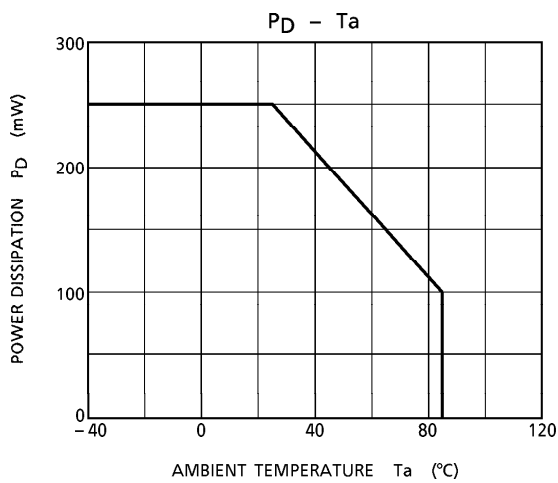
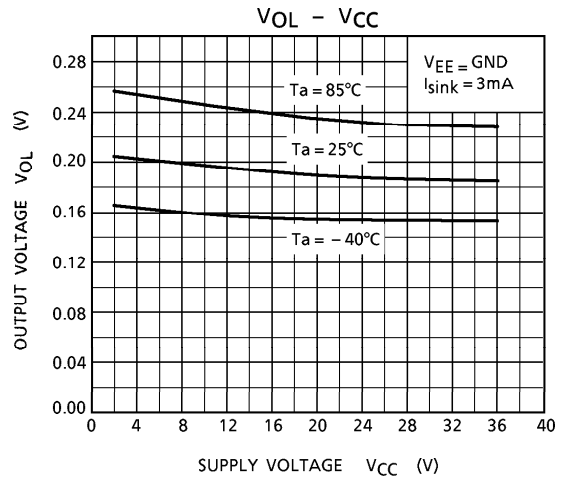
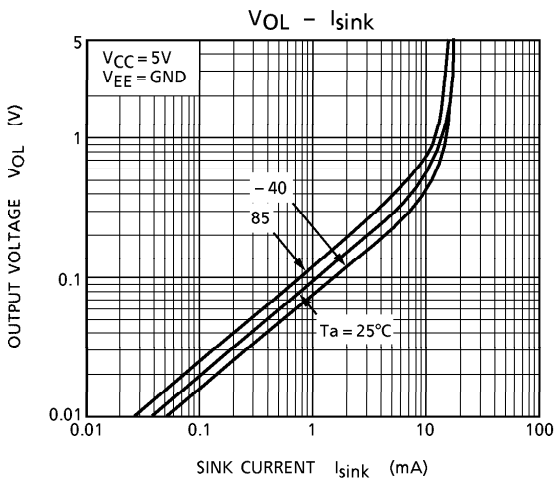
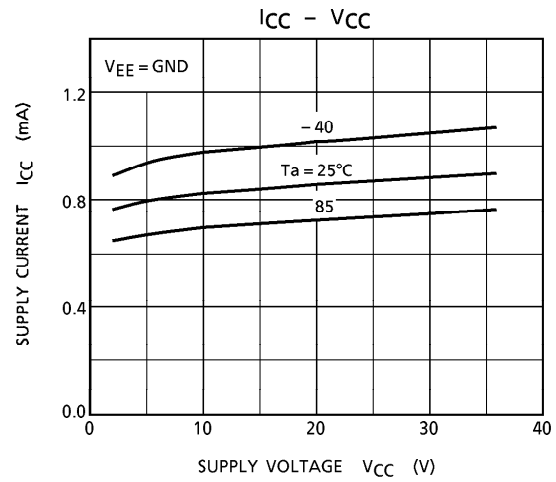
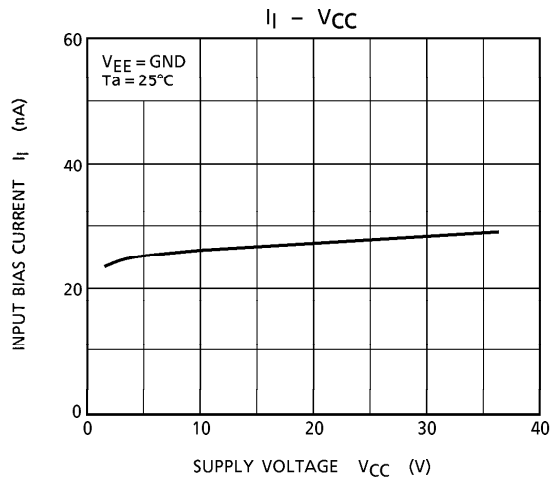


(5)  $V_{OL}$



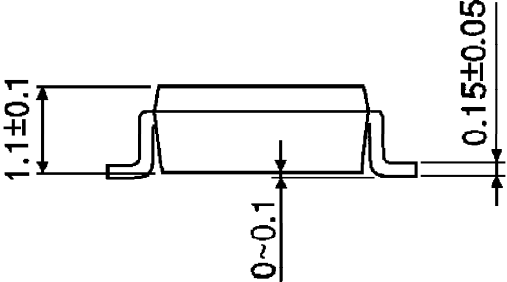
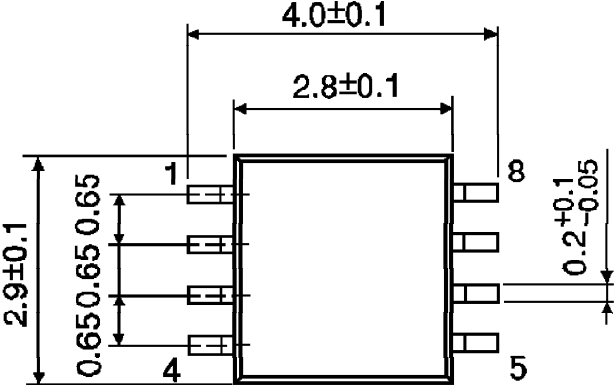
(6)  $t_{rsp}$





OUTLINE DRAWING  
SSOP8-P-0.65

Unit : mm



Weight : 0.021g (Typ.)